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Does the accumulation of self-employment experience impact life satisfaction?

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Abstract

This paper investigates the association of life satisfaction and self-employment experience. Using a large longitudinal dataset from the Understanding Society survey over the period 2009-2019, the paper examines how the allocation of time to wage- or self-employment affects individual life satisfaction. We argue that the typical dichotomous wage-employee/self-employed variable does not fully explain the association over time. Instead, when we measure self-employment experience over time, we identify significant variations. We examine the effects of self-employment experience on overall satisfaction and on a composite life satisfaction metric which combines the satisfaction with job, income, leisure, and health. We find that overall self-employment experience exhibits a positive effect on life satisfaction. However, we identify contrasting effects between the two life-satisfaction metrics in men and women. The results suggest the existence of effects above and beyond work related factors which affect men and women differently.

Keywords: Self-employment, Gender, Life satisfaction, Occupational choice,

JEL codes: J01, J16, J24, I31

1. Introduction

Policy-makers and governments are increasingly concerned with the employment factors that positively affect well-being and prosperity (Amorós and Bosma, 2013; Johansson Sevä et al., 2016). The decision to become self-employed or wage-employed has an impact on careers and lives (Budig, 2006; Jayawarna et al., 2013), as well as on national economic growth and development (Fölster, 2000). Self-employment has been consistently associated with non-financial benefits such as flexibility, autonomy and independence, commonly used to explain the higher satisfaction with work and life of the self-employed compared to the wage-earners (Benz and Frey, 2008a; Carree and Verheul, 2012; Millán et al., 2013; Parasuraman and Simmers, 2001; Shir et al., 2019; Wolfe and Patel, 2018).

The transition from wage-employment to self-employment has been shown to positively affect social standing, while the opposite transition has been associated with a reduction in social standing (Quadrini, 2000). Moreover, it has been shown that even the income-poor self-employed achieve a significantly higher consumption compared to income-poor wage-employees (Johansson Sevä and Larsson, 2015). Since, consumption has been associated with life-satisfaction (Brown and Gathergood, 2020), it is reasonable to assume that this higher consumption capacity contributes to the higher reported life satisfaction of the self-employed compared to the wage-employees. Therefore, the type of employment should have strong links with the level of individual life-satisfaction (Benz and Frey, 2004; Hessels et al., 2018; Lange, 2012; Sun and Anderson, 2010).

With the exception of the recent work by Koch et al. (2021), panel studies that examine the effect of employment transitions on well-being or life satisfaction, typically look at what happens at or around the point of the transition (Abreu et al., 2019; van der Zwan et al., 2018). However, individuals can transition from one type of employment to another more than once, so self-employment should not be treated as an end point, but as a stage in the career of

individuals (Koch et al., 2021). The association of self-employment experience and life satisfaction may evolve over time, reflecting past and present work and non-work experiences, which might not be fully captured by current measurements (Lévesque and Stephan, 2020; Stephan, 2018). The non-financial benefits related, for example, to autonomy, independence, and confidence, can evolve as the business goes through different stages of maturity (McMullen and Dimov, 2013). Once the business has gone through the initial stressful period of establishing itself, the business owner-manager may re-evaluate the positive and negative effects. Hence, satisfaction with work and life may be affected differently (Ryff, 2019).

In this paper, we use panel data from the Understanding Society survey collected over the period 2009-2019, to examine the effect of self-employment experience on life-satisfaction compared to wage-employment experience. We argue that individuals evaluate their career and life success in both occupational and socioeconomic contexts (Arthur et al., 2005), and they will switch into and out of self-employment in their pursuit of a better life and happiness. Therefore, self-employment should be examined as part of an overall employment career path (Arthur et al., 2005; Koch et al., 2021). Using a novel method to capture the accumulated self-employment experience over time, we show that the association between self-employment experience and satisfaction with life largely depends on the time allocated to self-employment. When we examine women and men separately, we find that women who allocate more time to self-employment experience a positive effect on their life satisfaction. Men who allocate more time to self-employment do not experience a statistically significant effect on their life satisfaction.

2. Theoretical Framework

2.1. The association self-employment experience and life satisfaction

There is an extensive literature that examines the effects of experience of wage- and self-employment on life satisfaction and subjective well-being. In general, the literature indicates

an overall positive association between self-employment and life satisfaction (Andersson Joona, 2008; Johansson Sevä et al., 2016; Wolfe and Patel, 2018). The positive effect of self-employment on life satisfaction may depend on the level of economic prosperity of the subject country (Amorós and Bosma, 2013; Wolfe and Patel, 2018), and the number of years the business has been operating (Amorós and Bosma, 2013).

Transitions into self-employment have been associated with a boost in individual well-being (Binder and Coad, 2016). However, Georgellis and Yusuf (2016) find that the job satisfaction boost is only temporary and it dissipates after time; Mattes (2016) also finds that the life satisfaction of the self-employed also decreases over time. Individuals can be forced into self-employment out of necessity (Block and Sandner, 2009; Stenard, 2019), resulting in differing satisfaction with work and life from those who became self-employed by choice. A German study on unemployment and life satisfaction finds that the unemployed individuals with higher life satisfaction prior to re-employment, were more likely to become self-employed (Krause, 2013). This suggests the presence of reverse causality which can distort the association of transitions into self-employment out of necessity and life satisfaction (Binder and Coad, 2016).

Benz and Frey (2008b, p. 454) argue that self-employment has been studied mostly in terms of job satisfaction, but “self-employment can have a price in terms of life satisfaction that makes it an unattractive option for a considerable number of people”. Some individuals attracted to self-employment for job satisfaction reasons may find this “price” on their life satisfaction too high. For example, it has been suggested that the self-employed work on average longer hours than wage-employees (van der Zwan et al., 2018). Additionally, the long hours of work, stress, and the uncertainty of running one’s own business can have a negative impact on health and leisure time (Bradley and Roberts, 2004; Georgellis and Yusuf, 2016;

Schonfeld and Mazzola, 2015; van der Zwan et al., 2018). Such effects can accumulate over time and negatively impact overall life satisfaction.

Individuals who transition into self-employment generally report higher dissatisfaction with leisure time, and this is more severe for those who transitioned into self-employment from unemployment. Individuals who find self-employment is not suitable for them or who were 'pushed' into it may seek work in wage-employment if the opportunity arises (Congregado et al., 2009; Mattes, 2016; Saridakis et al., 2018). Hence, we cannot assume that choosing into self-employment is the endpoint in the employment career of an individual.

Career advancement can often take a central role in an individual's life, with implications for the time and energy they can allocate to family responsibilities (Parasuraman et al., 1996). However, the work and non-work life elements of the self-employed are often so fused that it is difficult for them to view them separately (Stephan, 2018). Easterlin (1974) explains that people judge their happiness by comparing their situation with their peers and with their past experience. Prior employment experience has been shown to affect employees' expectations influencing the satisfaction they gain from their work and intentions to quit (Tsai et al., 2007). Life satisfaction offers a lens to examine this integrated view of employment experience by investigating how it changes as more time is allocated to wage- or self-employment.

Johansson Sevä and Larsson (2015) find that even the income-poor self-employed enjoy a significantly higher consumption than income-poor wage-employees. The comparatively higher consumption of the self-employed is supported by a high subsidy from business to household consumption of goods at an asymptotically zero cost, which results in higher economic well-being and standards of living for the self-employed (Bradbury, 1996; Carter, 2011; Johansson Sevä and Larsson, 2015). Since, consumption has been associated with life-satisfaction (Brown and Gathergood, 2020, 2017), this higher consumption capacity may

contribute to the higher reported life satisfaction of the self-employed compared to the wage-employees.

Satisfaction with work has been shown to have a significantly stronger association with overall life satisfaction for the self-employed than for wage-employees (Erdogan et al., 2012; Loewe et al., 2015; Thompson et al., 1992). The stronger association of work with life satisfaction for the self-employed might arise from extrinsic and intrinsic job satisfaction (Steiner and Truxillo, 1987). Extrinsic job satisfaction covers elements such as, pay and work prestige, which employees can carry with them when they switch jobs; intrinsic job satisfaction covers elements such as, autonomy and flexibility, which are inherent to the work itself and not easily carried over when individuals switch jobs (Steiner and Truxillo, 1987). Therefore, life satisfaction depends on the balance of extrinsic and intrinsic job satisfaction and personal preference. Moreover, such preferences can change over time to accommodate diverse personal needs (Lévesque and Stephan, 2020; Stephan, 2018).

Following on from the discussion above, we expect that self-employment will be positively associated with life satisfaction. However, we expect that the effect of self-employment experience on overall life satisfaction will diminish as more time is allocated to self-employment. Formally, this is expressed as:

H1: Self-employment experience has an inverted-U relationship with life satisfaction.

2.1. Is there a gender difference?

Women and men may choose to become self-employed for different reasons. Georgellis and Wall (2005) suggest that attitudes towards controlling one's life can be of particular importance in the analysis of women's self-employment decisions. Even though in industrially developed countries, such as the UK, the labour participation gap between women and men has been reduced (Eurostat, 2020; ONS, 2020), women are still subject to higher career complexity due to persisting gender roles and social stereotypes. For example, it has been argued that unlike

men, women condition their employment decisions based on their societal role (Still and Timms, 2000), and their employment preferences are strongly affected by motherhood and their caregiver role (Zhou, 2017). Women who are married will also cite work and life balance as a significant factor for becoming self-employed (Hughes, 2003). Studies have suggested that employment differences between women and men may not so prevalent at early career stages, but likely deepen later in the life (e.g., when families are formed) (Bönte and Krabel, 2014; Saridakis et al., 2014).

Studies indicate that women have a greater preference for flexibility, whereas men for autonomy (Craig et al., 2012; Mallon and Cohen, 2001; Powell and Greenhaus, 2010). Self-employment has been associated with both factors, but they appear to serve different goals; flexibility is associated with family demands and work-life balance, while autonomy with personal achievement and “being your own boss” (Benz and Frey, 2004; Boden, 1999). Hence, while both men and women will gain in terms of flexibility in self-employment, more women than men will use it to balance work and family obligations, rather than to accommodate other work or non-work activities (Loscocco, 1997; Marlow, 2006; Rønsen, 2012; Thompson et al., 2009).

Some studies also show that family related obligations affect women more than men with regards to their self-employment rates (Craig et al., 2012; Georgellis and Wall, 2005; Saridakis et al., 2014). Women may be more likely to enter self-employment seeking to balance work and family, as opposed to advancing their career. As people move through life stages they choose an employment that can accommodate their life events (Keizer et al., 2010). DeMartino and Barbato (2003, p. 818) observe that a higher proportion of women than men view the ownership of a business as “a job alternative that is more compatible with other aspects of their life”. They find that married women view wealth creation and career advancement as significantly less important than men. They also find that women who are either divorced or

widowed perceive financial benefits as more important than married women, suggesting that there are family-related effects influencing their behaviour (DeMartino and Barbato, 2003). Women who are divorced are more likely than men to exit self-employment in order to seek a more secure job in wage-employment (Saridakis et al., 2014). These findings suggest that not only there is a difference in the self-employment life satisfaction gains between men and women, but also important differences among women.

Goffee and Scase (1985) have suggested that self-employed women belong into two distinct groups: the *traditional* self-employed, who enter self-employment in order to balance work and family, and the *innovators*, who enter self-employment pursuing a business career and growth. Eventually the life satisfaction of women who choose to become self-employed to advance their career will differ from that of those who seek to balance work and family. However, those women who become self-employed for career development reasons, may eventually start a family, when work-life conflict may emerge. This type of life scenario is less likely for men due to social customs regarding housework and caring for children (Álvarez and Miles-Touya, 2016; Booth and van Ours, 2013; MacDonald et al., 2005).

Work-life conflict is negatively associated with job and life satisfaction for both men and women, but the effect is greater for women (Ernst Kossek and Ozeki, 1998). Analysis of different life dimensions reveals that while social/leisure factors are equally valued, women rank the job factor much lower than men (5th versus 2nd), whereas men assign the home and partner factors lower than women (3rd and 4th versus 2nd and 3rd) (Della Giusta et al., 2011). What these observations suggest is that women¹ experience more complexity in their life and employment careers than men which is reflected in their job and life satisfaction. Formally, we express this as:

¹ Table A1 in the Appendix lists the studies reviewed in our investigation which use gender/sex as a moderating variable.

H2: Longer episodes of self-employment experience will have a stronger positive effect on the life satisfaction of men than of women.

3. Data and Methodology

3.1. Data

We use data from the UK Household Longitudinal Study (UKHLS), also known as the Understanding Society survey. The UKHLS is a well-established and widely used nationally representative longitudinal survey of approximately 40,000 households (at Wave-1). The survey data of waves 1-9 were collected over the period 2009-2019 (University of Essex, 2019). We restrict the sample to participants who became wage-employees or self-employed at Wave-1 to limit the impact of prior employment experience outside the panel. This produced an unbalanced panel. We also balance the panel so that all participants are observed for equal employment periods.

We use the employment data to track the career of individuals throughout the panel and create a continuous variable that reflects the share of time they spent working as self-employed (SE) or wage-employees (WE), as well as time spent in unemployment, allowing individuals to switch from one employment status to another more than once. The result is a continuous variable (SELFEXP) which ranges from 0 to 1, where 0 indicates no self-employment experience, and 1 that all employment experience was self-employment. Life satisfaction is captured in two ways. First using an overall life satisfaction measure; participants are asked how dissatisfied or satisfied they are overall with their present situation on a 7-point scale, where 1 means ‘Completely dissatisfied’ and 7 means ‘Completely satisfied’. Second, we create a composite life satisfaction metric by combining² measurements of job satisfaction,

² The composite life satisfaction metric is created by calculating the mean value of the satisfaction measurements with job, income, leisure, and health. In the case of unemployment status where job satisfaction is inapplicable the other three satisfaction measurements are used. The output is then transformed to a 7-point index, where 1 comprises of the values from 1 to less than 2, 2 takes the values from 2 to less than 3 and so on. A factor analysis using the principal-component method shows that all the above satisfaction measures load on a single factor, with weak evidence of more than one factor after rotation. The estimated Cronbach Alpha is 0.656 for the 4 items and

income satisfaction, leisure satisfaction and health satisfaction. All satisfaction metrics use the same 7-point scale as overall life satisfaction. We examine the effects of self-employment experience on overall life satisfaction and on the composite life satisfaction metric³. First, we test the effects for the overall sample, then separately for women and for men. Secondly, we repeat the tests for an unbalanced panel to examine any potential loss of information (Fitzgerald et al., 1998; Verbeek and Nijman, 1992).

The analysis uses several control variables: sex, age and age squared, five education categories, four marital status categories, the number of children in the household, rural or urban residence, home ownership, house size and the condensed standard industrial classification of economic activities (SIC). In addition, controls for the linear effect of time (measured as panel waves) and for unemployment are included. The unbalanced panel models, were also tested with the inclusion of an attrition control variable⁴ to examine whether panel participation was significantly associated with the response variable (Verbeek and Nijman, 1992).

3.2. Statistical technique

Based on the approach first proposed by Mundlak (1978), we employ a hybrid ‘*within-effect*’ estimator for an ordered logit RE model (Andreß et al., 2013; Schunck, 2013; Wooldridge, 2019). The advantage of the hybrid ‘*within-effect*’ estimator model lies in its ability to decompose the between and the within variation in a random effects (RE) model and to estimate the fixed effects (FE), while preserving all the variables that do not vary within clusters (Schunck, 2013). Assuming a unit-specific mean of x and a time invariable unknown parameter

0.704 for the three items. We tested a fixed effects model using the factor analysis output and the results remain robust. The results are not included in the text, but are available upon request.

³ Compared to overall life satisfaction, the composite life satisfaction metric encompasses dimensions of life which are arguably more closely associated with work than non-work.

⁴ The attrition control variable measures the overall number of continuous UKHLS survey waves in which individuals participated.

u_i , then the approximation of the individual effect is expressed as $u_i = \beta\bar{x}_i + \eta_i$. The within-effect estimator model can then be written as:

$$y_{it}^* = \beta_1 x_{it} + \beta_2 \bar{x}_i + \gamma z_i + \eta_i + e_{it} \quad \text{for } t=1, 2, 3... T \quad (1)$$

where y_{it}^* is the 7-point Likert scale measurement response. β_1 reports the within estimator (FE), and β_2 reports the difference of the *within* and *between* effects, while γ captures the effect of the time invariant explanatory variables. The unknown parameters η_i and e_{it} , represent the time invariant and idiosyncratic errors, respectively. The estimates for the time-varying explanatory variables β_1 are identical to FE (Andreß et al., 2013). For the time-invariant explanatory variables the model captures only the between cluster effect, and estimates the *within* and *between* difference.

We estimate the effect of the allocation of time to self-employment on overall life satisfaction and on the composite life satisfaction measure for the overall sample, and separately for the sample of women and the sample of men, using a balanced and an unbalanced panel. All models are tested with robust standard errors to account for the presence of heteroskedasticity. The results for the unbalanced panel are presented in Tables 3, 4 and 5. The results for the balanced panel are in the Appendix Tables A3, A4 and A5. Table A2 in the Appendix offers a summary of the variables used in the statistical analysis.

Table 1 presents the mean of overall life satisfaction (Ove. Life Sat) and composite life satisfaction (Com. Life Sat) for the employed and unemployed (Panel A), and the means for wage-employees and self-employed (Panel B). Based on t-tests, those in employment enjoy a significantly higher level of life satisfaction (both Ove. Life Sat and Com. Life Sat) compared to the unemployed. The t-tests in Panel B indicate that there is no statistically significant difference in the overall life satisfaction between wage-employees and self-employed. However, the t-test for the composite life satisfaction is statistically significant at $p < .1$ significance level.

Table 2 presents the overall life satisfaction and composite life satisfaction disaggregated by gender for the wage-employees (Panel A), the self-employed (Panel B) and the unemployed (Panel C). There are no significant differences between women and men, although the t-value for the unemployed is just outside the 10 percent significance level. However, when we use the continuous self-employment experience measure, the differences between men and women become apparent.

Table 1. Life satisfaction of wage-employees, self-employed, and unemployed.

<i>Panel A</i>	Workforce population		Employed		Unemployed		t-test
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	
Ove. Life Sat	5.20	1.394	5.23	1.379	4.47	0.085	8.756***
Com. Life Sat	4.45	1.156	5.23	1.610	3.91	1.325	7.794***

<i>Panel B</i>	Employed population		WE		SE		t-test
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	
Ove Life Sat	5.23	1.379	5.23	1.374	5.21	1.422	0.434
Com. Life Sat	4.47	1.145	4.46	1.147	4.51	1.130	-1.334+

Note: t-test using Welch formula; significance *** p<.001.

Table 2. Life satisfaction of women and men by employment status.

<i>Panel A</i>	Wage-employees		Men		Women		t-test
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	
Ove Life Sat	5.23	1.374	5.22	1.360	5.23	1.385	-0.259
Com. Life Sat	4.46	1.147	4.47	1.148	4.45	1.146	1.025

<i>Panel B</i>	Self-employed		Men		Women		t-test
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	
Ove Life Sat	5.21	1.422	5.17	1.390	5.26	1.470	-0.993
Com. Life Sat	4.51	1.130	4.50	1.123	4.53	1.141	-0.487

<i>Panel C</i>	Unemployed		Men		Women		t-test
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	
Ove Life Sat	4.47	1.610	4.40	1.562	4.55	1.659	-0.913
Com. Life Sat	3.91	1.325	4.00	1.248	3.82	1.397	1.257

Note: t-test using Welch formula; the t-value of the composite life satisfaction for the unemployed is just 0.027 points below the t-value that would place the difference within the p<.01 significance level.

4. Results

Tables 3, 4 and 5 present the results of the hybrid model for the unbalanced panel⁵. Table 3 presents the results for the overall sample, Table 4 for women and Table 5 for men. The tables report the within-effects estimator results (i.e., FE), with the additional inclusion of the time-invariant variable for 'Sex', which captures the between-effect estimator result.

The results in Table 3 indicate a statistically significant linear association of self-employment experience with composite life satisfaction⁶. The linear model (Model-I) of self-employment experience shows a statistically significant positive effect on composite life satisfaction ($p < .1$), and the non-linear model (Model-II) shows a statistically significant non-linear effect on composite life satisfaction ($p < .05$ and $p < .1$ for the linear and quadratic term, respectively). It can be also observed that the coefficient of the linear term is larger than the quadratic one, suggesting there is a diminishing effect, but largely the satisfaction gains are preserved over time. Calculating the turning point for the non-linear effect observed in Model II, we find the increase reaches a threshold at around 73 percent of total employment experience after which life satisfaction starts to decrease. Hence, we find some evidence that supports hypothesis H1 (for one life satisfaction measure, but not the other).

The results in Table 3 indicate that individuals who allocate more time to self-employment enjoy an overall positive effect on their composite life satisfaction. The separate results for women (Table 4) and men (Table 5) reveal that the effects of self-employment experience captured in the overall sample (Table 3) derive from women rather than men.

⁵ The model specifications were tested with and without unemployment control to examine whether the inclusion of unemployment significantly alters the effects of employment experience over time on life satisfaction. The results indicate that the exclusion of the unemployment control did not significantly alter the results.

⁶ We also perform tests for the joint hypothesis that all the within and between differences have a zero effect using a Wald test (Andreß et al., 2013). The test for Model I results in a test statistics of $\chi^2 = 76.89$ with 36 *df*, indicating it is highly significant ($p < .0001$), and therefore the RE estimates would be biased. Similarly, Model II, $\chi^2 = 82.29$ with 37 *df*, ($p < .0000$); Model III, $\chi^2 = 84.20$ with 36 *df*, ($p < .0000$); Model IV, $\chi^2 = 87.42$ with 37 *df*, ($p < .0000$).

Table 3. Unbalanced Panel ‘Hybrid’ model: Overall Sample.

	Composite		Overall	
	Life Satisfaction		Life Satisfaction	
	Model-I	Model-II	Model-III	Model-IV
SELFEX	0.583+	1.777*	0.461	1.072
SELFEX (squared)		-1.219+		-0.637
Unemployed	-0.917***	-0.925***	-0.633*	-0.638*
Sex* (base: male)	-0.065	-0.071	0.119	0.112
Age	-0.162*	-0.158*	-0.226***	-0.224***
Age (squared)	0.001*	0.001*	0.001*	0.001*
Urban Area residence	0.130	0.138	-0.182	-0.178
<i>Educational Achievement</i>				
Elementary school	-0.151	-0.154	0.599	0.597
High school	0.200	0.197	0.9158***	0.915***
+16 education	0.122	0.118	0.5206**	0.519**
Vocational education (base: higher education)	0.233	0.240	0.8691**	0.874**
<i>Marital Status</i>				
Married/Civil Partner	-0.041	-0.053	0.115	0.110
Divorced/Separated	-0.063	-0.079	-0.175	-0.181
Widowed (base: single/not married)	0.764	0.773	0.403	0.408
Number of children in HH	-0.089	-0.089	0.042	0.041
Homeownership	0.040	0.045	0.068	0.071
House size	0.150***	0.150***	0.019	0.018
Wave	0.084	0.080	0.114*	0.112*
Industrial Sector (SIC)	YES	YES	YES	YES
<i>Statistics</i>				
χ^2	3306.24	3296.26	3106.55	3103.89
Log Likelihood	-14911.50	-14908.64	-15331.05	-15329.70
N	10676	10676	10676	10676

Note*: The time-invariant effect of Sex is the between effect captured by the γz_i ; + p<.1; * p<.05; ** p<.01; *** p<.001; SELFEX is the self-employment experience measurement, and SELFEX (squared) is its quadratic form; for brevity, the results show only the within-effect estimator values.

The results for women in Table 4 show that women who allocate more time to self-employment experience a positive effect in their life satisfaction which is captured in both the composite life satisfaction and the overall life satisfaction metrics. The effect of increased self-employment experience registers a stronger effect on composite life satisfaction (p<.05) than

on overall life satisfaction⁷ ($p < .1$). A statistically significant negative effect is also observed for unemployment on the composite life satisfaction, but not on the overall life satisfaction. This is likely an indication that women who become unemployed suffer a negative impact on elements of life associated with work (Models I and II). However, its impact is not strong enough to have a statistically significant effect on their overall life satisfaction (Models III and IV).

Table 4. Unbalanced Panel ‘Hybrid’ model: Women.

	Composite Life Satisfaction		Overall Life Satisfaction	
	Model-I	Model-II	Model-III	Model-IV
SELFEX	1.052*	2.341*	0.903+	1.749
SELFEX (squared)		-1.424		-0.951
Unemployed	-0.811**	-0.824**	-0.158	-0.164
Age	-0.197**	-0.194**	-0.173**	-0.170**
Age (squared)	0.001	0.001	0.000	0.000
Urban Area residence	0.080	0.087	-0.445*	-0.441*
Other controls	Yes	Yes	Yes	Yes
<i>Statistics</i>				
χ^2	5105.74	5140.42	2429.55	2439.21
Log Likelihood	-8078.59	-8077.55	-8201.97	-8201.42
N	5772	5772	5772	5772

Note: + $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$; SELFEX is the self-employment experience measurement, and SELFEX (squared) is its quadratic form; for brevity, the results show only the within-effect estimator values; all models include the control variables as described in Section-3: Data and Methodology.

The results for men in Table 5 do not capture a statistically significant effect of time allocated to self-employment on either measurement of life satisfaction. This might suggest that for men, self-employment experience does not have a significantly different effect on life satisfaction from experience in wage-employment. Nevertheless, men who become unemployed suffer a strong negative impact on their life satisfaction in both the composite and

⁷ It is worth mentioning that the statistical significance of the linear term of the self-employment (Model IV) was marginally outside the 10 percent significance threshold with an estimated $p = .108$.

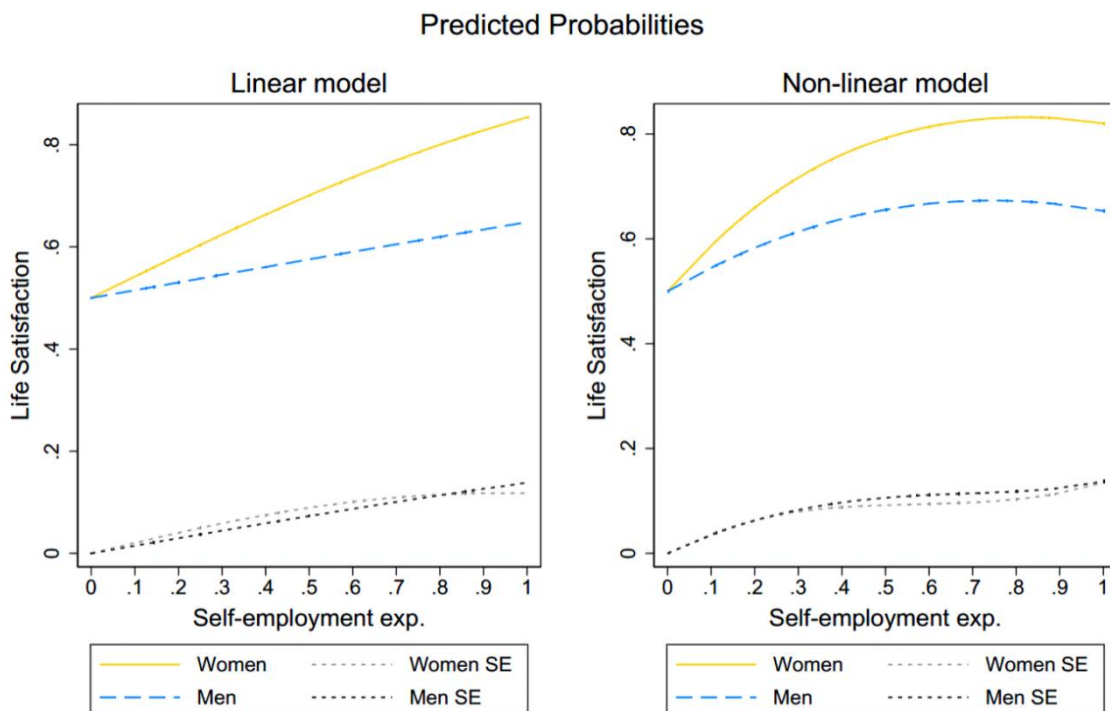
the overall life satisfaction metrics. Figure 1 illustrates the results for the composite life satisfaction for women and men, together with the associated standard errors.

Table 5. Unbalanced Panel ‘Hybrid’ model: Men.

	Composite Life Satisfaction		Overall Life Satisfaction	
	Model-I	Model-II	Model III	Model-IV
SELFEX	0.381	1.209	0.342	0.727
SELFEX (squared)		-0.815		-0.386
Unemployed	-0.841*	-0.849*	-1.095*	-1.100*
Age	-0.004	-0.002	-0.240+	-0.240+
Age (squared)	0.001+	0.001+	0.002**	0.002**
Urban Area residence	0.246	0.254	0.255	0.260
Other controls	Yes	Yes	Yes	Yes
<i>Statistics</i>				
χ^2	21288.95	21644.62	–	–
Log Likelihood	-6772.23	-6769.53	-7068.06	-7065.97
N	4904	4904	4904	4904

Note: + p<.1; * p<.05; ** p<.01; *** p<.001; SELFEX is the self-employment experience measurement, and SELFEX (squared) is its quadratic form; the χ^2 is not estimated by the statistical software (Stata) due to the presence of variables with non-zero values for just one observation in the unbalanced panel and the use of robust std. errors; for brevity, the results show only the within-effect estimator values; all models include the control variables as described in Section 3: Data and Methodology;.

Figure 1. Life Satisfaction and Self-employment: Women and Men.



Therefore, contrary to hypothesis H2, it is women who enjoy a greater beneficial effect on their (composite) life satisfaction rather than men. The results for the balanced panel models (Tables A2, A3 and A4 in the Appendix) capture similar effects of self-employment experience on life satisfaction.

5. Discussion and Concluding Remarks

The overall results offer support for hypothesis H1 that self-employment is positively associated with life satisfaction, but with indications of an inverted-U relationship ($p < .1$). The results regarding hypothesis H2 were rather surprising. We were expecting the association to be non-linear but with differences in the magnitude of the effect for women and men. However, the results suggest that longer episodes of self-employment experience have a positive effect on the life satisfaction of women, but not of men.

Women who pursue a career as self-employed appear to benefit compared to women who do not. While women might struggle at first with business venturing due to known limitations in accessing finance, combining the management of their own business and family obligations, as well as other gender-based constraints the accumulation of self-employment experience over time is beneficial. Additionally, the statistical significance of the ‘within-effects’ estimator indicates that the nature of the effects of self-employment on life satisfaction are rather idiosyncratic (Wiklund et al., 2019), while the statistical significance of the between-within estimator implies a typical random effects model would be severely biased.

The accumulation of self-employment experience does not appear have a significant impact on men’s life satisfaction (Table 5). What is more, becoming unemployed appears to have stronger negative effects for men than women. The negative effect of unemployment is captured both when examining the effects on composite life satisfaction and the effects on overall life satisfaction. When considering the stereotypical role of men as the household’s

'breadwinners' these results should perhaps not be unexpected (Chung and Hahn, 2020; Jayawarna et al., 2013).

Self-employment has become a lens through which researchers and policy makers can examine the attitudes and preferences of the workforce, for it allows the investigation of both the activities of the self-employed who operate or start-up a business, and the benefits they sought after by transitioning to self-employment. The employment career is developed through a series of employment choices and work experience accumulation which demand investments in time, money and energy (Super, 1953). Choosing into an employment that one feels enthusiastic about and keen on doing, can lead to a meaningful career and a satisfying life (Shin and Johnson, 1978). This study shows that the life satisfaction of men and women is affected differently based on the time they allocate to self-employment. self-employment studies that evaluate work and life success need then to investigate the effects of self-employment as part of a holistic career experience rather than an end point.

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Appendix

Table A1. Self-employment satisfaction studies reporting sex/gender effects.

Citation	Methodology	Gender effect
(Della Giusta et al., 2011)	Factor analysis using BHPS data on subsamples of women and men	Women and men rank differently the factors affecting their life satisfaction, with the partner's circumstances being more important to women
(Georgellis and Yusuf, 2016)	Linear fixed effects regression with lags and leads, on self-employment transitions duration using BHPS panel data	Self-employment transitions have more permanent effects for men than for women, with negative effects on satisfaction with work itself and pay, whereas positive effects on satisfaction with security.
(Krause, 2013)	Cross-sectional model examination of OLS residual life satisfaction effects, using IZA Evaluation data	Women and men have different labour market attachment, and this affects differently on their life satisfaction levels. The residual happiness distribution of men has longer tail distribution.
(Lange, 2012)	Cross sectional logit regression using data from the 2006 European Social Survey	Personal traits such as, risk propensity, recognition and achievements are important significantly affect the overall job satisfaction of men, but not of women.
(MacDonald et al., 2005)	Probit regression, using Canadian General Social Survey data	Self-employed women are more satisfied with work-home balance, but men are not.
(van der Zwan et al., 2018)	Linear fixed effects regression, and auxiliary experimental fixed effects ordered logit regressions, using SOEP panel data	Men receive a persistent negative effect on their leisure satisfaction after transition to self-employment, but not women. Life satisfaction increases for women shortly after self-employment transition

Table A2. Summary statistics.

	Mean	Std. Dev.
SELFEX	0.096	0.2716
Self-employed dummy	0.100	–
Unemployed dummy	0.034	–
Age	36.382	12.9967
Sex: female	0.541	–
Urban Area residence	0.797	–
Homeownership	0.645	–
Number of beds	2.986	1.1333
Number of children in HH	0.559	0.9278

<i>Marital status</i>		
Single/Never married	0.465	–
Married/Civil Partner	0.427	–
Divorced/Separated	0.098	–
Widowed	0.010	–
<i>Educational achievement</i>		
Elementary school	0.096	–
High school	0.290	–
+16 education	0.144	–
Higher Education	0.355	–
Vocational/Further Education	0.116	–
<i>Industrial sector (SIC)</i>		
Agriculture, forestry and fishing	0.002	–
Mining and quarrying	0.002	–
Manufacturing	0.077	–
Electricity, gas, steam and air conditioning	0.005	–
Water supply; sewerage, waste management	0.005	–
Construction	0.045	–
Wholesale and retail trade	0.134	–
Transportation and storage	0.044	–
Accommodation and food service activities	0.075	–
Information and communication	0.034	–
Financial and insurance activities	0.035	–
Real estate activities	0.010	–
Professional, scientific and technical	0.055	–
Administrative and support service activities	0.059	–
Public administration and defence	0.055	–
Education	0.109	–
Human health and social work activities	0.160	–
Arts, entertainment and recreation	0.032	–
Other service activities	0.026	–
Activities of households as employers	0.002	–
Activities of extraterritorial organisations	0.000	–
Wave	4.439	2.7183
Total Observations	10667	

Table A3. Balanced Panel ‘Hybrid’ model: Overall Sample.

	Composite		Overall	
	Life Satisfaction		Life Satisfaction	
	Model I	Model II	Model III	Model IV
SELFEX	1.182+	1.872	-0.532	-0.287
SELFEX (squared)		-0.700		-0.256
Unemployed	-0.658	-0.670	0.139	0.134
Sex* (base: male)	0.391+	0.393	0.566*	0.575*
Age	-0.277	-0.271	-0.291	-0.289
Age (squared)	0.003**	0.002**	0.002+	0.002+
Urban Area residence	-0.128	-0.121	-0.175	-0.173
<i>Educational Achievement</i>				
Elementary school	-1.173*	-1.190*	-0.503	-0.515
High school	-0.262	-0.270	1.236+	1.231+
+16 education	-0.592	-0.597	0.474	0.470
Vocational education (base: higher education)	-0.345	-0.349	0.613	0.610
<i>Marital Status</i>				
Married/Civil Partner	0.058	0.055	0.445+	0.442+
Divorced/Separated	-0.297	-0.300	0.066	0.063
Widowed (base: single/not married)	0.145	0.156	0.619	0.621
Number of children in HH	-0.009	-0.010	0.062	0.062
Homeownership	-0.049	-0.050	0.177	0.177
House size	0.218**	0.220**	0.164	0.164
Wave	0.053	0.049	0.096	0.095
Industrial Sector (SIC)	YES	YES	YES	YES
<i>Statistics</i>				
χ^2	2462.39	2465.23	1047.93	1044.96
Log Likelihood	-3324.096	-3323.912	-3325.044	-3324.453
N	2592	2592	2592	2592

Note: The time-invariant effect of Sex is the between effect captured by the γ_{zi} ; + p<.1; * p<.05; ** p<.01; *** p<.001; SELFEX is the self-employment experience measurement, and SELFEX (squared) is its quadratic form; for brevity, the results show only the within-effect estimator values.

Table A4. Balanced Panel ‘Hybrid’ model: Women.

	Composite Life Satisfaction		Overall Life Satisfaction	
	Model I	Model II	Model III	Model IV
SELFEX	2.483**	1.749	-0.598	-2.665
SELFEX (squared)		0.979		2.851
Unemployed	-1.419*	-1.421*	0.579	0.583
Age	-0.212	-0.216	-0.055	-0.075
Age (squared)	0.001	0.001	0.000	0.000
Urban Area residence	-0.522	-0.526	-0.7776+	-0.7754+
Other controls	Yes	Yes	Yes	Yes
<i>Statistics</i>				
χ^2	2466.87	2130.49	2796.38	2621.47
Log Likelihood	-1816.359	-1816.199	-1778.336	-1777.392
N	1422	1422	1422	1422

Note: + p<.1; * p<.05; ** p<.01; *** p<.001; SELFEX is the self-employment experience measurement, and SELFEX (squared) is its quadratic form; for brevity, the results show only the within-effect estimator values; all models include the control variables as described in Section-3: Data and Methodology.

Table A5. Balanced Panel ‘Hybrid’ model: Men.

<i>Within-effect estimator</i>	Composite Life Satisfaction		Overall Life Satisfaction	
	Model I	Model II	Model III	Model IV
SELFEX	0.576	0.775	-0.472	1.598
SELFEX (squared)		-0.184		-1.975
Unemployed	0.753	0.746	-2.084**	-2.174**
Age	-0.326	-0.324	-0.526+	-0.5089+
Age (squared)	0.004**	0.004**	0.004**	0.004*
Urban Area residence	0.422	0.426	0.399	0.435
Other controls	Yes	Yes	Yes	Yes
<i>Statistics</i>				
χ^2	2798.18	2970.98	5638.11	6224.01
Log Likelihood	-1467.962	-1467.942	-1499.090	-1496.996
N	1170	1170	1170	1170

Note: + p<.1; * p<.05; ** p<.01; *** p<.001; SELFEX is the self-employment experience measurement, and SELFEX (squared) is its quadratic form; for brevity, the results show only the within-effect estimator values; all models include the control variables as described in Section-3: Data and Methodology.