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In and Out of Self-Employment, Are You Really an Entrepreneur: The Rise of a New Division?

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Abstract: This paper examines self-employed individuals in the UK Labour market. We use an amalgamated dataset, the British Household Panel Survey, from the years 1991 to 2008, and its successor the United Kingdom Longitudinal Study, from years 2010 to 2014, following 11,657 respondents in the UK for 23 years. We explore the characteristics of different self-employed groups and create a new division that differentiates those who sustain in self-employment from those who move between self-employment and employee jobs. The sample size consists of 1146 sustained self-employed, 1149 dabbled self-employed and 9362 paid workers. We found that dabblers exhibit unique set of attributes that place them in a distinct position compared to sustained self-employed and/or employees. Dabblers seem to be 'pulled' rather than 'pushed' into self-employment, reflecting a labour market 'power' instead of deficiency. Thus, bringing key insight into a group who have not been separately identified in the labour market to date, the self-employed dabblers.

Keywords: dabblers, division, entrepreneurship, self-employment, sustainers

1 Introduction

A distinction between the self-employed and those who work as employees is at the heart of many key labour market debates. Studies that look at unemployment question whether self-employment is an easily accessible route into the labour market or an insecure dead end (Urwin and Buscha 2012). This triggers the reflection as to whether self-employed are 'pushed' or 'pulled' into self-employment (Dawson, Henley, and Latreille 2009; Dawson and Henley 2012;

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Deane 2016). The growth in self-employment during the economic downturn has added further fuel to these debates. In contrast to EU countries, the UK experienced an idiosyncratic surge in self-employment rates, particularly after the 2008 financial crisis. More than 630,000 workers became self-employed between late 2007 and 2014, representing the highest increase among EU countries (Eurostat 2018). Many scholars (e.g. Ashworth, Baker, and Goodhart 2014; Hatfield 2015) framed such changes as workers being 'pushed' into self-employment. In contrast, others established a 'pull' link by framing self-employment, small businesses and entrepreneurship as a fundamental driver of long-term growth (Deane 2016; Kelley et al. 2013). Therefore, leaving many speculations as to the reason behind the rise in self-employment. Is it due to strong market recovery, a sign of entrepreneurial spirit, innovation (Haj Youssef, Hussein, and Christodoulou 2019) and future economic growth (Swinford 2014)? Is it an indicator of a precarious and insecure work environment by which forces workers to enter self-employment due to absence of alternative paid jobs (Clark 2014a)? Or simply a trigger by employers to avoid taxation and employment responsibilities over their staff (Hatfield 2015)?

Although these explanations hold true, the real reasons and motives behind entering self-employment are still ambiguous. Especially for the UK economy, which has an unusual structure that favours self-employment entry on one side and limits the growth of businesses on the other (Meager 2007). This is extremely worrying, because of the set of existing policies are regarded as an artificial 'pull' factor to self-employment without employees, as well considered as 'push' factor for business owners wanting to take on additional workers (Urwin and Buscha 2012). A simple dichotomous distinction between the self-employed and employees is not enough, particularly to the long-term structural changes of the labour market; such as the rise of portfolio careers, hybrid workers and freelancers along with the emergence of the gig economy (Solesvik 2017). This has raised further questions about what it really means to be self-employed, as the main theoretical problem is the divide and the distinction between paid employment and self-employment. Hence, the self-employment landscape in the UK needs to be more distinguished and simplified to avoid any confusion in policy making.

Ambiguity is the key characteristics of self-employment conceptualisation, because different classifications and descriptions exist (Startienė, Remeikienė, and DumčIuvienė 2010). Academics, legal authorities, and workers view self-employment in different ways by subjectively classifying themselves. There is no unified legal description for the self-employed. As such measurement problems occur when establishing cross-country comparisons or even within the same environment. Even when computing earnings returns to human capital, adopting

the homogenous[1] classification of self-employed leads to peculiar returns that do not entail on the true value of being a self-employed nor an employee. In such situations, the comparison of returns would lead to biased estimates due to the (potentially unobservable) inter- and intra-differences within workers in self-employment and between paid employment (Dickson and Harmon 2011; Henderson, Polacheck and Wang 2011).

The self-employed are viewed as a stock of measure that has a strong dynamic/churn aspect. It encompasses workers who are temporarily in such state of employment, moving in and out, whilst others are more attached to self-employment and continue to engage in it. Heterogeneity of self-employed is being treated as a black box, whereby little work has attempted to tackle such issue. Many academic discussions focused on each group's impact on economic growth and job creation, from a macro perspective (e.g., Weenekers et al. 2005; Wong, Ho, and Autio 2005). While others analysed the heterogeneity between the divisions made, especially regarding the formulation of intention and motivation behind the choice of employment, from a micro perspective (e.g., Block and Koellinger 2009; Block and Sandner 2009; Block and Wagner 2010; Dawson, Henley, and Latreille 2009). But findings fell short in illustrating the differences between individuals who tackle self-employment temporarily, who dip in and out of self-employment, and who are at the margin between self-employment and paid employment, from workers who continue to pursue self-employment for a longer period. Hence, our study fills in such an important gap by carefully examining the important aspect of the dynamics of self-employment and highlight the possibility for a distinct group of individuals that cycle between self-employed and employee jobs.

We attempt to capture this effect by exploring a new division into self-employment, the self-employed dabblers and self-employed sustainers. We theorise about the differences between both subgroups of self-employed and paid employees, and test whether these differences really exist from a micro perspective. Since there is no comprehensive theory on the distinction criteria established between the dabbled and the sustained self-employed, we rely on an innovative exploratory technique to present the division. We argue that this distinction sheds new light on the growth of self-employment over recent decades. This information helps us understand the role of self-employed in the economy, with the most challenging factor looking at the issue of their security and longevity in this type of employment. The idea of dabblers and sustainers is important in a modern economy where the notion of portfolio workers is becoming increasingly significant and more apparent. Thus, the aim behind differentiating between these

1 Treating self-employed as one group of workers that has a single ideal type with a stable set of individual attributes.

groups of workers is to capture a new contemporary form of work in a more refined manner than the simple employment versus self-employment dichotomy and that falls into the grey area between these two labour market states. We provide key insights into a group (*Dabblers*) who have not been separately identified in the labour market to date. We offer a better proximity that presents the actual scene in the labour market and provide new microeconometric evidence on the heterogeneity among the self-employed and propose future work on estimating earning returns and studying transition behaviours of these workers over time. We shed important new light on the nature of self-employment in the UK and the growth that occurred over recent decades, to help understand the role of the self-employed in the economy and raise the awareness of policy makers to understand the changes in the labour market on the unique dabbling form of work to help ensure the relevant regulations and policies for all workers, notwithstanding what form of work they engage in.

2 Literature Review

The major difference between the self-employed and paid employees relates to the nature of contract signed (Freedman 2001). The self-employed sign a contract for service, while the paid employees sign a contract of service detailing the employee and employer relationship (Urwin 2011). Despite this usual and simple manner of distinction, there exists a clear grey area between both groups of workers. Because workers are not all the time committed to self-employment nor to paid employment, they can transit between both types of work overtime and can practice both jobs at the same time. Additionally, there are problems in identifying workers within self-employment, as previous studies looked at the self-employed as a homogeneous group of workers with a stable set of attributes (Meager 2007). In fact, they differ in respect to their socio-economic and demographic characteristics, human capital accumulation, motivations, attitudes, transition behaviours and reasons behind their choice and nature of work (Block and Wagner 2010). The self-employment theories emerged to try to explain the reasons behind why individuals choose to enter self-employment in contrast to paid employment. The 'Push' and 'Pull' model (Amit and Mueller 1995; Dawson, Henley, and Latreille 2009; Johansson 2000; Parker 2004) looks at the effect of external and uncontrolled forces behind why individuals choose to enter self-employment. The pull factors are characterised as positive motives and reasons, while the push factors are considered as negative ones that force workers to choose this type of employment (D'Arcy and Gardiner 2014). Also Weber's (1930) disadvantage theory, Light's (1972) protected market theory, Blalock's (1967) middleman minority theory

argue that individuals with certain unfavourable attributes,[2] enter self-employment as a response to their social exclusion in the labour market (Startienė, Remeikienė, and DumčIuvienė 2010 p: 269). Later work stressed on the heterogeneity within self-employment, by looking at various divisions, such as the difference between the self-employed and entrepreneurs (Blanchflower 2000, 2004), the push and pull entrepreneurs (Dawson and Henley 2012), the necessity and opportunity entrepreneurs (Block and Sandner 2009; Block and Wagner 2010; Fossen and Buttner 2013), the notion of hybrid entrepreneurs that combines both paid employment and self-employment jobs together (Solesvilk 2017), the self-employed with and without employees along with the formation of the entrepreneurial pipeline (Urwin and Buscha 2012).

An extensive amount of research looked at the self-employed as entrepreneurs, treated both types of workers as one, and both terminologies were used as synonyms (e.g. Block and Sandner 2009; Lofstrom and Bates 2009). While another group of scholars examined the distinction between the self-employed and entrepreneurs and questioned to what extent self-employment might reflect the true level of entrepreneurship (e.g. Dawson, Henley, and Latreille 2009; Krasniqi 2009). Self-employment is still perceived as an important proxy, but a less desirable state for entrepreneurship because of its drawback in combining all different job aspects into a single measure (Caliendo, Fossen, and Kritikos 2009; Thurik et al. 2008). The self-employed are considered the simplest type of entrepreneurs that suffer only from income risk and do not necessarily innovate (Fossen and Buttner 2013). It is one aspect of entrepreneurship but may not capture the whole level of innovation and size of enterprise (Glaeser, William, and Giacomo 2010). Self-employment activities do not seem to take such a great focus by policy makers, because workers' intentions towards choosing this employment path are unclear and indecisive (Urwin 2011). Whereas entrepreneurship is crucial for economic growth and is well supported by the UK government but the nature from where it evolves is still unpredictable (Urwin 2011 p: 12). There is certainly no lack of research on self-employment and entrepreneurship, but the problem persists in defining and establishing boundaries between these two definitions (Bruyat and Julien 2001 p: 166; Parker 2004 p: 3). In our study, we distinguish between entrepreneurs and self-employed and do not use these terminologies interchangeably, where we argue that the entrepreneurial effect is more evident for self-employed workers with higher levels of qualifications and in higher industry skill levels.

The qualification level shed light on the characteristics of people who enter self-employment. On the one hand, entrepreneurs are expected to be highly skilled workers who offer new and creative services to the market. From another

2 From ethnic minorities and immigrants to the country.

perspective, there is evidence suggesting that workers with labour market disadvantaged characteristics are more likely to become self-employed, because it represents an easier route to employment (Hatfield 2015). Statistics from the Eurostat Labour Market Database (2014a) showed that the self-employed in the UK are more likely to have low-level qualifications (less than primary or lower level of secondary education), and only 38% had higher qualifications in 2013 (Hatfield 2015 p: 21). However, findings on education are far from conclusive.[3]

Also, Worker's occupation and industry concentration provides an indication of the skill levels each posses.[4] Studies show that some sectors have certain job specifications that are highly associated with self-employment, like the high self-employment rates in the construction industry (e.g. D'Arcy and Gardiner 2014; Hatfield 2015; Meager 2007 for evidence on the UK); in law and accountancy (Dawson, Henley, and Latreille 2009) and most recently in the knowledge intense sector (D'Arcy and Gardiner 2014). According to Eurostat (2014a) statistics in 2013, the largest occupational group in the UK is professional (24%), followed by craft and related products (22%). Most UK self-employed are in highly skilled occupations (46%) (Hatfield 2015 p: 24). The rise in self-employment in the last 5 years has been observed in higher skilled managerial professional and associate professional jobs (Deane 2016).

Weber's (1930) disadvantaged theory and Light's (1972) cultural theory explore workers' socio-cultural origin and features, where they argue that workers from ethnic minorities and immigrants to the country are more likely to start their own business than to work in paid employment (Startienė, Remeikienė, and DumčIuvienė 2010 p: 269). This also relates to the "middleman minority theory" by Blalock (1967), where the consensus is that certain minority groups, either from a similar religion, race or immigrant status, sojourn in certain occupations, as they are pushed out of their desirable jobs and are forced to act as buffer zones between elite groups and masses. Therefore, they prefer to enter self-employment to fill in the market gaps and to live within marginal lines (Startienė, Remeikienė, and DumčIuvienė 2010). These groups of workers follow "the protected market theory"

3 Education either formal (educational) or informal (vocational) is an important determinant for self-employment entry as it helps self-employed workers to be well informed and more efficient in spotting business opportunities, improving the quality of business discovered and provided, increasing firms' efficiency, growth, longevity and stability (Baptista et al. 2010; Congregado et al. 2005; Loftstorm and Wang 2006; Thurik et al. 2008; Wilkins 2014). But the skills that make a good entrepreneur are not likely to be seen embodied only in formal education (Casson 2003). There are still unobserved factors that influence a person to become self-employed and the impact of education can be masked when differences across industries and fields of study are not considered (Bates 1995; Falk and Leoni 2009).

4 (Highly skilled, medium skilled or low skilled).

of Light (1972), where they allocate their work in geographical areas that are crowded with customers with similar disadvantaged characteristics, thus building geographically clustered areas and reserved economies for minority groups (Andrea and Robert 2004 p: 21). Such an approach allows them to find their skills much better rewarded and in better use than if they were engaging in paid employment. Thus, they are reluctant to become entrepreneurs as they perceive self-employment as only a source of income rather than an opportunity (Andrea and Robert 2004; Light 1979; Light and Rosenstein 1995; Startienė, Remeikienė, and DumčIuvienė 2010).

The Roy Model, by Heckman and Sedlacek (1985) examines the aspect of the disadvantage theory, pioneered by Weber (1930), by looking at certain people with unfavourable attributes, whereby individuals are more likely to enter self-employment as a response to their social exclusion in the labour market and because it would yield higher returns instead of experiencing longer spells of unemployment (Andrea and Robert 2004). Mainly this relates to the unemployed, who are mostly viewed as incompetent and face difficulties in getting hired (Carrasco 1999; Evans and Leighton 1989; Light 1980; Meager, Bates, and Cowling 2003). Similar reasoning applies to workers who are being discriminated against in the labour market, unfamiliar with the country's culture (Haj Youssef, Hussein, and Awada 2020), customs and traditions, who face difficulties with their English language and are in poverty (Light 1979; Lofstrom 2002).

Sociologists argue that the high levels self-employment rates are explained by the presence of these minority groups known to be disadvantaged, misfit and sensitive to any changes in the labour market. This matches with the findings of Rees and Shah (1986) and Evans and Leighton (1989) that showed the self-employed to be the misfit workers for paid jobs, the low earners and the less educated ones. Studies on the UK show that non-white workers are marginalised in the labour market and less likely to be in paid employment (e.g. Dawson, Henley, and Latreille 2009; Fairlie 1999, 2004; Fairlie and Robb 2007; Martinez-Granado 2002). Thus, ethnic minority members are disadvantaged and discriminated in the labour market because employers find difficulties in recognising their skills, due to language barriers, ignorance of customs, culture and discrimination. Similarly, immigrants who feel discriminated against are more likely to enter and do better in self-employment than paid employment (Constant and Zimmermann 2006; Dawson, Henley, and Latreille 2009; Kangasniemi and Kauhanen 2013; Lofstrom 2002). In the case of the UK, immigrants had a considerably higher percentage (3%) of self-employment compared to the native population in 2012 (Eurostat 2014b). They are exposed to poor credit markets, higher borrowing rates and higher consumer discrimination (Blanchflower, Levine, and Zimmerman 2003; Borjas and Bronars 1989; Clarck and Drinkwater 2000; Simoes and Crespo 2015). The disadvantages

may also result from limited access to financial resources and constraints that bound the business set-up and increase operations in informal markets (Andrea and Robert 2004; Boyd 2000; Light and Rosenstein 1995). As more human and physical capital is needed to help start-up of the business (D'Arcy and Gardiner 2014; Hatfield 2015; Parker 2004 p: 70).

The aim of our study is to uncover hidden dissimilarities of the UK sample workforce, to identify the motives behind why workers engage in self-employment, and the extent to which heterogeneity is present among the different subgroups of self-employed workers. Thus, adding an important dimension to these debates over whether self-employment can be thought of as a labour market state that arises from an advantage or disadvantage. As one would expect, both viewpoints have some amount of truth and are more likely representative of the heterogeneity that we observe amongst 'the self-employed'.

Dawson and Henley (2012) related entrepreneurs to the "Push" and "Pull" model, whereby "push" entrepreneurs are forced to become entrepreneurs out of inevitability, and because of negative reasons and motivations. Whereas "pull" entrepreneurs are self-driven by positive factors, motivations and favourable labour market conditions (Block and Wagner 2010). Ritsilä and Tervo (2002) defined "push-entrepreneurs" as individuals who in the absence of personal unemployment would not start their own business. The 'pull' motives dominate entrepreneurial activities for both men and women, where entrepreneurs are much more likely to engage in innovative jobs and to have an impact on the macro-economic performance (Fossen and Buttner 2013; Segal, Borgia, and Schoenfeld 2005; Thurik et al. 2008; Van Stel, Storey, and Thurik 2005). The 'push' motives comprise self-employment involvedness, where workers only practice conventional tasks, and consider this type of work as a last resort due to the high barriers of entry in paid employment, with lengthy spells spent in unemployment (Segal, Borgia, and Schoenfeld 2005).

Although the current economic conditions are significant in explaining the necessity motives behind the choice for becoming self-employed, it is still difficult to know to what extent individuals are pulled or pushed into self-employment, as the distinction becomes a bit ambiguous when motives combine and clash as 'pull' and 'push' factors at the same time. Because workers are heterogeneous and report the presence of both factors in influencing the decision to become self-employed, this makes the meaning of certain motives debatable and questionable (Dawson, Henley, and Latreille 2009; Dawson and Henley 2012; Fairlie and Fossen 2017).

The notion of opportunity and necessity entrepreneurs is like those of the "Push" and "Pull" model in pursuing entrepreneurial activity (Amit and Muller 1995). In 2001, the Global Entrepreneurship Monitor (GEM) distinguished between two types of entrepreneurs: opportunity and necessity entrepreneurs because of

their increasing relevance, importance, differences and because of the targeted policy initiatives (Meager 2007; Sternberg, Brixy, and Schlapfner 2006). Opportunity entrepreneurs start their business to pursue an opportunity and necessity entrepreneurs start because of the need to do so (Reynold et al. 2005). Block and Wagner (2010) theorised about the differences in the characteristics, abilities and exploitation of opportunities between necessity and opportunity entrepreneurs and attempted to justify these dissimilarities in theory and practice. They implement a more specific definition that is quite like the GEM definition but different from the 'push' and 'pull' motives. They focus on the way entrepreneurs came to entrepreneurship, and the circumstances that made them leave their previous work. Using the German Socio-Economic Panel Study, from the years 1984 to 2004, they select individuals who are self-employed, excluding serial entrepreneurs after their first entrepreneurial activity, those who work in family-owned businesses, workers from former East Germany and respondents with observations exceeding the two years' interval in which the termination of the last job occurred. The rationale behind their adoption is to not mix the motives behind self-employment decision and to avoid confounding effects related to the macro-economic conditions of East Germany. Findings show that both subgroups differ in their human capital, where opportunity entrepreneurs exploit more profitable opportunities than necessity entrepreneurs (Block and Wagner 2010). Hence, the start-ups out of unemployment have a significant lower survival rate than other start-ups (Pfeiffer and Reize 2000). They often occur in industries with low entry barriers and capital requirements, are smaller in number, have limited number of employees and have a slower pace of growth than other businesses (Block and Wagner 2006).

Hybrid entrepreneurs on the other hand, combines entrepreneurship and employment at the same time (Solesvik 2017). This form is particularly popular among highly educated professionals in knowledge-intensive and innovative industries (Petrova 2012), where it provides an attractive bridge for workers having difficulties in dropping their waged work and starting their own business (Smallbone and Welter 2001). Also, it is a good way for workers who are risk averse to realise their entrepreneurial intention. But the literature reveals some inconsistency in the definitions related to hybrid entrepreneurship, as some define them as workers who mix their time in self-employment and paid employment (Folta, Delmar, and Wennberg 2010). While others identify them as "part-time entrepreneurs" (Petrova 2012), without even implying that they engage in paid employment (Schulz, Urbig, and Procher 2016). Solesvik (2017) argues that these groups of workers should be considered as a homogenous group, because one can stay in full time employment and the other in full time self-employment. In contrast, Schulz, Urbig and Procher (2016) argue that this group of workers is not homogenous, as some are more highly educated than others and act differently to their less

educated counterparts. Therefore, they call for more research exploiting the different types of hybrid entrepreneurs, as it is unclear where their attachment lie.

In addition, the entrepreneurial pipeline is the transition of workers from being solo self-employed to being self-employed with employees (Urwin and Buscha 2012). Lazear (2002) claims that the self-employed without employees tend to be less skilled than employers of large business, but still need to know about the process of business set-up and how goods and services are produced and delivered to customers. Whereas, Startienė, Remeikienė, and DumčIuvienė (2010) argue that the solo-self-employed require more skills and knowledge than entrepreneurs with employees, as the burden of the whole business lies on them. The UK enjoys the highest proportion of self-employed without employees in comparison to other European countries (D'Arcy and Gardiner 2014; Deane 2016; Urwin and Buscha 2012). Thus, the present "one size fits all" policies approach that target entrepreneurship do not work equally on both types of self-employed.

Despite all these categorizations, the literature remains incomplete particularly on an important specification of self-employed workers; differentiating those who sustain in self-employment from those who move between self-employment and employee jobs. We aim to shed light on a new subgroup of self-employed relevant to the outcome of the labour market and evident in our observed study. We create a new division that differentiates those who sustain from those who cycle between self-employed and employee jobs, but do not engage in both work at the same time and link with the notion of necessity and opportunity entrepreneurs, the push and pull model and the disadvantage theory. Our work aims at establishing a fine line between two groups of workers in self-employment and differentiating them from those who only engage in wage employment. As such, we distinguish the dabbled from the sustained self-employed. We classify dabblers as workers who tackle self-employment temporarily, who dip in and out of self-employment, and who are at the margin between self-employment and paid employment, different from hybrid entrepreneurs who combines both work at the same time. While, we consider sustainers as workers who engage most of their employment time in self-employment and who sustain longer than the dabbled self-employed in this type of work. By doing so, we create a new categorisation of the self-employed in the UK that represents the actual scene in the labour market. Such classification allows us to unravel the ambiguity in earlier distinctions made between the different subgroups within self-employment and between paid employment based on the observed persons' socio-economic and demographic characteristics.

2.1 Hypotheses Development

Since there is no comprehensive theory on the distinction criteria established between the dabbled and the sustained self-employed, some parts of this paper are exploratory and descriptive in nature. The rationale behind this new categorisation is that workers who dabble in and out of self-employment exhibit different sets of behaviours from workers who sustain longer in that state. Thus, they are different with respect to their observed socio-economic and demographic characteristics from the sustained self-employed and paid workers who only engage in wage employment (the always employees). We define dabblers/self-employed dabblers/dabbled self-employed as workers who engage in self-employment for a short period of time, then switch to paid employment or vice versa. They are considered at the margin of self-employment and paid employment and might spend more time in self-employment than paid employment or vice versa, but do not engage in both work at the same time, different from hybrid entrepreneurs. In contrast, the sustainers/self-employed sustainers/sustained self-employed are workers who continue in self-employment for a longer period. Because they spend more time in this form of work, we consider them as more established and attached to self-employment than dabblers, where they run larger enterprises and might take on additional staff members. Thus, the time seen in self-employment plays a crucial role in the distinction between these two sub-groups of self-employed. It signifies the learning process by which workers learn more about their abilities over time and discover whether they have the appropriate skills to continue as self-employed or fail to do so.

We argue that because dabblers cannot ensure any persistency in self-employment nor in paid employment, we see them as negatively motivated workers who involuntarily choose to enter self-employment, thus are pushed into self-employment, considering this type of work as a last resort because of the high barriers to entry in paid employment. They are more likely to resemble the previous definitions of self-employed, as well as push and necessity entrepreneurs, because we do not see them for longer periods in self-employment. Different from hybrid entrepreneurs, they do not engage in both jobs at once and are more likely to stand out as sole self-employed without employees and represent the less educated group of workers who engage in self-employment out of necessity and are not entrepreneurs. Hence, we consider them to be marginalised in society, and we relate them to Weber's (1930) disadvantaged theory, Light's (1972) cultural theory and Blalock's (1967) middleman minority theory. We expect them to be misfit workers with less advantaged attributes (members of ethnic minority groups, have culture and customs avoidance, experience

language barriers, face poor credit access, have lower educational qualifications etc.) and consider them to be pushed into self-employment. We predict that dabblers are different from the sustained self-employed with respect to their socio-economic and demographic characteristics, they fairly resemble regular employees, but are less advantaged with respect to their attributes, as they are not able to secure long spells in paid employment. We consider them to be disadvantaged in the labour market with respect to their observed attributes in comparison to the sustained self-employed and paid employees. Thus implying that they are pushed into self-employment, similar to the notion of pushed and necessity entrepreneurs, where they perceive this type of work as a temporary phase to later secure wage employment.

On the other hand, we view sustainers as more closely aligned and further attached and established in self-employment as opposed to their dabblers' counterparts. We assume that they are more likely to be pulled into self-employment, are positively motivated to enter this type of work and can expand their work by taking on additional staff members. They are more likely to have aligned attributes with self-employment and are more advantaged than self-employed dabblers. We believe that they are more entrepreneurially oriented and resemble to the pull and opportunity entrepreneurs. We consider sustainers to be entrepreneurs rather than self-employed by being the highly talented and skilled workforce in the labour market, with respect to human capital accumulation and industry skill levels and with more aligned attributes with self-employment. Also, we expect them to have different characteristics from workers who only engage in paid employment.

Therefore, we hypothesise that:

1. Hypothesis 1: Dabblers are different to Sustainers in their socio-economic and demographic characteristics.
2. Hypothesis 2: Dabblers are like Employees in their socio-economic and demographic characteristics but have fewer advantaged attributes.
3. Hypothesis 3: Sustainers are different to Employees in their socio-economic and demographic characteristics.
4. Hypothesis 4: Sustainers have more advantaged attributes and are aligned with self-employment as opposed to Dabblers.

This study is very exploratory in nature, as '*a priori*' it is unclear whether those on the margins of self-employment (*Dabbler*s) will have characteristics that are more closely aligned with employees or the self-employed. If we find that dabblers are particularly disadvantaged in terms of occupation, income, ethnicity and other characteristics, the suggestion seems to be that they oscillate between these two

labour market states because they are unable to sustain one or other forms of working and perhaps simply reflect a more general lack of 'employment' or 'labour market' security. If we see a more advantaged group; according to key characteristics, the implication is that we have a group who control a sequential portfolio of working people, potentially making the most of self-employment and employee jobs opportunities as they arise. Furthermore, dabblers may simply be the younger versions of those who become sustained self-employed. In that case, our work would be in line with Urwin and Buscha's (2012) notion of the 'entrepreneurial pipeline' in relation to how the solo-self-employed become self-employed with employees. Additionally, dabblers may seem to be trying both types of employment to see what best suits their skills or preferences, because their agile way of working helps them learn more about their abilities and their likes and dislikes in the job market.

This study sheds new light on several important academic and policy debates, arising from the creation of a new distinction in self-employment. We identify a new heterogeneity in self-employment that captures the dip-in and out behaviour of workers in this employment status and provides a more realistic approximation of what we observe in the labour market. There is a need to gain a better understanding of the nature of self-employed workers, especially after their outgrowing number in the UK labour market. This help review policy aims that benefit all members in self-employment and provide support in areas where there is discrepancy with the aids and rights offered to support paid employees (BIS 2016). Because the complex nature of self-employment poses considerable challenges for the development of efficient economic policy measures (Simoes and Crespo 2015).

Nonetheless, it is worth noting that the work on self-employment is associated with some degrees of uncertainty and lack of information, because it is not possible to assign probabilities on the selection into entrepreneurial activities (Blanchflower and Oswald 1998). Also, self-employment is episodic, and the theoretical arguments that rely on stable sets of attributes for individuals are bound to be incomplete, because factors that lead to self-employment might change at different points of time (Glenn and Elaine 1987 p: 8). However, we are determined in establishing an adequate distinction within self-employment and between paid employment and in exploring the differences in the socio-economic and demographic characteristics of workers that we observe for over 23 years, to help us identify how and in what the self-employed workers are different within each other and from paid workers.

3 Methodology

3.1 Sample, Data and Descriptive Statistics

We select all self-employed individuals in the UK to represent our sample. The UK showed distinctive characteristics when it comes to self-employment as rates have idiosyncratically increased in recent years as opposed to other EU countries, making the UK an ideal context to study sub-groups within self-employment.

We use combination of surveys, the British Household Panel Survey (BHPS),[5] and the United Kingdom Household Longitudinal Study (UKHLS).[6] BHPS surveyed UK respondents from 1991 to 2008, and UKHLS, its successor, followed them throughout an extended period, from 2010 to 2014 with missing year 2009. Because the first wave of the UKHLS did not incorporate the former BHPS household members, there are evident variations in the reference period for the continuing BHPS sample members from wave 18 (year 2008 in the BHPS) to wave 2 (year 2010 in the UKHLS), with the level of non-contact and untraced movers higher than before (Knies 2014, 2015).[7] Thus, year 2009 is missing. Both surveys are considered as representative of the United Kingdom's population between the years of study from 1991 to 2014, but are rather complex, when combined. As they are not administrative in their nature, because gathered information is largely based on self-reporting (Long 2009 p: 49). Another drawback when using survey data is the problem of missing data which is a long-standing problem that arises from non-responses, partial responses, methods of collection, measurement errors, attritions that happen frequently from panels that exhibit bias results (Cameron and Trivedi 2005; Wooldridge 2005). In microeconometric the standard and simplest approach to deal with missing values is to drop the observations and only analyse the reduced sample of complete information. This might lead to less precise

5 The BHPS is a secondary micro panel data, yearly conducted by the Economics and Social Research Council (ESRC), the United Kingdom Longitudinal Studies Centre (ULSC), and the Institute for Social and Economic Research (ISER) at the University of Essex (Taylor et al. 2010). This dataset surveys more than 5500 households, and interviews successively, on a yearly basis, circa 10,000 individuals aged 16 and above (Blanden et al. 2010).

6 The UKHLS is a secondary micro panel dataset, funded by the ESRC and multiple government departments and conducted by the ISER of the University of Essex, the University of Warwick, and the London School of Economics (Knies 2015). This longitudinal survey has a wider geographical coverage than the BHPS; around 40,000 household members in the whole UK on a yearly basis from 2009 until recent years. It is considered one of "the largest panel surveys in the world" (Knies 2015).

7 Please review Table 1 on the number of individual observation in each wave of the BHPS & UKHLS.

estimates and inference, as throwing away data means throwing away information and reducing efficiency in the estimation. This can cause sample-selection bias[8] in the regression especially when the retained observations are no longer representative value of the dependent variable in the regression (Cameron and Trivedi 2010 p: 46). The use of post-stratification methods; imputation and weighting procedures are intended to correct the known dissimilarities between the sample and the population, to ensure equal probability of selection and unbiasedness. However, the imputation[9] and weights calculations become complicated, unclear and very time consuming especially when attrition weights[10] are employed. As, this results in a huge decrease in the sample size due to drop-in respondents when missing from a single wave, thus providing subjective results (Gelman 2007). This is when regression modelling represents a more attractive alternative to weighting (Gelman 2007 p: 153). In our analysis we follow the norm of microeconometric studies and use only the original data available for us to work with (Cameron and Trivedi 2010 p: 47). Thus, we restrain from using the weighting methods, as we are keen on observing the highest number of panellists.

In our sample, not all workers we observe throughout the years are in their initial economic status compared to when they were first interviewed.[11] Respondents migrate differently from state to state and exhibit different transition behaviours between genders over the observed years. Many workers who are currently defined as paid employees, might have previously been self-employed. Similarly, those who are stated in self-employment might have engaged before in paid employment jobs, unemployment, retirement and inactivity and do not always continue in self-employment. Some might have switched to regular employment when alternative paid jobs became available. Others have failed and continued to search for work in the form of unemployed, or decided to retire, became inactive and dropped out from the labour force. Whilst certain business owners continue to run their own work. Not all paid employees continue to work in

8 This results in a huge decrease in the sample size, and a drop-in respondent when missing from a single wave (Gelman 2007; Kish 1990).

9 Imputation methods might impact the marginal distribution of the data, distort the covariances and correlation between variables and provide conventionally estimated standard errors and biased tests statistics (Cameron and Trivedi 2005 p: 929).

10 Not all weights are equivalent to the inverse probabilities, some are based on non-response adjustments and combinations of probability calculations. Others are not constructed on individual units, but rather on the whole survey with some sampling weight probabilities being fixed and independent of the sample (Gelman 2007 p: 155–156). This makes the standard errors of weight estimates more difficult to evaluate, and the resulted variances to be high (Gelman 2007 p: 163).

11 Please refer to Table 2 in the Supplementary Material on the transition matrices for average movement rates between years 1991 and 2014 to our working sample.

waged employment, some search for better job opportunities, others are made redundant, reach retirement and leave the labour market. Therefore, the dichotomous distinction that some are paid employees, while others are self-employed lack precision.

3.2 The New Division

We identify workers who transit between paid employment and self-employment as 'dabblers', those who are observed for an extended period in self-employment are labelled as 'sustainers', and workers who are only seen in paid employment are denoted as always paid employees. The identification of dabblers, sustainers and always employees follows specific criteria. The division is based on computing the total time respondents are observed in the sample, the frequency of observations in their current employment and non-employment status (self-employment and paid employment, unemployment and inactivity), their total employment time (total number of periods seen in paid employment and self-employment) and their proportions in self-employment and paid employment.[12] The identification excludes part-time jobs and respondents under age 16.[13] We extend the age band to cover respondents over the age of 65 in our sample (similar to Zissimooulos and Karoly's work (2004, 2007)) to account for the expansion of the ageing population in the UK labour market.

Individuals who are seen less than one-third of the time (one-third of 23 years/less than 8 waves) in the sample, around 34.8% are disregarded in the categorisation, because no solid evidence could be provided over their occupational choice history as we do not observe them for long enough in our data. Workers with more than two spells of inactivity and/or unemployment are not included in this study to not question the motives behind their choice of profession. We acknowledge from previous studies that prior experience in unemployment and economic inactivity positively affect self-employment entry (Meager 2007). But,

12 The frequency signifies the number of times workers are observed in their designated market status throughout the years in the dataset. We follow respondents for over 23 waves (wave 1–18 from the BHPS, and waves 20–24 from the UKHLS), thus the frequency of workers in self-employment can range from 0 to 23. The proportion in self-employment is calculated by dividing the total number of times individuals are noted in self-employment over their total employment times (total time we observe them in either wage employment or self-employment). Similarly, the proportion in paid employment is calculated by dividing the total number of times individuals are observed as wage earner over their total employment times.

13 Since from the age of 16, respondents can leave compulsory schooling, and are entitled to earn the national minimum wage rate in the UK (gov.uk 2014).

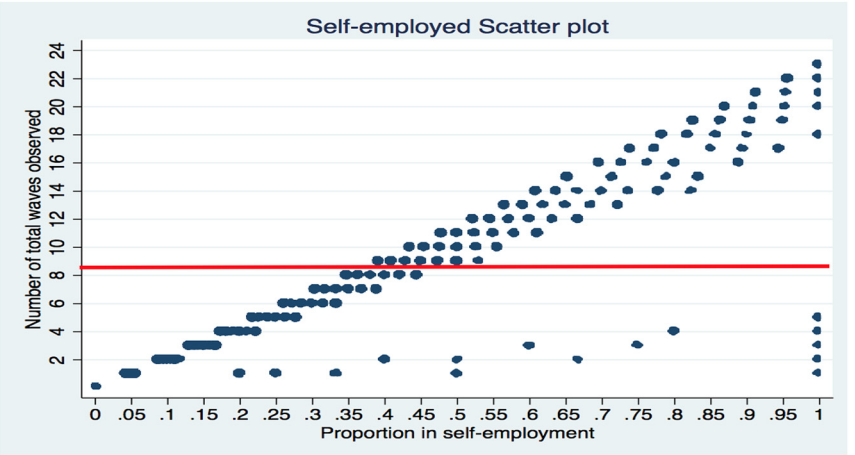

Figure 1: Self-employment scatter plot.

the long spells of both decrease the probability of entering self-employment because unemployed and/or inactive workers face higher capital constraints in the labour market and are regarded to acquire lower levels of human capital and experience (Cowling and Mitchell 1997). Finally, panellists with zero frequency and proportion in self-employment are excluded from the division of dabblers and sustainers because they do not relate with the purpose of the partition within self-employment. We only regard workers as always employees if we observe them during their total employment time only in paid employment.

Figure 1 reports the proportions of workers in self-employment and the number of waves observed throughout the study. Workers with a proportion equal to one does not necessarily mean that they are seen throughout the whole period of the study (23 years) as self-employed.[14] This issue is visually documented in the graph, on the *y*-axis, showing the total number of waves in which, we observe our respondents in the sample. This might provide a misleading interpretation of their economic status. For this reason, we choose to exclude workers who are seen less than one-third of the time in our sample, to be able to draw significant preference on workers' labour market history and preference. This is documented by the horizontal red line in Figure 1.

Figure 2 reports the frequency of respondents in unemployment and inactivity. We drop respondents with more than two spells of inactivity and/or

14 Please refer to Table 2 in the Supplementary Material on the transition matrices for average movement rates between years 1991 and 2014 to our working sample.

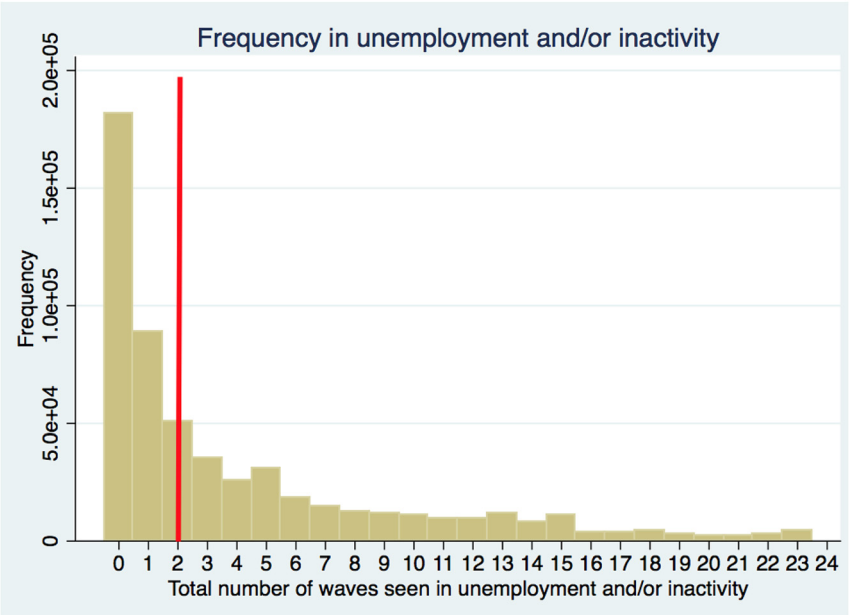

Figure 2: Histogram of total number of unemployment and inactivity.

unemployment because we do not want our division to be driven by these two statuses (shown in the red vertical line). Although we might be risking the removal of a group of vulnerable people, our aim is to compare between similar groups of workers and to have a balanced partition within self- and paid employments.

The frequency of times in self-employment and the total number of times observed in the dataset play an essential role in determining how this distinction is made, where both proportion values and frequency sums determine if labourers are identified as dabblers or sustainers. Hence, we identify dabblers as workers who are seen at least once in self-employment but less than 55% of their total employment time (total number of years spent in paid employment and self-employment), sustainers as being observed 55% or more of their total employment time in self-employment, and paid employees being seen 100% of their total employment time in paid employment only.

Figure 3 below plots the kernel density and the histogram diagram for the self-employed proportions. It represents a smoother version of the histogram, giving more weight for the data at the closest point of evaluation (Cameron and Trivedi 2010). The trend of the self-employed proportion is quite unstable. It fluctuates in a decreasing manner between 0.05 and 0.55 proportion criteria. Despite the extended decreases after the 0.55 benchmark, the trend of self-employed

proportion follows a steeper trend up until the significant jump from 0.92 level to reach a proportion equal to one. As such, we identify the 0.55 proportion as the cut-off point between the dabblers and sustainers, differentiating between intermittent and persistent workers in self-employment, and completing our division criteria and model framework in Figure 4.

The aim is to ensure that our dabblers and sustainers belong to two subgroups of self-employed, who are mutually exclusive from always employees and are not interrelated, to make a valid inference over the variations observed in their characteristics within the self-employed and between the paid employees. The sample size consists of 1146 sustainers (9.83%), 1149 dabblers (9.85%) and 9362 paid employees (80.32%). We compare our workers' characteristics with respondents in our sample that identify themselves as self-employed and paid employees, without imposing any restrictions 2 and separation criteria 3. We identify them as the amalgamated/combined or the general group of self-employed and paid workers based on respondents' own declaration of current employment status. Therefore, the sample size is larger compared to our division and consists of 2601 (14.54%) self-employed workers and 15,285 (85.46%) paid employees.

3.3 Variables

The independent explanatory variables used in the analysis are the observed socio-economic and demographic characteristics of our respondents. They are classified as follows:[15]

- Individual demographic characteristics: gender, ethnicity, country of origin (UK or non-UK), mother tongue language (English or non-English), age, health status, disability, highest educational and vocational qualifications.
- Work nature: industry levels, if self-employed employing staff members, nature of self-employment, has second paid job and work satisfaction.
- Household characteristics: marital status (married or cohabiting, and not married/cohabiting), spouse/partner's employment status (spouse/partner employed and not employed), children (have kids, if responsible for dependent children under the age of 16, and care for other household members) and housing tenure (own house outright, own with mortgage, or rent).

15 We dismiss the role of psychological factors and personality traits (e.g. Assertiveness, diversification, need for achievement, etc.) because they are not available in our dataset and are not perceived as efficient nor necessary conditions to distinguish between entrepreneurs and employees (Parker 2004). Thus, we restrain from looking at the psychological factors and only focus on the observed socio-economic and demographic characteristics of our workers in the sample.

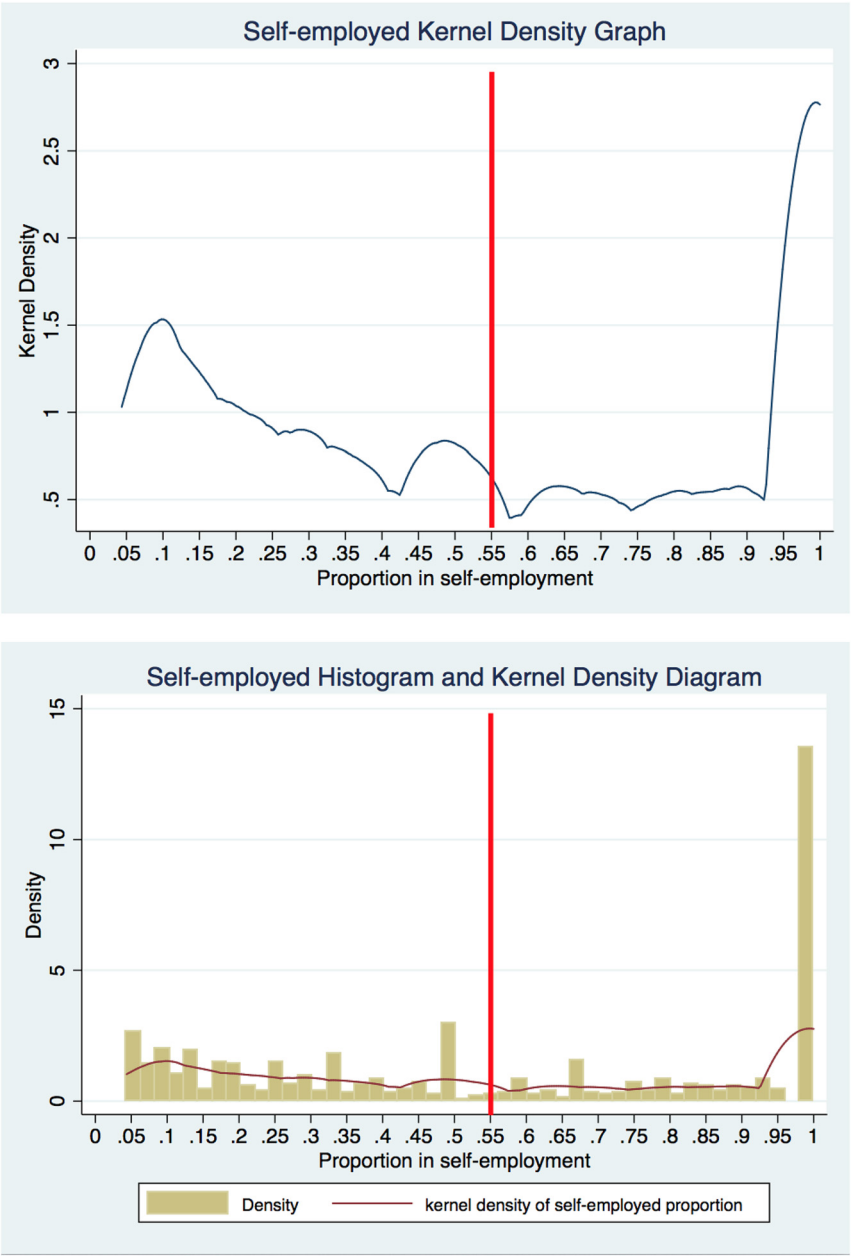

Figure 3: Kernel density and histogram diagram of self-employed proportions.

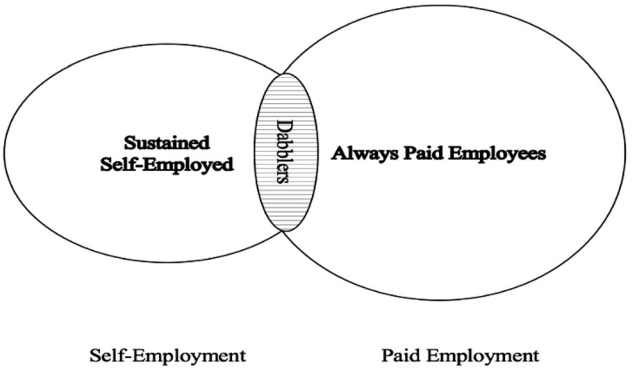

Figure 4: Model framework 1.

– Parental Background: mother and father's previous employment history and educational qualifications.

3.4 Summary Statistics

Table 1 reports the descriptive statistics for general group of workers and Table 2 for our division.[16]

Table 1: Descriptive statistics (employees and self-employed).

Variables	Employees (15,285 respondents) Percentage	Self-employed (2601 respondents) Percentage	VIF	Pearson X^2 test Self-employed versus Employees *P*-val.
Male	48.60%	75.91%	1.60	0.000
White	97.31%	97.03%	5.09	0.000
UK	95.31%	93.84%	4.97	0.000
English	84.72%	83.08%	1.36	0.000
Age				
16–24	9.98%	2.76%	1.34	0.000
25–39	40.58%	32.14%		0.000
40–49	26.63%	29.92%		0.000

16 We include the p-values of the Pearson chi-squared test to show the differences between groups with respect to each independent and report specific variables important to our interest.

Table 1: (continued)

Variables	Employees (15,285 respondents) Percentage	Self-employed (2601 respondents) Percentage	VIF	Pearson X^2 test Self-employed versus Employees *P*-val.
50–64	21.50%	31.51%		0.000
65+	1.31%	3.67%		0.000
Health status				
Good	76.88%	79.24%	1.16	0.232
Fair	17.94%	16.65%		0.058
Poor	4.96%	3.99%		0.003
Disable	4.75%	3.90%	1.03	0.000
Educational qualifications				
Higher degree	45.26%	43.09%	4.25	0.000
A-levels	12.09%	12.28%		0.952
GCSEs	20.37%	19.61%		0.088
Other qualifications	8.04%	8.82%		0.072
None	13.38%	15.88%		0.000
Vocational qualifications	42.21%	43.24%	1.62	0.004
Industry levels				
High skilled	33.03%	43.73%	1.10	0.000
Medium skilled	36.81%	33.01%		0.000
Low skilled	22.73%	14.86%		0.000
Second paid job	27.79%	9.58%	6.35	0.000
Work satisfaction				
dissatisfied	10.52%	6.68%	2.15	0.000
neither	7.49%	5.92%		0.000
satisfied	81.99%	87.18%		0.447
Total waves in unemployment and/or inactivity				
0	49.12%	57.85%	1.17	0.000
1	14.27%	11.67%		0.000
2	7.98%	6.72%		0.000
3–8	19.27%	14.49%		0.000
8+	9.36%	9.26%		0.197
Married/Cohabitating	74.77%	82.29%	2.18	0.000
Spouse/Partner employed	62.99%	61.30%	1.76	0.000
Has children	38.90%	41.13%	2.26	0.000
Responsible for dependent child under age of 16	20.70%	11.25%	2.56	0.366
Care for other household members	3.62%	3.56%	1.76	0.000

Table 1: (continued)

Variables	Employees (15,285 respondents) Percentage	Self-employed (2601 respondents) Percentage	VIF	Pearson X^2 test Self-employed versus Employees *P*-val.
Housing tenure				
Own house outright	14.74%	24.83%	1.35	0.000
Own house mortgage	65.48%	60.82%		0.000
Rent	19.47%	14.01%		0.000
Father previously self-employed	13.48%	24.77%	1.38	0.00
Mother previously self-employed	3.83%	7.25%	1.15	0.00

4 Analysis

4.1 The Multinomial Logit Model

We implement the Multinomial Logit Model to explore the propensity of characteristics, and the variations accredited for each worker. The multinomial data arises from 'individual's revealed preference choice, based on actual decisions and real observed outcomes (Cameron and Trivedi 2005). The outcome in this model arises from unordered individuals' choices, therefore an additive random-utility model (ARUM) is documented.

$$U_{ij} = V_{ij} + \epsilon_{ij}. \tag{1}$$

The Additive Random Utility Model assumes that the choice j, made by workers i yields the maximum utility U_{ij} among k utilities. Hence the following statistical model is driven by the following probability:

$$\Pr(y_i = j) = \Pr(U_{ij} \geq U_{ik}) \text{ for all } k.x_i \tag{2}$$

The probability that outcome for individual i is equal to alternative j, conditional on x_i regressors is:

$$p_{ij} = \Pr(y_i = j) = F_j(x_i, \theta), \ \ j = 1, \ldots, m, \ \ i = 1, \ldots, N.E\left[y_{ij}\right] = p_{ij} \tag{3}$$

Table 2: Descriptive statistics (division).

Variables	Sustained self-employed (1146 respondents) Percentages	Dabbled self-employed (1149 respondents) Percentages	Always employees (9362 respondents) Percentages	VIF	Pearson X^2 test		
					Sustainers versus Dabblers *P*-val.	Sustainers versus Employees *P*-val.	Dabblers versus Employees *P*-val.
Individual characteristics							
Male	80.83%	68.45%	51.04%	1.04	0.000	0.000	0.000
White	96.75%	97.23%	97.81%	1.12	0.000	0.000	0.461
UK	93.82%	94.49%	95.83%	1.01	0.281	0.000	0.000
English	78.78%	90.28%	79.86%	1.36	0.000	0.045	0.000
Age							
16–24	2.94%	8.17%	10.76%	1.34	0.000	0.000	0.000
25–39	35.35%	47.94%	10.76%		0.000	0.000	0.000
40–49	32.00%	29.82%	45.09%		0.365	0.000	0.000
50–64	27.30%	13.68%	28.34%		0.000	0.000	0.467
65+	2.41%	0.38%	15.24%		0.000	0.000	0.214
Health status							
Good	80.64%	79.98%	78.78%	1.16	0.000	0.000	0.000
Fair	15.50%	16.43%	16.66%		0.000	0.002	0.000
Poor	3.79%	3.50%	4.46%		0.000	0.854	0.000
Disable	3.16%	3.93%	4.44%	1.08	0.000	0.000	0.000
Educational qualifications							
Higher degree	42.61%	52.57%	45.97%	5.25	0.000	0.700	0.001

Table 2: (continued)

Variables	Sustained self-employed (1146 respondents) Percentages	Dabbled self-employed (1149 respondents) Percentages	Always employees (9362 respondents) Percentages	VIF	Pearson X^2 test		
					Sustainers versus Dabblers *P*-val.	Sustainers versus Employees *P*-val.	Dabblers versus Employees *P*-val.
A-levels	13.28%	12.54%	12.82%		0.000	0.008	0.001
GCSEs	19.66%	17.55%	21.51%		0.000	0.387	0.001
Other qualifications	9.08%	7.57%	7.73%		0.000	0.000	0.001
None	15.21%	9.16%	11.06%		0.004	0.000	0.001
Vocational qualifications	44.07%	44.01%	44.28%	1.67	0.000	0.008	0.001
Industry levels							
High skilled	42.51%	44.30%	32.99%	1.31	0.000	0.000	0.001
Medium skilled	32.51%	32.67%	36.49%		0.000	0.339	0.001
Low skilled	15.37%	18.06%	21.40%		0.000	0.000	0.001
Employ staff	30.45%	4.06%	0.00%	20.10	0.000	0.000	0.001
Second paid job	10.82%	12.91%	7.90%	6.69	0.000	0.000	0.001
Work satisfaction							
Dissatisfied	6.72%	10.18%	10.39%	1.75	0.000	0.000	0.001
Neither	5.52%	7.65%	7.49%		0.000	0.000	0.001
Satisfied	87.65%	82.07%	82.05%		0.000	0.000	0.001
Married/Cohabiting	81.45%	79.54%	74.73%	1.73	0.000	0.000	0.000
Spouse/Partner employed	61.85%	65.82%	64.79%	1.72	0.000	0.000	0.000
Has children	43.49%	47.83%	40.93%	1.22	0.000	0.000	0.000

Table 2: (continued)

Variables	Sustained self-employed (1146 respondents) Percentages	Dabbled self-employed (1149 respondents) Percentages	Always employees (9362 respondents) Percentages	VIF	Pearson X^2 test		
					Sustainers versus Dabblers *P*-val.	Sustainers versus Employees *P*-val.	Dabblers versus Employees *P*-val.
Responsible for dependent child under age of 16	8.91%	15.93%	20.24%	1.09	0.000	0.677	0.000
Care for other household members	3.03%	2.47%	3.22%	1.84	0.000	0.000	0.000
Housing tenure							
Own house outright	23.04%	10.60%	11.57%	1.35	0.000	0.000	0.000
Own house mortgage	62.65%	74.90%	69.62%		0.000	0.000	0.000
Rent	13.95%	14.28%	18.48%		0.000	0.000	0.000
Father previously self-employed	26.68%	18.20%	13.33%	1.22	0.000	0.000	0.000
Mother previously self-employed	7.28%	6.55%	3.56%	1.11	0.000	0.000	0.001

Thus, the MNLM for occupation choice (e.g. Schmidt and Straus 1975) is:

$$\text{Prob}\,(Y_i = j|x_i) = p_{ij} = \frac{\exp\,(x'i\beta j)}{\sum_{l=1}^{m} \exp\,(x'i\beta j)},\ j = 1,\ldots m, i = 1,\ldots N. \sum_{j=1}^{m} pij\beta j \qquad (4)$$

We compute the propensity of characterises for each worker. We are interested in examining the impact of individuals observed socio-economic and demographic characteristics, work nature, households' characteristics and parental background on the probability of selection into the three distinct divisions established in this study (the sustainers, dabblers and always employees).

To check the adequacy of the model, we apply the Wald test for individual coefficients significance. To test for the Independence of Irrelevant Alternatives assumption (IIA) The Independence of Irrelevant Alternatives assumption (IIA) problem arises when the probability of choosing between two existing alternatives is not affected by the presence of an additional third alternative (Kennedy 2008). This means that the probabilities do not depend on the available alternative outcomes when adding or deleting any category and the odds are not affected between the remaining choices (Cameron and Trivedi 2010; Greene 2012; Long and Freese 2014). we apply the Hausman and McFadden (1984) (HM) by dropping out a subset of choices from the model and checking if the omission is irrelevant when the new estimated parameters do not systematically change (Kennedy 2008). If the coefficient values of Hausman and McFadden's (HM) test are significant, the IIA assumption is violated and the MNLM is no longer appropriate because the parameters estimated from the excluded choices are inefficient and inconsistent (Greene 2012; Long and Freese 2014). The Small Hsiao (SH) test by Small and Hsaio (1985) is also considered to test the IIA problem and divides the sample into two random subsamples of equal size.[17] It tests the difference in coefficients from the unrestricted model of both subsamples, with the weighted average of coefficients computed and compared with the coefficients of the restricted model. The second subsample is only employed, when all cases from a chosen value of the dependent variable are eliminated (Long and Freese 2014).

17 Sometimes, running both tests can provide conflicting results on whether the IIA has been violated or not. Thus, the MNLM would only work well when the alternatives are not similar to one another (Amemiya 1981). Based on our theoretical argument and division reasoning we argue that we have three groups of workers that are distinct and relatively different from one another with respect to their observed socio-economic and demographic characteristics. Thus we expect the IIA to hold, as the probability of being sustained self-employed to being an always employee is unlikely to be affected by the existence of the third option of being a dabbler.

4.2 The Predicted Probabilities

To examine the fit of the MNLM, we interpret Predicted Probabilities (PR),[18] computed by the following formula:

$$\widehat{\Pr} = (y = m|x) = \frac{\exp\left(x\widehat{\beta}_{m/J}\right)}{\exp\left(x\widehat{\beta}_{J/J}\right)}. \tag{5}$$

4.3 The Marginal Effects

We do not base the analysis on the coefficient interpretation because the sign and size do not indicate the direct relationship of interest (Greene 2003).[19] We use the Marginal Effect method to interpret the result, as it is considered a much more powerful interpretive device (Wulff 2014).[20] The ME method measures the probabilities of m alternatives on the overall and final assessment of the impact of each variable on the observed outcome (Cameron and Trivedi 2010; Long and Freese 2014). It provides an estimate for the change in the observed outcome due to a change in one independent variable, holding other regressors constant (Long and Freese 2014). Where $\overline{\beta_i} = \sum_l p_{il}\beta_l$ is the probability weighted average of β_l. These estimates vary with the point of evaluation x_i, because p_{ij} varies with x_i and do not necessarily have the same sign as the coefficients βj. They measure the magnitude of responses to changes in characteristics, and all sum up to zero, as the probabilities sum up to one (Cameron and Trivedi 2010).[21]

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18 Even after predicting the probabilities, the MNLM is nonlinear with the results. Therefore, no relevant approach can exactly define the relationship between the independent variables and the calculated outcome probabilities (Long and Freese 2014).

19 The interpretation of a single coefficient is based on the contrast of only two categories, indicating how the predictor relates to the probability of observing one category relative to the base category, thus leading to invalid inference and creating uncertainty in the results of the empirical work (Cameron and Trivedi 2005).

20 It provides us with valid conclusion on the magnitude and the exact direction of the relationship between the independent variables and the observed outcomes (Bowen and Wiersema 2004).

21 The marginal effect for a variable for three groups (our groups of sustainers, dabblers and always employees) should be equal to zero. This means that if a covariate increases the probability of sustained self-employed by X percentage points and also the dabbled self-employed by Y

We rely on the interpretation of the average marginal effect estimates for our regressors in the model. Robust standard errors are adopted to compensate any false inflation of explanatory coefficients caused by the panel data structure.

For individual *i*, the MEs of a change in the *k*th regressors on the probability that alternative *j* is chosen is:

$$\mathrm{ME}_{ijk} = \frac{\partial \Pr(y = j|x)}{\partial xk} = \frac{\partial pij}{\partial xi} = p_{ij}(\beta_j - \overline{\beta_i}). \tag{6}$$

4.4 Findings

Table 3 reports the findings of the marginal effects estimates for our main division, after running the MNLM in the panel data structure, and Table 4 reports the logit marginal effect estimates for the general group of self-employed and paid workers. The model fit is of a reasonable fit for our division of workers with pseudo-R2 equal to 0.194, all regressors are jointly significant at 5% significance level with LR chi2 (92) equal to 14,869.79, with the probability of chi2 equal to 0, rejecting the null hypothesis of joint insignificance. This is also the case in Table 4 for the general group of workers, with pseudo-R2 equal to 0.223, all regressors are jointly significant at 5% significance level with LR chi2 (50) equal to 12,744.94, with the probability of chi2 equal to 0.

4.5 Individual Characteristics

4.5.1 Gender

The variable gender is highly significant at 99.99% confidence level for all three subdivisions of workers. The percentage point probability for male workers in reference to women is higher for both subgroups of self-employed and negative for the always employees. The results are similar to the general group of self-employed and paid workers in Table 4. In reference to women, men are 9.0 percentage point more likely to be sustained self-employed, and 7.5 percentage point more likely to be dabbled self-employed. Whereas, for the always employees, female workers have a higher percentage probability point than male workers by 16.5 percentage

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percentage points, then the covariate must reduce the probability of always employees by $X + Y$ percentage points.

Table 3: Multinomial logit model marginal effect estimates.

Variables	Sustained self-employed (1146 respondents)			Dabbled self-employed (1149 respondents)			Always employees (9362 respondents)		
	Marginal effect	Standard errors	*P*-values	Marginal effect	Standard errors	*P*-values	Marginal effect	Standard errors	*P*-values
Individual characteristics									
Male *(reference to female)*	0.090	0.002	0.000	0.075	0.003	0.000	−0.165	0.003	0.000
Non-white *(reference to white)*	−0.009	0.006	0.111	−0.021	0.008	0.000	0.029	0.009	0.028
UK born *(reference to non-UK born)*	−0.006	0.005	0.183	0.045	0.006	0.000	−0.039	0.007	0.000
English language *(reference to non-English)*	−0.082	0.007	0.000	0.055	0.006	0.000	0.027	0.008	0.001
Age groups *(reference to 40–49)*									
16–24	−0.078	0.003	0.000	−0.012	0.005	0.012	0.090	0.005	0.000
25–39	−0.033	0.002	0.000	0.006	0.003	0.026	0.027	0.003	0.000
60–64	0.036	0.003	0.000	−0.009	0.003	0.005	−0.026	0.004	0.000
65+	0.122	0.010	0.000	−0.032	0.009	0.000	−0.089	0.012	0.000
Health status *(reference to fair)*									
Good	0.005	0.002	0.032	0.001	0.003	0.821	−0.006	0.004	0.095
Poor	0.001	0.004	0.882	−0.011	0.005	0.035	0.011	0.006	0.091
Disable *(reference to not disabled)*	−0.008	0.004	0.028	−0.011	0.005	0.021	0.019	0.005	0.001
Highest educational qualifications *(reference to none)*									
Higher degree	−0.044	0.004	0.000	0.034	0.005	0.022	0.010	0.005	0.000
A-levels	−0.016	0.005	0.000	0.010	0.005	0.252	0.006	0.006	0.090
GCSEs	−0.013	0.004	0.002	−0.008	0.005	0.079	0.021	0.006	0.000
Other qualifications	−0.008	0.005	0.111	0.011	0.006	0.064	−0.003	0.007	0.703
Vocational qualifications *(reference to none)*	0.002	0.002	0.347	−0.003	0.003	0.184	0.001	0.003	0.680

Table 3: (continued)

Variables	Sustained self-employed (1146 respondents)			Dabbled self-employed (1149 respondents)			Always employees (9362 respondents)		
	Marginal effect	Standard errors	*P*-values	Marginal effect	Standard errors	*P*-values	Marginal effect	Standard errors	*P*-values
Work nature									
Industry levels *(reference to medium skilled)*									
High skilled	0.018	0.002	0.000	0.031	0.003	0.000	−0.049	0.003	0.000
Low skilled	−0.035	0.002	0.000	−0.006	0.003	0.039	0.042	0.004	0.000
Second paid jobs *(reference to none)*	0.030	0.003	0.000	0.080	0.004	0.000	−0.110	0.005	0.000
Job satisfaction *(reference to Not satisfied)*									
Satisfied	0.035	0.003	0.000	0.003	0.004	0.456	−0.037	0.004	0.000
Neither	0.086	0.005	0.000	0.003	0.005	0.617	−0.009	0.006	0.120
Household characteristics									
Married/Cohabitating *(reference to not married nor cohabiting)*	−0.007	0.021	0.740	−0.045	0.030	0.127	0.052	0.031	0.094
Spouse/Partner employed *(reference to not working)*	−0.074	0.004	0.000	−0.040	0.004	0.000	0.114	0.005	0.000
Has children *(reference to no children)*	0.008	0.002	0.001	0.007	0.003	0.026	−0.015	0.004	0.000
Responsible for dependent child under age of 16 *(reference to not)*	0.012	0.004	0.004	0.011	0.005	0.014	−0.024	0.005	0.000
Care for other household members *(reference to not)*	−0.031	0.004	0.000	−0.026	0.006	0.000	0.058	0.006	0.000
House tenure *(reference to rent)*									
Owned outright	0.050	0.003	0.000	0.011	0.004	0.006	−0.061	0.005	0.000
Owned with mortgage	0.007	0.002	0.005	0.023	0.003	0.000	−0.030	0.004	0.000
Parents background									

Table 3: (continued)

Variables	Sustained self-employed (1146 respondents)			Dabbled self-employed (1149 respondents)			Always employees (9362 respondents)		
	Marginal effect	Standard errors	*P*-values	Marginal effect	Standard errors	*P*-values	Marginal effect	Standard errors	*P*-values
Father self-employed *(reference to employee)*	0.073	0.003	0.000	0.019	0.003	0.000	−0.092	0.004	0.000
Mother self-employed *(reference to employee)*	0.036	0.005	0.000	0.053	0.006	0.000	−0.089	0.007	0.000
Number of observation = 107,360									
LR chi2(92) = 14,869.79									
Prob > chi2 = 0.0000									
Pseudo R2 = 0.1937									
Log likelihood = −71,903.869									

Table 4: Logit model marginal effect estimates.

Variables	Self-employed (2601 respondents)			Paid employees (15,285 respondents)		
	Marginal effect	Standard errors	*P*-values	Marginal effect	Standard errors	*P*-values
Individual characteristics						
Male *(reference to female)*	0.094	0.002	0.000	−0.094	0.002	0.000
Non-white *(reference to white)*	−0.011	0.005	0.030	0.011	0.005	0.030
UK born *(reference to non-UK born)*	−0.018	0.004	0.000	0.018	0.004	0.000
English language *(reference to non-English)*	−0.033	0.005	0.000	0.033	0.005	0.000
Age groups *(reference to 40–49)*						
16–24	−0.079	0.003	0.000	0.079	0.003	0.000
25–39	−0.027	0.002	0.000	0.027	0.002	0.000
60–64	0.024	0.003	0.000	−0.024	0.003	0.000
65+	0.056	0.007	0.000	−0.056	0.007	0.000
Health status *(reference to fair)*						
Good	0.004	0.002	0.084	−0.004	0.002	0.084
Poor	−0.001	0.004	0.735	0.001	0.004	0.735
Disable *(reference to not disabled)*	−0.001	0.003	0.674	0.001	0.003	0.674
Highest educational qualifications *(reference to none)*						
Higher degree	−0.030	0.003	0.000	0.030	0.003	0.000
A-levels	−0.008	0.004	0.037	0.008	0.004	0.037
GCSEs	−0.002	0.003	0.614	0.002	0.003	0.614
Other qualifications	0.003	0.004	0.434	−0.003	0.004	0.434
Vocational qualifications *(reference to none)*	0.003	0.002	0.129	−0.003	0.002	0.129
Work nature						
Industry levels *(reference to medium skilled)*						
High skilled	0.023	0.002	0.000	−0.023	0.002	0.000
Low skilled	−0.036	0.002	0.000	0.036	0.002	0.000

Table 4: (continued)

Variables	Self-employed (2601 respondents)			Paid employees (15,285 respondents)		
	Marginal effect	Standard errors	*P*-values	Marginal effect	Standard errors	*P*-values
Second paid jobs *(reference to none)*	0.029	0.003	0.000	−0.029	0.003	0.000
Job satisfaction *(reference to Not satisfied)*						
Satisfied	0.035	0.002	0.002	−0.035	0.002	0.002
Neither	0.011	0.003	0.000	−0.011	0.003	0.000
Total unemployment and Inactivity spells *(reference to 2 spells)*						
0	0.002	0.003	0.464	−0.002	0.003	0.464
1	−0.006	0.004	0.074	0.006	0.004	0.074
3–8	−0.019	0.003	0.000	0.019	0.003	0.000
8+	−0.018	0.004	0.000	0.018	0.004	0.000
Household characteristics						
Married/Cohabiting *(reference to not married nor cohabiting)*	−0.022	0.019	0.243	0.022	0.019	0.243
Spouse/Partner employed *(reference to not working)*	−0.119	0.005	0.000	0.119	0.005	0.000
Has children *(reference to no children)*	0.005	0.002	0.041	−0.005	0.002	0.041
Responsible for dependent child under age of 16 *(reference to not)*	0.033	0.004	0.000	−0.033	0.004	0.000
Care for other household members *(reference to not)*	−0.028	0.003	0.000	0.028	0.003	0.000
House tenure *(reference to rent)*						
Owned outright	0.042	0.003	0.000	−0.042	0.003	0.000
Owned with mortgage	0.011	0.002	0.000	−0.011	0.002	0.000
Parents background						
Father self-employed *(reference to employee)*	0.059	0.003	0.000	−0.059	0.003	0.000
Mother self-employed *(reference to employee)*	0.038	0.004	0.000	−0.038	0.004	0.000
Number of observation = 149,632						
LR chi2(50) = 12,744.94						
Prob > chi2 = 0.0000						
Pseudo R2 = 0.2233						
Log likelihood = −45,298.262						

point. Similarly, in reference to women, men are 9.4 percentage point more likely to be self-employed than employee.

4.5.2 Ethnicity, Country of Birth and Language

Ethnicity does not appear to play a significant role in predicting the belonging for the sustained self-employed (statically insignificant) but is highly significant for the dabblers and the always employees. Non-white in reference to white ethnic backgrounds have a higher percentage probability to be observed as always employees (by 2.9 percentage point), and negatively as dabbled self-employed (by –2.1 percentage point). This is also the case for the general group of paid workers (by 1.1. percentage point and significant at 5% significance level).

UK born in reference to non-UK born are less likely to be observed as sustained self-employed (by –0.6 percentage point as sustained self-employed significant at 99.99% confidence level) and as always employees (–3.9 percentage point). this is also the case for the general group of self-employed (–1.8 percentage point). The opposite is shown for the dabbled self-employed (4.5 percentage point more likely to be observed as dabblers), similar to the positive effect shown in Table 4 for the general group of paid workers. Workers who consider English as their first language in reference to non-English language significantly decrease the probability of being observed as sustained self-employed (by –8.2 percentage point), similar to the general group of self-employed (by –3.33 percentage point). The opposite effect is shown for the always employees (increase in probability by 2.7 percentage point) and more predominantly for the dabbled self-employed (increase in probability by 5.5 percentage point), similar to the general group of paid workers. Our results only confirm for sustainers and not for dabblers but are significant for the general group of self-employed and paid workers.

4.6 Age

In reference to the age band between 40 and 49, the younger generation of workers, 16–24, have significantly lower marginal probabilities to be observed in both subdivisions of self-employment (by –7.8 percentage point for sustainers and –1.2 percentage point for dabblers), but are significantly more likely to be observed in paid employment (by 9 percentage point). This is also the case for the general group of self-employed (by –7.9 percentage point). Those between the age of 25 and 39 are significantly more likely to be observed as paid employees (by 2.7 percentage point), and as dabbled self-employed (by 0.6 percentage point). The effect is significantly negative for workers from older age groups between the age of

50–64 and 65 and over. As for the sustained self-employed, they are significantly more likely to be from older age groups (3.6 percentage point more likely to be aged 60–64 in comparison to 40 and 49, and 12.22 percentage point more for those aged 65 and over, all significant at 1% significance level), similar to the case of general group of self-employed (by 2.4 and 5.6 percentage point, respectively and significantly).

4.6.1 Health Status and Disability

Information on health status shows that both subgroups of self-employed have higher probability in reporting good health status compared to fair. The effect is negative for the always employees, but insignificant. This is also the case for workers who consider themselves, or are registered as, disabled in reference to not, where the results show significantly negative probability for both subgroups of self-employed (by –0.8 percentage point for sustainers, and –1.1 percentage point for dabblers) and positive values for the always employees (by 1.9 percentage point). Similar results are also shown for our general group of self-employed, but insignificant for paid workers.

4.6.2 Qualifications

Workers with a higher degree compared to none have a significant positive marginal probability for the dabbled self-employed (3.4 percentage point, significant at 1% significance level) and higher than the always employees (1 percentage point). The results are similar for A-levels, but insignificant. GCSE levels compared to none are negative for the dabbled self-employed (–0.8 percentage point, but insignificant), but significantly positive for the always employees (2.1 percentage point). Whereas, for other qualifications, the marginal probabilities are insignificant between the two compared groups, but still show positive marginal probabilities for the dabbled self-employed (1.1 percentage point) and negative (–0.3 percentage point) for the always employees, both insignificant. As for the sustained self-employed, the results go in different directions, with all negative significant marginal probability values for all educational levels in comparison to none (only insignificant in correspondence to other qualifications), similar to the case of general self-employed in Table 4. Also, workers with vocational qualifications compared to none do not have any significant impact on all our workers. This is also the case for our general group of workers.

4.7 Work Nature

4.7.1 Industry Level

In reference to medium skilled industry, both subgroups of self-employed have positive marginal probability in being in highly skilled industry, but with dabblers higher than sustainers (3.1 compared to 1.8 significant percentage point, respectively), and significant negative estimates for low skilled industries (–3.5 percentage point for sustainers and –0.6 percentage point for dabblers). On the other hand, the marginal effect estimates are significantly negative for the highly skilled industries in reference to medium skilled industries for the always employees (–4.9 percentage point) but are positive for the low skilled ones (4.2 percentage point). This is also the case for our general group of workers, where the self-employed in general report positive significant values (by 2.3 percentage point) for being in highly skilled industries and negative ones (by –3,6 percentage point) in the low skilled, opposite to the general group of paid workers.

4.7.2 Second Work

Workers with secondary paid work compared to none have significant positive marginal probabilities for both subgroups of self-employed but higher for the dabbled self-employed (8 percentage point) compared to the sustained self-employed (3 percentage point) and for the general group of self-employed (2.9 percentage point). Whereas, the percentage point values are significantly negative for the always employees (–11 percentage point) and general group of paid workers.

4.7.3 Job Satisfaction

Looking at workers' job satisfaction, and comparing to not being satisfied, the two groups of self-employed report positive marginal probability on satisfaction, but sustainers are significantly higher than dabblers (3.5 percentage point compared to 0.3 percentage point). Whereas the always employees have negative marginal probability on the job satisfaction (–3.7 percentage point). This is also the case in Table 4 for our general definition of workers.

4.8 Household Characteristics

4.8.1 Marriage/Cohabiting and Partner Employability

Being married or cohabiting with a partner in reference to not has a negative marginal probability for both subgroups of self-employed (–0.7 percentage point for sustained self-employed, and –4.5 percentage point for dabbled self-employed) and for the general group of self-employed (–2,2 percentage point). Whereas, for the always employees there is higher probability for married or cohabiting workers (5.2 percentage point), but the results are insignificant. This is also demonstrated in regard to spouse or partner employment in reference to not being employed; as such the probabilities are significantly negative for sustainers and dabblers (–7.4 percentage point for sustained self-employed, and –4 percentage point for dabbled self-employed) and for the general group pf self-employed (–11.9 percentage point), and positive for the always employees (11.4 percentage point).

4.8.2 Children, Responsibilities, and Dependent Care

Respondents with children and responsible for a dependent child under the age of 16 in reference to none increase significantly the probability to be observed in both subgroups of self-employed (1.2 percentage point for sustained self-employed, and 1.1 percentage point for dabbled self-employed), as well for the general group of self-employed (0.5 percentage point), but oppositely for the always employees (–2.4 percentage point, significant at 1% significance level).

As for respondents who care for other household members, in reference to not, the results show positive significant marginal probability for the always employees (5.8 percentage point, significant at 1% significance level) and negative for sustainers (–3.1 percentage point) and dabblers (–2.6 percentage point), similar to the results of the general group of workers.

4.9 House Ownership

Workers who own their home in reference to those who rent are significantly more likely to be observed in self-employment as opposed to paid employment (significant negative marginal probability in both owning outright, –6.1 percentage point and by mortgage, –0.9 percentage point for the always employees). However, the sustained self-employed have a higher positive marginal probability in owning their homes outright than dabbled self-employed (3.5 percentage point compared to 0.3 percentage point, significant respectively), and these latter are

significantly higher in owning with mortgages (2.3 percentage point for dabblers compared to 0.7 percentage point for sustainers). This also the case in Table 4 for the general group of workers.

4.9.1 Parental Background

Parental occupation indicates that those with fathers who were previously self-employed in reference to being paid workers have a significant positive marginal probability for both self-employed subcategories, with sustainers higher than dabblers by 5.4 percentage point, and negative for the always employees (–9.2 percentage point). A similar case is also shown for mothers who were previously self-employed, but with dabblers having significant higher marginal probability than sustainers by 1.7 percentage point, whereas still negative for the always employees (–8.9 percentage point). In both cases, we see the general self-employed to have higher percentage point probability in having parents previously self-employed, whereas the results are negative for paid workers.

4.9.2 Specification Tests

Table 5 below includes all specification tests used for the analysis of our division.[22] The results of the Wald test for combining alternatives show significant results that all alternatives are mutually exclusive from one another with Chi2 probabilities equal to 0.000. Hence this justifies that we are examining the characteristics of three exclusive groups of workers.

The results of the Hausman and the Small Hsaio test for the IIA assumption report insignificant coefficient values for the three groups of workers.[23] This

22 The Wald test specification for the significance of the independent variables used in the specification model shows the significance for most of the independent variables used in the analysis, except for the good health status, other educational qualifications, vocational qualification, job satisfaction, and the marriage and cohabiting variable, all reporting insignificant values in the Chi2 probabilities.

23 (Sustained self-employed; Hausman test Chi2 probability equal to 0.99, and Small Hsaio test Chi2 probability equal to 0.233, dabbled self-employed; Hausman test Chi2 probability equal to 0.082, and Small Hsaio test Chi2 probability equal to 0.082 and for the always employees; Hausman test Chi2 probability equal to 0.067, and Small Hsaio test Chi2 probability equal to 0.061). This means that the parameters do not systematically change if we drop any subset of choices from the model and the IIA assumption is not violated. Thus, being a sustained self-employed relative to being an always employee is unlikely to be affected by the existence of the third option of being a dabbler.

Table 5: Diagnostic tests.

Wald test significance for independent variables Division 1			
Variables	Chi2	df	*P* > chi2
Male	2486.218	2	0
Non-white	14.751	2	0.001
UK born	50.888	2	0
English language	239.941	2	0
Age 16–24	469.472	2	0
Age 25–39	226.805	2	0
Age 60–64	124.42	2	0
Age 65+	226.936	2	0
Health status good	4.867	2	0.088
Health status poor	4.352	2	0.113
Disabled	11.442	2	0.003
Higher degree	159.126	2	0
A-levels	13.052	2	0.001
GCSEs	16.227	2	0
Other qualifications	4.856	2	0.088
No vocational qualifications	2.265	2	0.322
Industry high skilled	209.507	2	0
Industry low skilled	229.64	2	0
Second paid job	591.434	2	0
Job satisfaction satisfied	3.69	2	0.158
Job satisfaction neither	133.611	2	0
Married/Cohabiting	3.167	2	0.205
Spouse/Partner employed	928.438	2	0
Has children	19.989	2	0
Children under age of 16	19.565	2	0
Care for others	80.009	2	0
House owned outright	242.292	2	0
House owned with mortgage	73.527	2	0
Father self-employed	929.173	2	0
Mother self-employed	194.234	2	0
Wald tests for combining alternative Division 1			
Alternatives	Chi2	df	*P* > chi2
Sustained and dabbled self-employed	3576.037	46	0
Sustained self-employed and always employees	8763.851	46	0
Dabbled self-employed and always employees	4939.956	46	0
IIA tests for Division 1			
Hausman test			
Alternatives	Chi2	df	*P* > chi2
Sustained self-employed	2.017	1	0.999

Table 5: (continued)

Wald test significance for independent variables Division 1					
Dabbled self-employed	61.017	47	0.082		
Always employees	19.804	5	0.067		
Small Hsaio test					
Alternatives	lnL(full)	lnL(omit)	Chi2	df	*P* > chi2
Sustained self-employed	−2.06E+04	−2.06E+04	53.686	47	0.233
Dabbled self-employed	−1.42E+04	−1.41E+04	61.064	47	0.082
Always employees	−8211.017	−8169.672	82.69	46	0.061
Predicted probabilities for Division 1					
Variables	Observations	Mean	Std. Dev	Min	Max
Predicted probabilities for sustained self-employed	266,448	0.1638296	0.1683522	0.0009479	0.9684899
Predicted probabilities for dabbled self-employed	266,448	0.1425568	0.0653842	8.63E−08	0.625577
Predicted probabilities for always employees	266,448	0.6936136	0.1817823	0.0306381	0.9864573
Sustained self-employed	248,479	0.0996261	0.2995015	0	1
Dabbled self-employed	248,479	0.1002539	0.3003389	0	1
Always employees	248,479	0.8001199	0.3999108	0	1

confirms that the MNLM is the appropriate model to use in the analysis and with our initial division reasoning. We have three groups of distinct workers; the sustained self-employed, the dabbled self-employed and the always employees in the labour market, who are different from each other with respect to their observed socio-economic and demographic characteristics.

4.9.3 Predicted Probabilities

The MNLM sample average predicted probabilities in Table 5 are not equal to the observed sample frequencies, and there is considerably more variation in the predicted probabilities for each alternative with the mean and the standard deviations.[24] Still, the results show that the model prediction is of good measure considering the computed average predicted probabilities along with the associated confidence interval are closely aligned with the observed sample figures.

24 The predicted probability for the sustained self-employed mean is less by 0.006 points than the observed sample mean of sustainers and ranges from minimum of 0 to maximum 1. The dabbled self-employed are less by 0.042 points in their mean values and the predicted probabilities for the always employee are higher by 0.106 points in comparison to its mean.

5 Discussion

This study sets out the criteria for division of individuals into self-employed sustainers, self-employed dabblers and paid employees, and explains attentively how the division criteria is identified and the rationale behind it. In this paper, we explore the socio-economic and demographic characteristics and look at the propensity of characteristics for the 'amalgamated' group of self-employed and paid employees, without considering any heterogeneity within or among these group of workers in our data, and then compare the findings with our own division. We use the Multinomial Logit Model to identify the respective socio-economic and demographic characteristics for self-employed sustainers, self-employed dabblers and paid employees, to check which group of workers have more aligned attributes to self-employment and paid employment, and we test four sets of hypotheses.

In hypothesis 1, we argue that dabblers are different from self-employed sustainers with respect to their observed socio-economic and demographic characteristics, because they do not engage for long in self-employment. In hypothesis 2, we align dabblers to paid workers with respect to their observed attributes, but stress on their disadvantages more, as they are unable to endure long nor secure paid work. Hypothesis 3 stresses that self-employed sustainers are different from paid workers with respect to their socio-economic and demographic characteristics and hypothesis 4 claims that sustainers are more advantaged than dabblers with respect to their embedment in self-employment, social status wellbeing, along with skills levels and qualifications, as such they a more entrepreneurial oriented.

Our findings reject partially hypotheses 1 and 2, where we find dabblers to exhibit unique sets of attributes. Surprisingly, dabblers have more advantaged characteristics than the always employees and are better off in the labour market, thus not following our initial alignment with Weber's (1930) disadvantage theory, Light's (1972) protected market theory, Blalock's (1967) middleman minority theory and the notion of push and necessity entrepreneurs. The dabbled self-employed are more male oriented, less likely to be from non-white ethnic background, are UK nationals, consider English to be their first language, middle aged workers, reporting better health conditions, less likely to be or consider themselves as disabled, have higher educational qualifications, higher degree achievement and A-levels, work in highly skilled industries and report higher job satisfaction, own their homes (either by mortgage or outright) as opposed to renting and with both parents previously self-employed rather than paid workers. Also, they are more skilled than the sustained self-employed, with respect to their years of education, qualifications and skill levels. This confirms with the findings in the UK, showing

recent UK self-employed to be in highly skilled occupations, as the rise in self-employment over the years occurred in higher skilled managerial professional and associate professional jobs (Deane 2016; Hatfield 2015). The findings for dabblers are similar to the notion of Hybrid entrepreneurs that emerged in the last few years,[25] but not quite the same as only a small percentage (around 12.9% only) report to have second paid job. Thus, we cannot establish a strong link between dabbled and hybrid self-employed. Thus, this does not align with our initial hypothesis that the presence of dabblers arise from a disadvantage side. Still, dabblers are not well embedded in self-employment as they do not have aligned attributes compared to sustainers and the general group of self-employed. As such, this places them in distinct position from sustained self-employed and paid employees.

Hypothesis 3 is fully supported, whereby the sustained self-employed are different from paid workers in all observed aspects. Also, the results align with the discussion above that the sustained self-employed are more likely to have features closely aligned to self-employment. This is shown when comparing our main division results with the logit computed marginal effect estimates for the combined group of self-employed. We find that for all regressors the marginal effect probabilities are almost the same when comparing the sustained self-employed with the self-employed but are not similar for the dabbled self-employed. These latter are also different from the general group of paid workers. This confirms with our main division reasoning that sustainers are more attached to self-employment than dabbles. Whereas dabblers are unique in their own observed socio-economic and demographic characteristics and are distinct from paid and self-employed workers. For instance, we find sustainers more male oriented and older than employees. This confirms with the findings in the UK that report gender effect to be persistent in self-employment, where female business owners are lower in numbers, less than half, lagging behind male self-employment and in a less stable state compared to most OECD countries (D'Arcy and Gardiner 2014; Hatfield 2015; Meager 2007). Oppositely, the female participation rates in paid employment has been rising and accounting for a 13% increase for women from 1971 to 2013 (ONS 2013). Also The findings confirm the convex relationship found between age and self-employment, where self-employment increases with age at a growing rate (Borjas 1987; D'Arcy and Gardiner's 2014). This is when the self-employed learn more about their abilities over time (Cowling and Taylor 2001; Dawson, Henley, and Latreille 2009; Jovanovic 1979; Martinez-Granado 2002; Meager 2007; Taylor

25 Showing a growth in the number of workers who combine both self-employment and paid employment work, as a response to the tough economic conditions within a country (D'Arcy and Gardiner 2014; Solesvik 2017).

2004). However, the sustained self-employed are less likely be seen to be white workers, born in the UK and native English speakers relative to employees, and report no or low educational attainment. The results are also consistent with Urwin (2011)'s findings where the self-employed report mostly intermediate level of educational qualifications.

Hypothesis 4 is partially supported, with sustainers having specific attributes that pull them and keep them more attached into self-employment than dabblers but are not more advantaged with respect to their educational qualifications. Thus we could not validate their entrepreneurial orientation. On one hand sustainers are better off than dabblers, reporting better health conditions, fewer disabilities, higher work satisfaction, owning their home outright and having lower probability to own by mortgage settlements, higher probability to be married/cohabiting with spouse/partner not needing to be employed and with previous self-employed fathers. On the other hand, dabblers have a higher percentage probability of previous self-employed mothers, employed spouse/partner providing secure income for financial reassurance, report relatively the highest levels of educational attainments, and higher probability of working in highly skilled industries.

The findings for sustainers confirms with the previous studies on self-employment; whereby D'Arcy and Gardiner (2014) and Hatfield (2015) stressed on the need for physical capital to help the start-up and endurance of the business. Previous studies (e.g. Blanchflower and Oswald 1998; Dawson, Henley, and Latreille 2009; Dunn and Holtz-Eakin 2000; Evans and Leighton 1989; Henley 2004) showed a positive effect on housing wealth and the likelihood of being self-employed.[26]

As well Taylor's (2001) study on the UK demonstrated a negative association between poor health and self-employment. As for both subgroups of self-employed, our results confirm with the notion of intergenerational mobility, through which parents' social status and employment increases the success in the transition of children into entrepreneurial activities, especially for self-employed parents (e.g. Andersson and Hammarstedt 2010; Dunn and Holtz-Eakin 2000; Fairlie 1999; Fairlie and Robb 2003; Henley 2004; Hout and Rosen 2000; Martinez-Granado 2002; Meager 2007; Parker 2004; Taylor 2001), suggesting that parents with prior self-employment experience increase children's decisions to follow the same path (Eren and Sula 2012). Our work align with the empirical studies on the UK (e.g., Brown et al. 2011; Clark and Drinkwater 1998; Knight and Mckay 2000; Taylor 1996; Wellington 2006) reporting most self-employed to be married and to have dependent children. For the case of dabblers,

26 Where wealth makes the risk associated with uncertain profits from self-employment less important, and thus makes self-employment more attractive than paid employment, by removing the bindings from liquidity constraints (Pleijster and Van der Valk 2007).

our results support the reports on the influence housing structure on self-employment. Where marital status influences the labour market outcomes for self-employment (Parker 2009; Simoes and Crespo 2015), as the presence of a spouse/partner offers a safety net for the self-employed, emotional support and reassurance by securing a monthly fixed income for households and providing start-up capital (Borjas 1986; Bosma et al. 2004; Brown et al. 2011; Budig 2006; Dawson et al. 2012; Parker 2004).Thus, the presence of working spouse can provide a safety zone for their dabbling form of work.

The findings of this paper do not align well with our main hypotheses reasoning, where we expected to find a group of disadvantaged workers dabbling between the labour market states, reflecting a market deficiency because they cannot access paid employment nor endure long in self-employment, and are rather pushed into self-employment. What we actually found is that self-employed dabblers are not the marginalised group of workers that we expected them to be and their movement between forms of self-employed and employee jobs seems to reflect a labour market 'power' of sorts. There is a clear understanding that dabblers demonstrate a vibrant tendency towards self-employment and paid employment but are also distinct from both self-employed sustainers and the always employees. This implies that we have a sequential of highly professionals and advantaged portfolio workers possibly making the best out of self-employment and paid employment jobs as they arise. As for the sustained self-employed, we find them to have more aligned characteristics with self-employment but unable to validate their entrepreneurial orientation, because they are not relatively more skilled than the dabbled self-employed with respect to

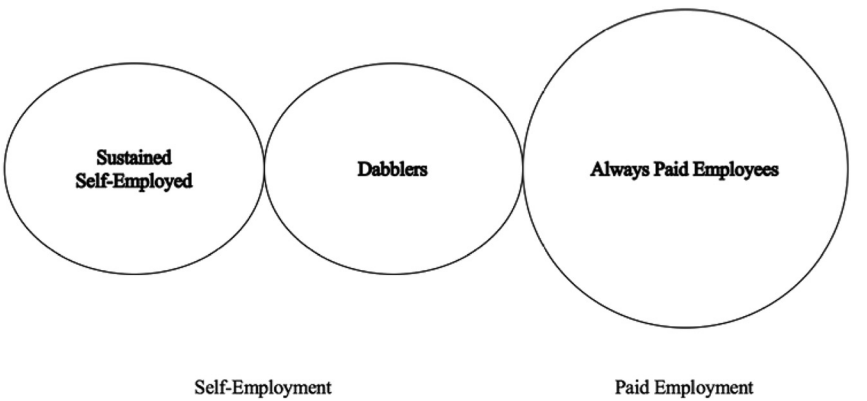

Figure 5: Model framework 2.

their educational qualification and occupational segregation. Thus, there is no validation to their entrepreneurial orientation.

The results of this study show that both subgroups of self-employed have more advantaged characteristics than paid employees, where the sustained self-employed are more likely to resemble the general definition of self-employed. An interesting shift, from the authors' perspective, is that the dabbled self-employed were found to be the highly skilled workers who achieve the highest educational attainments compared to the sustained self-employed and to the always employees. This group of workers is not disadvantaged with respect to their observed socio-economic and demographic characteristics and is quite different from the sustained self-employed and the always employees. Thus, our model framework shifted to the newly updated framework shown in Figure 5 below.

6 Conclusion

According to our exploratory endeavours, it is clear that both subgroups of self-employed are different and have more advantaged characteristics than paid workers. Thus, the high barriers to entry are shown to exist in self-employment and not in paid employment, as the self-employed need to acquire certain attributes to help them remain in this type of employment. To sum up, the results indicate that sustainers have characteristics more closely aligned with the general group of self-employed, but with no clear validation of their entrepreneurial orientation, as they are not the highly skilled nor educated workers in our sample.

Unexpectedly, the attention shifts from sustainers to dabblers, whom we see as more advantaged than the other two groups of workers, with respect to their observed attributes, especially with respect to their educational qualifications and industry skill levels. In some sense, they are in between these two stages of employment, where indeed they have a propensity towards self-employment but at the same time and to some extent we seen them later engaging in paid employment. Still, the results so far do not help us explain the pattern and logic behind their dabbling pattern between states, and the empirical testing was not able to depict any causal or direct relationship concerning the effect of individuals' socio-economic attributes on the probability to dabble in self-employment. Thus future work is called on computing earnings returns and studying transition behaviours to help set grounds on this dynamic form of work.

The main conclusion that can be drawn from our study so far is that we have three groups of workers that are distinct from one another in the labour market. Two extremes in employment; sustained self-employed and wage earners, and in between are the dabbled self-employed, who are different from both with respect

to their attributes. It is crucial to note that dabblers are not hybrid entrepreneurs (as they do not practice both work at the same time), nor are the marginalized group of workers we expected them to be. On the contrary, they represent the highly skilled force in the sample that for some reason dip in and out from different employment states to practice their work. This implies that we may have a sequential of highly professionals and advantaged portfolio workers possibly making the best out of self-employment and paid employment jobs as they arise. This sheds new light on a number of important academic and policy debates, arising from the creation of a new distinction amongst the self-employed, stressing on new dabbling form of work. Thus, we provide key insights into a group (*Dabblers*) who have not been separately identified in the labour market to date. We offer a better proximity that presents the actual scene in the labour market and provide new microeconometric evidence on the heterogeneity in self-employment. We raise awareness of policy makers on this new form of dabbling work, with the most challenging factor looking at the issue of their security and longevity to help support effective labour government policy. Thus, we argue that there is more than a simple dichotomy between paid employment and self-employment. Where these dabblers reflect a labour market 'power' of sorts and are pulled rather than pushed into self-employment. An important contribution of this paper is the identification of a significant group of '*Dabblers*' who have quite distinct characteristics when compared to both employees and those who sustain in self-employment. In addition, such a group has the potential to shed light on a key issue in the literature regarding the earnings returns to self-employment. Further work is called to explain the uniqueness of this group of workers and to determine the reasons behind the differences found with respect to their socio-economic and demographic characteristics that would help us explain the purpose behind their dabbling pattern.

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