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Job switching: What's in it for me?

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Job switching;

What's in it for me?

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Abstract

This paper analyse how previous experience and affiliation influence individual employees through higher individual earnings. The paper focuses on individuals as knowledge carriers and that the diffusion of this knowledge is determined by the individual's mobility across locations and firms. Hence, this paper investigates the existence of “brain circulation” and the individual benefits in terms of a higher wage. We define experience in a broad manner and include previous experience through different establishments, firms, sectors and locations. The results show that diversified experience in terms of number of establishments, firms and geographical locations influence the wage positively. A diversified sectorial experience, however, reduces the wage.

Keywords: diversified experience, individual earnings, employer-employee data

JEL-codes: D21, D22, D85, J24, J31, J62

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1. Introduction

This paper analyse how an individuals diversified experience benefit the individual through an increase in earnings. In this paper we hypothesis that individual's prime function is to be knowledge carriers. As most of an individual's knowledge is tacit and cannot be separated from the individual, in order to access the knowledge an individual have to move; across location, sector, establishments or firms. As individuals get more experienced through for example changing workplace or sector this accumulated experience should benefit the individual in terms of a higher wage. Previous studies have focused on specific type of individuals, normally engineers, and the consequences for firms from their inter-firm mobility (Almeida and Kogut 1999; Song et al. 2003; Maliranta et al. 2009). This paper add to the literature by focusing on the diffusion of knowledge through the inter-establishment, inter-firm, inter-region and inter-sectoral mobility and the effect for the individual. This has to the authors knowledge not been analysed this systematic before.

The empirical design is based on employer-employee matched data covering most active firms and individuals in Sweden over the time period 1990 to 2008. The experience of each individual is identified by tracking the individual over the given period. Experience is defined in a broad context where the scale and scope of previous establishments, firms, geographical locations (municipalities), and sectors are used where we observe how a change in establishment, firm, sector and/or municipality is associated with a change in the wage. By having this broad definition of previous experience we can decipher what diversified experience is beneficial from the individual perspective. Hence, we can analyse if it is the scale or scope of experience that induces a competitive advantage. Another contribution is that we analyse individuals with different educational tracks and with different occupations to decipher the influence from diversified experience on the wage.

From the descriptive statistics we observe that individuals overall tend to be less geographical mobile. More mobility occurs between firms, establishments and sectors, where sectors are defined at the five-digit level. Approximately half of the individuals have changed establishments three times, firms two times, sectors four times and locations two times. While comparing across different set of individuals we see differences among men and women, individuals of different ages, but also across different levels of human capital (education and occupation). The empirical results show robust results across educational and occupational

categories for geographical and sectorial diversified experience where individuals that have changed location experience a higher wage while shifting sectors have a diminishing effect on wages. For all individuals the number of different establishments and firms increases the wage and this is also true for individuals with a degree in engineering, social science, and natural science. Individuals with a pedagogical degree do however experience a wage loss if they have switched establishments and firms many times. Across occupational categories, it is individuals with social occupations that diverge from the rest where the level of diversified experience in establishments and firms does not influence the wage.

The rest of the paper is organized as follows: section 2 gives the background and motivation of the paper with theoretical underpinnings describing the individual as a knowledge carrier and the associated benefits. Section 3 presents the data, variables and method followed by the empirical results in Section 4. The last section (5) concludes the paper.

2. Background and motivation

Knowledge can be embodied in several different forms such as individuals, books, machines, or processes. The embodied knowledge in individuals, human capital, comprise qualifications acquired through education, skills acquired through learning by doing and training, inherited abilities, ethics, and habits. Individuals are in this setting knowledge carriers (Arrow 1962; Angel 1989; Glaeser et al. 1992; Saxenian 1994). An individual cannot be separated from these characteristics (Becker 1964), and they can therefore not be sold or used as collateral (Pearce 1992). The diffusion of knowledge is thereby determined by the individual's mobility across locations and firms (Becker 1964). Disembodied knowledge on the other hand arises because of knowledge spillovers and positive externalities (Asheim 1999). There are quite a few empirical studies focusing on the knowledge-carrier characteristic in individuals from different angles. Individuals are for example hired for their connectivity (in terms of financial access) and this positively influence the firm performance for less connected firms in the US (Rao and Drazin 2002). Evidence from Sweden show that labour mobility across firms is significantly higher in clusters compared to other parts of the urban economy and is thereby a valid underpinning to explain firm-performance in these locations (Power and Lundmark 2004).

This paper focus on the mobility of individuals and the associated knowledge diffusion. Knowledge spillovers arise when individuals receive training, learning by doing and/or education

at a former employee and bring this knowledge to the current employee which can then be used and enhance the productivity of the firm. Firms can in this aspect increase their knowledge base and absorb knowledge spillovers by systematically hire individuals with a “beneficial” background. By this token, if the firm benefit they should try to attract the worker to their workplace and also try to keep the worker if employed by offering a higher wage. Hence, the effect is internalized by the labour market. The effect from previous experience on wages have been examined in specific sectors and/or specific experiences such as R&D-generated knowledge (Møen 2005; Magnani 2006; Maliranta, et al. 2009), MNE-experience for manufacturing firms (Balsvik 2010), MNE-experience for domestic workers in manufacturing firms (Görg and Strobl 2005) where the studies find that previous experience have a positive effect on wages. Other studies have found that previous experience lowers the wage of an individual as they claim that this is a sign of workers in search of a good match (Andersson et al. 2013). Hence, there tend to be mixed empirical evidence. Fosfuri and Rønde (2004) state that the knowledge channel through labour mobility and to what degree it is internalised by the labour market is dependent on the type of knowledge, firm and industry features.

This paper contributes to the current literature by broadening the concept of experience but not only looking at inter-firm experience but also inter-region and inter-sector experience. By neglecting the inter-sector and inter-regional labour mobility important aspects of the individual’s knowledge set might be ignored. Several studies point at the importance of regional networks that form the base for labour mobility and knowledge transfers (Almeida and Kogut 1999). Other studies find evidence that firms uses labour mobility as a mean to access technologically as well as geographical distant knowledge. The hiring strategy can also be based on improving a firm’s market reach (Song, et al. 2003). Even though these studies emphasise the inter-firm labour mobility they touch on the importance of geographically locked knowledge that can only be accessed through hiring an individual that have worked in these location. This geographically locked knowledge most likely arise in regions that have a competitive advantage in knowledge transfers and diffusion, such as locations with a university (Jaffe et al. 1993), locations with strong regional labour market networks (Saxenian 1994; Almeida and Kogut 1999) or agglomeration economics. It is of course hard to differentiate the influence from inter-firm experience from inter-regional experience for the individual as they are often interchangeable. A regional factor that is not incorporated in the change of firms is the access and possibility to build

up business and social networks that can help you become more productive and more attractive on the labour market. Networks tend to have limited spatial reach as the cost and efficiency of establishing links increases with distance. Networks are therefore often characterised by small clusters or islands with many local links with a low average distance (Jackson and Rogers 2005; Carayol and Roux 2009). Networks do however benefit from long-distance links as they bring extra information and indirect access to distant actors, i.e. positive externalities (Carayol et al. 2008). An individual that change location have a cost advantage in keeping the already established networks.

To access knowledge across sectors and use sector-specific knowledge in a new setting have been emphasised in many studies. Perhaps, most recognised is the contribution by Jacobs (1969) who focused on the importance of diversification in knowledge distribution and spillovers. Hence, she concluded that knowledge in other sectors outside the own core industry is beneficial for the own firm. Jacobs emphasised diversification at the local level such as in a firm or a neighbourhood, even though at another level this can be translated to the individual level where individuals with a diversified experience, in terms of which sectors the individual have worked in, have a broader knowledge set and skills that can be beneficial for a new employer. Labor mobility between regions involves costs to the individual as they have to find for example new housing, new schools for their children etc. Changing firms can also involve costs as social relations are affected (Power and Lundmark 2004). As individuals endure more costs they want to be compensated by a higher wage.

3. Data, variables, and method

The empirical finding in this paper is based on data from Statistics Sweden, which has restricted public access. The data covers all individuals and all firms in Sweden over the time period 1990 to 2008. For each individual it is possible to access detailed information such as where the individual works and live, in which sector, education etc. Each individual can also be matched to each employee over the time period. For this paper we have focused on the experience of each individual and analyse how this influence the individual in terms of higher monetary remuneration. Hence, we model a change in establishment, firm, municipality, occupation, and sector and see if there is an associated change in the wage level.

As the individual experience is at the core of this paper we try to define it in a broad measure. We therefore use information on number of the establishments (*Number of establishments*), firms (*Number of firms*), sectors (*Number of sectors*), and municipalities (*Number of municipalities*), for each individual. Thus, we measure the number of different firms, establishments etc. that the individual have been employed in over the chosen time period. We also measure the unique number of each category over time. Hence, in the first case we assume that even though that you have worked in the same establishment five years ago it is likely that the other employees have changed and hence an individual have the opportunity to learn something and expand its social network. In the latter case we assume that in order for the individual to learn something new and get another experience is to change establishment (*Unique number of establishments*), firm (*Unique number of firms*), sector (*Unique number of sectors*) or location (*Unique number of municipalities*). We also include a squared variable of the number of establishment and firms to account for possible marginal diminishing effects from the number of establishments/firms.

As for the first estimation we analyse the benefits for the individual in terms of yearly labor income. Hence, the dependent variable measuring the individual benefit is the total yearly labor income (*Labor income*). This variable comprises the total payment that an individual receive from its employer and includes wage as well as other financial remunerations.¹ The labor income is measured as the gross income. The independent variable in focus characterizes the individual's diversified experience. As other variables also influence labor income, we control for personal characteristics such that are immutable (*Gender, Background*) and the human capital level (*Education, Education type, Experience, Occupation*). Not only the individual features influence the wage level, large firm (*Firm Size*) tend to have an overall higher wage level (Lallemand et al. 2005). Wages might also differ across industries (*Industry*).

Even if the lion's share of the labor income is determined at the individual and firm level the location is also of importance. Location factors are captured by the size of the municipality.² A municipality's size (*Market potential*) is defined by the total access to the aggregated value of all individuals' wages (in thousand SEK) with a distance-decay function. The accessibility

¹ It is not possible to access the number of hours worked, therefore individuals with a labor income below 156 000 SEK (this value corresponds to the minimum income required for a work permit according to the Swedish Migration Board) is excluded, approximately 875 000 individuals. The rest of the empirical analysis rest on the assumption that part- and full-time workers are compensated in the same manner.

² A municipality is the lowest level of governance in Sweden, there are 290.

measure is made up by three parts: local accessibility (wages in the own municipality), regional accessibility (wages in municipalities in the same region), and extra-regional accessibility (wages in municipalities outside the region). Each of the accessibilities differs according to a time-sensitivity parameter (Johansson et al. 2002; 2003). By using an accessibility measure, spatial dependencies are reduced as the economic activity in neighboring municipalities and interdependencies among municipalities is captured (Gråsjö 2005; Andersson and Gråsjö 2009). It should be noted that the market potential in a municipality captures many other interesting variables such as the human capital level. The bivariate correlation between these are approximately 0.70. Other important variables to control for are the level of urban amenities. Individuals tend to “pay” for being in locations with a large supply of consumption and entertainment opportunities (*Urban amenity*). Since the labor income is measured as gross instead of net, we include the tax level (*Tax level*) in each municipality. This tax rate is set at the municipality level and assigned to the municipality of residence of the individual. Table 1 presents a description and summary statistics for the variables in the first estimation focusing on the individual level.

Table 1. Description of variables and summary statistics, individual estimation (n=3 105 478)

Variable	Definition	Exp. sign	Mean	St. dev
<i>Labor income</i>	Total gross yearly labor income (in thousand SEK)	Dep. Variable	337.35	208.81
<i>Individual features</i>				
<i>Experience</i>				
<i>Number of establishments</i>	Total number of establishments where the individual have worked from 1990 to 2008	+	3.71	2.16
<i>Number of firms</i>	Total number of firms where the individual have worked from 1990 to 2008	+	3.70	2.35
<i>Number of sectors</i>	Total number of sectors (5 digit level) where the individual have worked from 1990 to 2008	+	4.38	2.50
<i>Number of municipalities</i>	Total number of municipalities where the individual have worked from 1990 to 2008	+	3.01	2.06
<i>Unique number of establishments</i>	Unique number of establishments where the individual have worked from 1990 to 2008	+	3.38	1.95
<i>Unique number of firms</i>	Unique number of firms where the individual have worked from 1990 to 2008	+	3.43	2.22
<i>Unique number of sectors</i>	Unique number of sectors (5 digit level) where the individual have worked from 1990 to 2008	+	3.78	2.08
<i>Unique number of municipalities</i>	Unique number of municipalities where the individual have worked from 1990 to 2008	+	2.27	1.36
<i>Gender</i>	Sex of the individual, 1= male	+	0.54	0.49
<i>Background</i>	1 if the individual is born in Sweden, 0=foreign born	-	0.14	0.34
<i>Education</i>	Number of schooling years	+	12.53	2.37

<i>Education type</i>	Dummy based on the type of education, 13 in total			
<i>Experience</i>	Number of years in the workforce since 1990	+	14.08	5.39
<i>Occupation</i>	Type of occupation; cognitive occupations, occupations in management and administration, social occupations, and motor occupations ^a			
<i>Firm features</i>				
<i>Firm size</i>	Number of employees in the firm	+	759.04	3638.99
<i>Industry</i>	Dummy based on the two-digit SIC-code, 60 dummies in total			
<i>Municipal features</i>				
<i>Market potential</i>	Sum of the access to wage sums (in 10 000 SEK) weighted by the distance	+	1.85e6	2.81e6
<i>Urban amenity</i>	Proportion in firms with activities in the restaurant, cultural, and entertainment sector (two-digit SIC codes 55-56, 90-93)	-	0.04	0.03
<i>Tax level</i>	Total municipal tax rate in percent of the income that employees pay	-	31.98	0.98

^a The occupations are described in Johansson and Klaesson (2011).

The biggest diversified experience arises from individuals when they change sectors. This is driven by the level of detailed information on sectors where these are measured at the 5-digit level. Individuals have roughly changed establishments at the same frequency as firms. Hence, individuals tend to change firm and not only establishments in the same firm. The lowest level of experience corresponds to the geographical dimension where on average the individuals have worked in two municipalities. This can be explained by the change in households in Sweden, up till the 1990's two-persons households increased. Since it is more difficult to find employment opportunities for two individuals within the same location the spatial mobility is reduced. Before turning to the empirical estimations we present descriptive statistics over how often individuals change establishments, firms, municipalities, or sectors. The table presents the cumulative percentage for the total number of change in respective category.

Table 2. Frequency table (n=3 105 478)

Number of "experiences"	Establishments	Firms	Sectors	Municipalities
1	19,1	20,9	13,3	31,0
2	37,3	39,2	28,2	50,3
3	55,0	56,1	43,6	66,9
4	70,0	69,9	57,9	78,8
5	81,6	80,5	70,4	87,4
6	89,5	88,0	80,5	93,0
7	94,5	92,9	88,0	96,4
8	97,3	96,0	93,2	98,2
9	98,8	97,8	96,4	99,2

10	99,5	98,9	98,2	99,7
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We can observe that individuals do not tend to change location that often. Half of the individuals have changed their working municipality one or two times during the period from 1990 to 2008. There is considerably more mobility across sectors, firms and establishments where approximately half of the individuals have changed sectors, firms and establishments three times. Most mobility is seen in the number of sectors, which might first seem surprising. The main reason for this is that we measure sectors at the 5-digit level. Hence, it gives a detailed description of the industry. To decipher this further we present the average number of changes in each category divided according to gender, age, education and occupation in table 3. There are three age and education groups, and four different types of occupations. The occupation are categorized into four groups based on Johansson and Klaesson (2011); management and administration occupations, cognitive occupations, social occupations, and motor occupations. These occupation categories are based on the type of skills that is used in order to fulfill their work tasks.

Table 3. Differences across gender, age, occupation and education level in the different types of experience (n=3 105 478)

Category	Number of establishments (mean)	Number of firms (mean)	Number of sectors (mean)	Number of municipalities (mean)
All	3.71	3.70	4.38	3.01
Gender				
Men	3.53	3.75	4.21	3.11
Women	3.75	3.57	4.56	2.93
Age				
Under 25	2.01	2.15	3.12	2.28
Between 25-50	4.05	4.17	5.01	3.48
Above 50	3.40	3.21	3.58	2.41
Education level				
Senior high school	3.42	3.58	4.01	2.75
Some higher education	3.96	3.80	4.61	3.16
More than three years of higher education	4.03	3.84	5.23	3.68
Occupation				
Cognitive occupations	3.94	3.85	4.91	3.45
Occupations in management and administration	3.97	4.05	4.53	3.16
Social occupations	3.82	3.61	4.57	2.97
Motor occupations	3.23	3.56	3.92	2.79

We observe that there are significant differences when the sample is dis-aggregated according to gender, age, education, and occupation. Women have overall a larger diversified experience when it comes to number of sectors and number of establishments whereas men have changed firms and municipalities more often. Men often commute over longer distances and have therefore a greater opportunity to access more regions without bearing the cost of moving. It is interesting to see that women tend to change establishments more often but not the number of firms. Hence, women are more likely to stay within the same group while men change firms. Across different age-groups it is those individuals aged 25 to 50 that have the largest experience irrespective of type. It is no surprise that younger individuals have less experience as they have limited time to explore the labor market. It is then more interesting to see that individuals over the age of 50 have a lower degree of diversified experience compared to those middle-aged. This reflects the change in the labor market and attitudes where it was more common in the old days to stay at the same firm over a longer time period.

Regarding individuals with different educational levels, those with the highest level have a more diversified experience across, establishments, firms, sectors and municipalities. These individuals are often attracted to more urban locations where individuals tend to switch jobs more frequently (Andersson and Thulin 2008). In both the age and educational groups we see consistent patterns, this is however not reflecting across occupational groups. Occupations in management and administration have more diversified experience in terms of number of establishments and firms while individuals with cognitive occupations have move across sectors and municipalities to a larger extent.

4. Empirical estimations

Table 4 shows the estimations running an OLS for all individuals in 2008 and how the cumulative experience since 1990 influence their wage level. We also differentiate across different set of individuals; type of education and occupation. The education types are split into engineers as this group have been extensively analysed in previous studies (Gilfillan 1935; Saxenian 1994; Almeida and Kogut 1999; Song, et al. 2003) but also teachers, social science and natural science are analysed.³ We have chosen to not add all educational groups so the total number of individuals in each educational category does not equal the total number of

³ The educational categories are based on the classification by Statistics Sweden (Sun2000Grp) engineers; 54-55, teachers; 13-15, social science; 33-35, and natural science; 43-53.

individuals. However, the four educational groups amount to more than half of the sample. The occupation is categorized into the same manner as previous sections: management and administration occupations, cognitive occupations, social occupations, and motor occupations. As the unit of observation is at the individual level it is not possible to construct a weight matrix. The spatial autocorrelation is reduced by using an accessibility measure (Andersson and Gråsjö 2009) and by clustering the standard errors at the municipality level. Due to high correlation among the number of establishment (firm) and the number of unique number of establishment (firm) these are estimated separately. The control variables are robust across the estimations and in Table 4 it is the reported results from estimating the number of establishments. Two issues needs to be discussed multicollinearity and endogeneity. When using quadratic terms multicollinearity problem will rise. To reduce this centered variables (mean centered) are used (Smith and Sasaki 1979). The endogeneity problem is more serious. In this case it arise as more able individuals are more likely to conduct job switching and be more active in the labor market. The wage increase would then be related to that the individual is more able (above the characteristics that can be observed and control for; education and experience) and not by definition to the increased level of diversified experience. One solution is to construct a panel where fixed-effects at the individual level is applied.

Table 4. Regression results, OLS, influence of diversified experience on wage. All individuals and split according to education

Dependent variable: Ln (Total gross yearly labor income)

Variable	All individuals	Engineers	Teachers	Social science	Natural science
Individual features					
<i>Number of establishments</i>	0.004** (0.0001)	-0.001 (0.0008)	-0.005** (0.001)	0.006** (0.001)	0.004** (0.001)
<i>(Number of establishments)²</i>	-1.68e-4 (0.0001)	-0.0004* (0.0001)	0.0003** (0.0001)	-0.001** (0.0001)	-0.0004** (0.0001)
<i>Number of firms</i>	0.001 (0.001)	0.0004 (0.001)	-0.006** (0.001)	0.006** (0.002)	0.003** (0.001)
<i>(Number of firms)²</i>	0.0002** (0.0001)	-0.0005** (0.0001)	0.0008** (0.0001)	-0.0004** (0.0002)	-0.0002** (0.0001)
<i>Number of sectors</i>	-0.009** (0.001)	-0.003 (0.001)	-0.006** (0.0003)	-0.002 (0.002)	-0.007** (0.001)
<i>Number of municipalities</i>	0.007** (0.002)	0.009** (0.001)	0.002** (0.001)	0.005 (0.004)	0.007** (0.001)
<i>Unique number of establishments</i>	0.007** (0.001)	0.002** (0.001)	-0.004** (0.001)	0.009** (0.001)	0.006** (0.001)
<i>(Unique number of establishments)²</i>	-0.0002** (0.0001)	-0.0005** (0.0001)	0.0003** (0.0001)	-0.001** (0.0001)	-0.0006** (0.0001)

<i>Unique number of firms</i>	0.003** (0.002)	0.002** (0.001)	-0.003** (0.001)	0.009** (0.003)	0.004** (0.001)
<i>(Unique number of firms)²</i>	0.0001 (0.0001)	-0.0004** (0.0001)	0.0008** (0.0001)	-0.0004 (0.0003)	-0.0003** (0.0001)
<i>Unique number of sectors</i>	-0.012** (0.002)	-0.005** (0.002)	-0.008** (0.0032)	-0.005** (0.002)	-0.010** (0.001)
<i>Unique number of municipalities</i>	0.012** (0.002)	0.014** (0.002)	0.003** (0.001)	0.009** (0.005)	0.012** (0.001)
<i>Gender</i>	0.199** (0.004)	0.176** (0.003)	0.100** (0.002)	0.238** (0.010)	0.174** (0.002)
<i>Background</i>	0.049** (0.002)	0.058** (0.004)	0.024** (0.002)	0.067** (0.007)	0.021** (0.003)
<i>Education</i>	0.045** (0.001)	0.053** (0.001)	0.038** (0.001)	0.064** (0.004)	0.037** (0.001)
<i>Experience</i>	0.020** (0.001)	0.029** (0.001)	0.019** (0.0002)	0.028** (0.002)	0.018** (0.001)
<i>Firm features</i>					
<i>Firm size (ln)</i>	0.016** (0.001)	0.025** (0.003)	0.013** (0.001)	0.018** (0.002)	0.021** (0.001)
<i>Municipal features</i>					
<i>Market potential (ln)</i>	0.025** (0.003)	0.025** (0.003)	0.020** (0.002)	0.038** (0.004)	0.019** (0.002)
<i>Urban amenity</i>	0.497** (0.086)	0.473** (0.119)	0.509** (0.081)	0.885** (0.121)	0.187* (0.084)
<i>Tax level</i>	-0.005 (0.003)	-0.015** (0.005)	0.001 (0.002)	-0.012* (0.005)	-0.004* (0.002)
<i>R²</i>	0.42	0.39	0.42	0.42	0.35
<i>P-value (F-stat)</i>	0.00	0.00	0.00	0.00	0.00
<i>N</i>	3 061 329	264 076	238 515	555 696	600 203

** denotes significance at 1 percent level, * denotes significance at 5 percent level. Cluster standard errors (municipalities) in parenthesis. Estimations control for the type of industry, occupation and education type.

Before comparing the results across the educational types we start with the overall results for all individuals. The wage increases for an individual if (s)he has a more diversified experience through shifting between establishments. Even if you have worked there before shifting establishments per se increases the wage. The same is true for working in a higher number of unique establishments, contradicting to the results found by Andersson et al. (2013). There is a marginal diminishing effect from working in too many unique establishments. This might reflect individuals that have a harder time to match their competences to the demand from the working place as suggested in Andersson et al. (2013). We observe a slightly different pattern for the diversified experience through changing firms. The total number of firms does not positively influence the wage for an individual while the unique number of firms does. Thus, it is only

through switching to completely new firms that the individual is compensated by a higher wage switching back and forth from the same firm does not add anything to the individual. The results from the establishment and firm level indicate that the knowledge, business networks through contacts with suppliers, customers, competitors that you gain from working at several establishments and/or firms gives the individual a competitive edge. The employer is willing to pay for these individual characteristics in order to attract the individual to a specific position holding constant the diversified experience from working in different sectors and municipalities. The increase in wage can also be a consequence from the employer has to compensate for the transaction cost in switching work place.

With regard to the diversified experience in number of sectors this has a negative influence on the wage level for the individuals both in terms of the total number of sectors and unique number of sectors. The level of experience is measured at the five-digit level so you can by using this definition change sectors many time without changing the type of industry. Referring to the literature on diversified experience through different type of industries and how the knowledge in one sector can be transferred and used in other sectors, the negative result might at first seem puzzling. Considering that the number of establishments and firms are kept constant an increased level of sectorial experience does not make the individual more attractive as it might signal a lack of specialised knowledge. Another disadvantage with this measure is that there is no distinction between the related and unrelated knowledge that has been emphasized in many studies (Hackbart and Anderson 1975; Jacquemin and Berry 1979; Frenken et al. 2004; Frenken et al. 2007).

To switch geographical location (measured at the municipal level) in terms of absolute numbers and unique numbers increases the wage for an individual. This variable is most likely to reflect the transaction costs that are involved in moving between locations that the employer needs to compensate for. The variable is measured for the work municipalities and individuals might of course stay in the same location and commute but there is also a considerable amount of individuals that have to change residence location. As individuals change location they will have a larger business and perhaps also a social network that can make them more attractive on the labor market.

Looking across the educational categories there are significant differences especially in the level of diversified experience in establishments and firms. The sectorial and regional

experience influences the wage in the same manner across educational categories. Perhaps most interesting is that engineers do not show the same pattern as the other educational groups nor as what is general for all individuals. The differences arise in that diversified experience in number of establishments and the number of sectors does not show any influence on the wage. Even though other studies have focused on the benefits of inter-firm mobility of engineers for firms the differences in the results indicate that engineers are perhaps a specific sample of individuals and the results that hold for this group is hard to generalize. For engineers it is the unique number of establishments and firms that has a positive influence on the wage compared to the total number. Individuals with a degree in pedagogics do not benefit from shifting jobs and it even has a negative influence on the wage. The homogeneity across work places for teachers could cause this result where the number of different establishments or firm could signal differences in fitting in or finding a good match and collaboration with the employer. Individuals with a degree in social and natural science show the same pattern across all variables on the influence on wages and follow the general description in the previous paragraphs.

The control variables show the expected results where men, individuals born in Sweden and those with a higher level of human capital (education and experience) earn a higher wage. This is also true across the different educational categories with some variation in magnitude. We also observe a consistent pattern for firm features where larger firms pay out a higher wage. At the municipal level, we confirm the positive effect from agglomeration economics on an individual's wage. The only results from the control variables that show a somewhat surprising result is the positive effect from urban amenities such as a higher share of restaurants, entertainment and culture activities. It is often claimed that a higher level of urban amenities decreases the wage level as individuals are willing to accept a lower wage in order to live in attractive locations. In Table 5 we present the results on how the diversified experience influences the wage across different occupational groups.

Table 5. Regression results, OLS, influence of diversified experience on wage. All individuals and split according to education

Dependent variable: Ln (Total gross yearly labor income)

Variable	Management and administration occupations	Cognitive occupations	Social occupations	Motor occupations
<i>Individual features</i>				
<i>Number of establishments</i>	0.004** (0.001)	0.005** (0.001)	-0.001 (0.001)	0.001** (0.0004)
<i>(Number of</i>	-1.95e-5	-5.92e-5**	1.67e-5	-0.001**

<i>establishments</i>) ²	(0.0001)	(0.0001)	(0.0001)	(0.0001)
<i>Number of firms</i>	0.002 (0.002)	0.004* (0.002)	-0.001 (0.001)	0.002** (0.0004)
<i>(Number of firms)</i> ²	0.0002** (0.0001)	-0.0001 (0.0001)	0.0003** (0.0001)	-0.0003** (0.0001)
<i>Number of sectors</i>	-0.011** (0.001)	-0.006** (0.002)	-0.005** (0.001)	-0.006** (0.0004)
<i>Number of municipalities</i>	0.008** (0.002)	0.009** (0.003)	0.007** (0.001)	0.005** (0.0004)
<i>Unique number of establishments</i>	0.006** (0.001)	0.008** (0.001)	0.001 (0.001)	0.003** (0.0004)
<i>(Unique number of establishments)</i> ²	-0.0005** (0.0001)	-0.0006** (0.0001)	-4.57e-5 (9e-5)	-0.001** (0.0001)
<i>Unique number of firms</i>	0.005** (0.001)	0.006** (0.002)	0.001 (0.002)	0.003** (0.0003)
<i>(Unique number of firms)</i> ²	-0.0002 (0.0001)	-8.31e-5 (0.0001)	0.0002* (0.0001)	-0.001** (0.0001)
<i>Unique number of sectors</i>	-0.014** (0.001)	-0.009** (0.002)	-0.007** (0.001)	-0.009** (0.0004)
<i>Unique number of municipalities</i>	0.011** (0.002)	0.018** (0.004)	0.011** (0.002)	0.009** (0.001)
<i>Gender</i>	0.177** (0.005)	0.257** (0.007)	0.171** (0.007)	0.145** (0.003)
<i>Background</i>	0.072** (0.004)	0.086** (0.006)	0.042** (0.001)	0.005** (0.002)
<i>Education</i>	0.045** (0.002)	0.069** (0.001)	0.031** (0.001)	0.014** (0.001)
<i>Experience</i>	0.023** (0.0004)	0.033** (0.001)	0.018** (0.001)	0.011** (0.0002)
<i>Firm features</i>				
<i>Firm size (ln)</i>	0.024** (0.002)	0.020** (0.002)	0.010** (0.002)	0.017** (0.001)
<i>Municipal features</i>				
<i>Market potential (ln)</i>	0.022** (0.004)	0.039** (0.004)	0.027** (0.002)	0.010** (0.002)
<i>Urban amenity</i>	0.546** (0.073)	0.886** (0.123)	0.539** (0.085)	-0.011 (0.060)
<i>Tax level</i>	-0.009** (0.004)	-0.013** (0.005)	0.0001 (0.003)	0.002 (0.002)
<i>R²</i>	0.36	0.38	0.40	0.29
<i>F-value</i>	0.00	0.00	0.00	0.00
<i>N</i>	682 201	673 211	885 751	820 166

** denotes significance at 1 percent level, * denotes significance at 5 percent level. Cluster standard errors (municipalities) in parenthesis. Estimations control for the type of industry and education type.

The results for the sectorial (negative influence) and geographical (positive influence) experience are once again robust across all categories, this time across occupations. The major differences arise for the experience gained in firms and establishments. Individuals working in management

and administration occupations, cognitive occupations, and motor occupations experience a higher wage if they have worked in more number of establishments and at more unique number of establishments. The same applies for the unique number of firms. For individuals in social occupations such as health and social workers, preschool teachers and sales personnel there is no benefit in terms of a higher wage from changing works or establishments.

5. Conclusions

We observe a tendency where individuals are more willing to change establishments and firms and those individuals are not loyal to one firm as was more common three-four decades ago. Individuals regard job switching as a way to increase their wage level and perhaps also their tasks that they are performing. Employers are willing to compensate the employees if they bring knowledge and contacts that can be used in the new firm to make them more productive and/or innovative. In this paper we analyse how a persons accumulated experience over the years 1990 to 2008 influence the individuals wage in 2008. We separate experience in regards to the number of (total and unique) establishments, firms, sectors and municipalities. This is done to isolate the influence on wages from each of the type of experience. We also differentiate among different groups of individuals based on their educational track and occupation. Most studies focus on engineers and by expanding the categories of individuals it is possible to tell a richer story.

The empirical findings show robust results across educational and occupational categories in terms of the geographical and sectorial diversified experience. Individuals that have worked in more locations experience a higher wage while working in many sectors tend to have a diminishing effect on an individual's wages. The more diversified experience an individual has in terms of total number and unique number of different establishments and firms the higher is the wage. These findings hold also for individuals with a degree in engineering, social science, and natural science. Individuals with a pedagogical degree do however experience a wage loss if they have switched establishments and firms many times. Across occupational categories, it is individuals with social occupations that diverge from the rest where the level of diversified experience in establishments and firms does not influence the wage.

There are also differences across age groups, individuals with different skills sets (education and occupation) and of different gender. Women have overall a larger diversified experience when it comes to number of sectors and number of establishments whereas men have changed firms and municipalities more often. Thus, women are more likely to stay within the

same group while men change firms. Across different age-groups it is those individuals aged 25 to 50 that have the largest experience irrespective of type. This reflects the change in the labor market and attitudes where it was more common in the old days to stay at the same firm over a longer time period. Regarding individuals with different human capital level (educational and occupation) those with the highest level of education have a more diversified experience in terms of establishments, firms, sectors and municipalities. Across occupations there is a mixed pattern.

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