VILNIUS UNIVERSITY

FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION

Quantitative Economics

PAULIUS VENCIUS

BACHELOR THESIS

JOB SEARCH BEHAVIOR OF EMPLOYED AND UNEMPLOYED PEOPLE IN LITHUANIA

Student _____

(signature)

Supervisor Dr. Jose Garcia-Louzao Perez

(scientific degree of the supervisor, academic title, name, surname)

_____

(signature)

Date of submission of the academic paper

_____

Registration No. _____

Assessment of the academic paper

_____

(Date, assessment score, signature of the chairman of the commission)

Vilnius, 2021

Table of content

Content of tables

Content of figures

List of Appendices

1. INTRODUCTION

Trading frictions characterize labor markets: it takes time for workers to find jobs and firms to fill vacancies (Mortensen and Pissarides, 1999). Not surprisingly, job search plays a fundamental role in modern theories of the labor market to understand unemployment dynamics, the duration of unemployment and employment, or the existence of earnings dispersion among homogenous workers (Rogerson et al., 2005).

While most of the theoretical work treats job search as a uniform activity, it is clear that agents have several choices to make that ultimately affect the outcomes of this process (Addison and Portugal, 2002; Weber, 2006). These decisions typically refer to how much time and effort to exert when searching as well as which and how many methods to use. The choice of both intensity and methods are essential for the search outcome, as they give access to different pools of job offers and influence the job offer arrival rate. Importantly, returns may not be constant across individual workers and labor market status, i.e., employed vs. unemployed individuals (Blau and Robins, 1990; Faberman et al., 2019).

A job search can be interpreted as a process of information gathering. The job seekers collect information on job offer criteria and the most successful job search strategies during the search. The job seekers can affect the search outcome by putting less and more effort and intensity into the job search and by choosing between several job search channels. Osberg (1993) compares job search and fishing, where lure and the choice of location improve chances to catch a big fish. As well as in a job search, appropriate methods and timing improve chances of finding a job.

In this bachelor thesis, I investigate the job search behavior of employed and unemployed people in Lithuania. My analysis is based on the Lithuanian Labor Force Survey over the period 2011-2019. This dataset provides me with detailed information on job search activities along with individual, job, and employer characteristics. Using this dataset, I implement my analysis in two steps. Firstly, I document the search activities of employed and unemployed individuals in the cross-section and over time. Secondly, I rely on duration models to study the impact of job search activities on individual job finding probabilities.

The economic transformation in Lithuania has made searching for a job a part of the labor market process. Although most job seekers use the social network as their primary job search channel,

other forms of methods have emerged. Between 2011 and 2012, usage of private employment agencies nearly doubled[1]. Other job search methods, such as online search, were also found in favor.

The job search process in Lithuania has received comparatively little attention in the literature, which has generally focused on unemployed individuals and the primary determinant, the reservation wage. There is no deep research on whether employment is dependent on a job seeker's job search strategy. However, some papers (Beržinskienė, 2009; Pociūtė, 2010) report that a significant investment in search activity will collect more information on vacancies which likely to influence entering work positively. Thus, job search channels vary in their cost and efficiency, while job seekers differ in their job search motives, qualifications, and constraints.

Lithuanian studies have shown that unemployment has scarring effects on individuals. Pociutė (2010) has conducted a survey to investigate the impact of past unemployment on current labor market behavior and concluded that individuals have a higher probability of remaining unemployed. The author also suggests that unemployment duration has a permanent impact on subsequent earnings and the length of the unemployment spell. Beržinskienė (2009) highlights the importance of using an efficient job search method when seeking a job.

Sociologists have linked the probability of finding a job and an individual's social network-Granoveter (2018) implies that a significant part of qualified workers obtained their current employment through friends and family. At the same time, Hannan (1999) finds that personal contacts and vast social networks are essential determinants of finding a job. However, Gregg and Wadsworth (1996) argue such an effect to be negligible for long-term unemployment. The authors imply that different job search strategies attract different types of employment. Thus, if different job search strategies draw offers of different kinds of firms, job seekers should vary their search methods and intensity across strategies as the marginal returns in each job search strategy differ. Also, a job seeker's choice of search strategy reflects their perceptions of the costs and benefits associated with job search channels.

Previous research has shown that public employment office and asking friends and family are the two most used job search methods in Lithuania (Beržinskienė, 2009). In Britain, direct approach to the employer and asking friends and family are more systematic job search methods, and these are also associated with a higher probability of Job search success (Longhi and Taylor, 2010). The authors

[1] The LFS of 2011-2012, by Statistics Lithuania.

also imply that employers regard referrals from the employee as informative and reliable than directly contacting the employer. The use of these methods is relatively cheaper. Osberg (1993), analyzing Canadian data, finds a negative relationship between the public employment office service and the probability of job search success. He suggests that this might be caused by a selection bias, which can occur if job seekers have a familiar but unobserved characteristic. On the other hand, Gregg and Wadsworth (1996) research that controlling for selection bias has no impact on the effect of public employment office use on the probability of employment in Britain.

Evidence from the data suggests that job seekers in Lithuania use multiple search methods rather than rely on a single method strategy. Beržinskienė et al. (2009) find that search intensity is determined by the level of financial hardship and commitment to the labor market. The author considers that, on average unemployed individuals use three job search channels in Lithuania, similar to the number used in Britain (Boheim and Taylor, 2001), but more than that found in Portugal (Addison and Portugal, 2002). Gregg and Wadsworth (1996) find a positive relationship between job search intensity and the probability of job search success. On the other hand, Mortensen and Vishwanath's (1994) research finds an adverse effect of the number of job search methods used on the probability of successful job search.

I find that asking friends and family and the Public employment office are the two most popular job search methods among unemployed individuals. In comparison, the average unemployed in Lithuania uses five search methods as part of their job search strategy. In contrast, for employed job seekers, the two most popular job search methods are studying advertisement in newspapers and asking friends and family, while the average employed seeker in Lithuania uses three search methods as their search strategy. The job search behavior of job seekers living in urban areas of Vilnius and Kaunas differs from the behavior of workers living elsewhere in Lithuania. Age, sex, education, family circumstances, and firm characteristics emerge as key determinants of job search strategy and success. My estimates show that other search methods are associated with a higher probability of subsequent employment for the unemployed, keeping all things equal. In contrast, I find that direct contact with a potential employer is associated with a higher probability of subsequent employment for employed, keeping all things equal. Job search intensity, measured as the number of search methods used, has no effect on the probability of work at the subsequent date of the interview, keeping all things equal.

The bachelor thesis is organized as follows: Section 2 offers a short summary of the labor market process literature review. Section 3 describes the data. Section 4 identifies the job search statistics in data, and Section 5 describes the empirical strategy and statistical model. Section 6 discusses empirical results, and Section 7 concludes the analysis.

2. LITERATURE REVIEW

The literature on job search behavior is researched mainly in the USA and few European countries studies. The former contains measures of the various search strategies pursued by job seekers, plus the information on the search methods and intensity. European studies have typically worked with limited data on search strategies and job findings.

The best-known British study is Boheim and Taylor (2001) analysis of the search behavior of employed and unemployed job seekers aged 18-64 from the British Household Panel Survey (BHPS) data for the interval from 1996 to 1999. In their job search model, the choice of the job search strategy is related to their cost and benefits. In each period, job seekers try to maximize the sum of expected future utility by choosing a reservation wage and the level of the search effort. The reservation wage determines the probability of accepting a job offer and the number of search methods impacts the likelihood of finding a job.

Five search channels are distinguished: Friends and family, Direct application to employer, a state Job Centre, answer to newspaper advertisements, and steps to start a business. The use of friends and family direct application to the employer are the most frequently used search methods. As well, these methods are most efficient in generating job offers and finding an acceptable job.

The authors investigate the determinants and outcomes of job search. For this part, search intensity is modeled as a number of job search methods used during the search process. The relationship is direct, suggesting that search intensity reflects the expected returns of job search. At the individual search channel level, finding a job have positive coefficients for direct application, employment agency and using social network. Negative associations are reported for answering newspaper advertisements and starting your own business. The low cost of social networking is associated with the use of this method, and that those with few opportunities use the Job Centre.

The authors separately regress a model of finding a new job on the intensity and then the type of search channel used. Search intensity has a positive and statistically significant impact on the probability of receiving a job. The authors choose to interpret the positive association between the public employment office and likelihood of finding a new job.

This British research highlights the use of the public employment service as altogether optimistic. They report that around 60% of job seekers use public employment agencies, and one in ten job success is attained through this channel. Authors' descriptive statistics for that period indicates that replying to advertisements in newspapers and the public employment offices are the two most popular search channels followed by social networking. These search methods provide the highest likelihood of employment. These methods have comparatively low hit rates being more than offset by a higher frequency of use.

In estimating the probability of a successful job find, the authors' analysis shows that direct application to a potential employer and public employment office each have positive and statistically significant coefficients. The estimated marginal effect of using a public employment agency increases the average job transition probability by 1 percentage point and reduces the unemployment duration for one month. Other results indicate the negative effect of job search duration. The public employment agency coefficient is the highest among the long-term unemployed job seekers. On the other hand, the direct application coefficient is positive for short- and long-term unemployed.

Boheim and Taylor model the probability of using the various search channels, conditional on finding a job. They report that the duration of the unemployment spell is positive for the public unemployment office route, negative otherwise. In comparison, being a registered unemployed beneficiary has a negative effect on public employment office, which implies that claimants are less likely to find a job through the job office. In comparison, the opposite case for direct application to the employer. Job seekers with low qualifications appear to gain employment if they use the public employment agency.

Other literature attempts to investigate the relative effectiveness of different job search channels. For instance, some argue that job search methods vary with the business cycle and that public employment agency is more effective at economic recession (Osberg, 1993). In comparison, analyzing Portuguese data, Addison and Portugal (2002) implied that public employment office is less effective at finding stable and high-paid jobs. Several empirical studies find that searching for a job through friends and family is the most effective search channel compared with others (Gregg and Wadsworth, 1996; Longhi and Taylor, 2011). Kuhn et al. (2014) study the impact of the internet effect on job search using a National longitudinal Survey of Youth (NLY97) data from 2005 to 2008. He finds a significant effect of job search on the internet. Unemployed job seekers who look for work online are employed 25% faster.

A not long time ago, Lithuania was a command economy. At that time, unemployment was not existing since after the qualification or studies; an individual was guaranteed to get a job. If an individual has lost a job, the authorities would find a new job. After the independence of Lithuania, the situation has changed and formed a new labor market. At this moment, the labor market supply does not fit the labor supply. Some of the qualified workers are not needed anymore, and there is a high demand for new specialists. People have to requalified or acquire new skills (Muravska, 2006).

In Lithuania, due to changes in the labor market, the requirements of the skilled and qualified labor force were altered. The demand for trained individuals increased. Thus, it encourages individuals to decide to invest in their education. Qualification and the labor market are interrelated very closely. Job search success depends on investment in human capital. The qualification consists of knowledge, skills, and other characteristics that depend on the individual and determines his/her productivity. Years spent studying, attending courses, training is recognized as an individual's ability to meet the labor market conditions and successfully find an appropriate job (Gižienė and Simanavičienė, 2014).

There are several theories that can also help me to describe employed and unemployed job seekers' behavior, their differences, compare the probability of finding an acceptable job and analyze why unemployed job seekers might accept lower quality jobs than those accepted by employed. I briefly discuss these theories and their implication in this section.

Human capital theory suggests that workers aggregate firm-specific non-transferable human capital through work experience and professional pieces of training. In case of job loss, this firm-specific human capital is lost and has no value in the new work sphere (Gregg and Wadsworth, 1996). Thus, there is no accumulation of human capital during the unemployment period, and there might be deterioration in general accumulated capital which is transferrable among firms and jobs (Mortensen and Pissarides, 1999). This actively demonstrates that unemployed job seekers will be less attractive than employed job applicants to potential employers. They will have a lower probability of entering a job and will find a lower quality job relative to employed job seekers.

According to signaling theory, employers cannot observe the productivity of job seekers, and they might investigate an individual's prior work experience and unemployment duration as a signal of low productivity (Blanchard and Diamond, 1994). Therefore, signaling theory suggests that unemployed job seekers have a lower probability than employed of entering a job and a higher likelihood of finding low-quality work.

Job search theory implies that employed workers seek jobs with higher wages and benefits than their current ones, while unemployed seek jobs that offer wages exceeding their reservation wage (Burdett and Mortensen, 1998). This theory suggests that unemployed people have lower reservation wages than employed job seekers and therefore tend to find a similar job offer acceptable. Thus, all else equal, unemployed individuals are more likely than employed job seekers to enter a job. On the other hand, they are more likely to accept a low-quality job offer.

In terms of individual characteristics, the age variable has been shown to be negatively correlated with the probability of changing jobs. The main reason for this observation might be that the available time to amortize the costs associated with new job search diminishes with age and make a job change less attractive for the older generation. Marital status might also have a negative effect on employed individuals' job search since it is usually more costly if a family must search for employment. Also, due to the traditional gender roles, married and employed females are more likely to be less job-mobile than males. There is a theory that the level of education has a positive effect on the probability of job turnover because a high education provides a better labor market alternative (Weber, 2006).

The working time might influence job-to-job in a positive effect since atypical working hours could suggest that a worker is less integrated into a firm or works in the form of involuntary overtime (Longhi and Taylor, 2011). It is conceivable that part-time working hours might also increase the desire to search for another job. Other job and firm characteristics such as benefits, inflexible working hours, and firm size has been shown to relate to turnover.

Labor market trend theory suggests that hearing from someone already working at a potential firm and studying an advertisement is the most common way of finding a job. Another research by Gregg and Wandsworth (1996) suggests similar findings that personal contacts and newspaper advertisement are the most effective job search. These search methods generate the most offers per and the most acceptances per contact while having the highest acceptance rate per individual. On the other hand, the authors report that the public employment office generates the lowest acceptance rates of all job search channels. Keely and Robins (1985) had found a negative effect of the number of job search methods applied on the probability of gaining new employment. Unemployment benefits recipients were found to use more search methods but make fewer contacts and receive fewer job offers. Interestingly, the effect of getting an unemployment benefits is negative and significant for the public employment office route, implying that these job seekers are less likely to secure work through

this institution's help. However, the low-skilled job seekers appear to enter employment if they use Public employment office.

In the remaining bachelor thesis, I indirectly test these theories by comparing job search behavior and the probability of unemployed and employed job seekers entering a job by each type of job seeker using the quarterly LFS for Lithuania.

3. DATA DESCRIPTION

3.1 DATA CHARACTERISTICS

The main data source comes from the Labor Force Survey (LFS). The LFS is a quarterly representative survey of households living in Lithuania. In this thesis, I use all publicly available waves spanning from 2011 through 2019. The LFS provides detailed information on individual and household features, emphasizing labor market status and individual characteristics.

The LFS is especially suitable for my analysis as it allows me to characterize employed and unemployed individuals and their job search behavior. Therefore, I am able to investigate the job search not only of unemployed individuals, who are the ones typically studied in the literature, but also employed individuals. Besides, the LFS rotating panel (longitudinal) structure of data where people are questioned for fourth quarters: they are interviewed for two consecutive quarters, followed by two quarters break and after which they are again interviewed in the sample for two consecutive quarters. This longitudinal structure allows to track workers' overtime to investigate the returns of job search activities in terms of job finding probabilities.

Using the LFS, I classify employed and unemployed individuals along with their job search status. An individual is classified as unemployed if he/she "does not have a job but has actively looked for a work in the prior four weeks, and currently available to start working". Similarly, employed individuals are those of "age 15 and older, who have a job and get a salary in form of payment". In addition to individual characteristics, for employed individuals, I also observe job and employer information such as occupation, hours worked, firm size, economic activity, etc.

To study job search behavior, I rely on a battery of questions from the LFS that allows me to characterized job seekers among my selected individuals. In particular, job seekers are defined a respondent who fulfills the following criteria: (i) I use responses to question asking individuals whether they are looking for a job (this question is specially intended for the employed individuals who has searched for another job and have not informed authorities) ; (ii) the LFS asks whether, in the last four weeks, a respondent has taken active steps to find a job (regardless of employment status, it provides active job seekers, who would be able to start work in two weeks); and (iii) respondents have mentioned at least one method of job search (this criteria questions individual's motivation and effort exerted to find a new workplace).

The LFS has two crucial features that are important for my analyses. Firstly, it interviews job search to both employed and unemployed respondents, which allows comparing both groups of job seekers. Secondly, it has a rotating panel (longitudinal) structure of data where people are questioned for fourth quarters: they are interviewed for two consecutive quarters, followed by two quarters break and after which they are again interviewed in the sample for two consecutive quarters. It allows us to identify employed and unemployed job seekers who find a new job by the next quarter and even enables us to track labor status transition for up to six quarters and to analyze the characteristics of the position found.

An interesting feature of the LFS is that it allows me to investigate the returns of different search methods used by job seekers. In particular, the dataset allows to differentiate seven types of job search methods: Contacted public employment office to find work (public employment service), contacted private employment agency to find work (private employment service), applied to employers directly (direct approach), asked friends, relatives, trade unions (informal method, social network), inserted or answered advertisements in newspapers or journals (examination), studied advertisements in newspapers or journals (advertisements) and others method used (social media).

In addition to information related to job search, I have detailed information on individual characteristics such as age. For unemployed individuals, I can also observe whether they are getting additional training during the non-employment period, which I can use to evaluate whether training helps to escape unemployment faster. In the case of employed people, I observe job and employer information: Occupation, a field of economic activity, firm size, the year in which person started working for this employer, atypical work features, and the number of hours worked. Interestingly, the LFS also provides information on the reason for job search among employed. This variable allows me to characterize why workers decide to engage in on-the-job search, which is not typically found in the literature[2].

My estimation sample focuses on employed and unemployed individuals aged 15 to 64 between 2011 and 2019. Thus, inactive, children, retirees, self-employed, and students are excluded. From this sample, I remove respondents with missing essential information: the respondent is not applicable for the variable; the respondent does not know or has refused information for a particular variable; the respondent has changed his living address, he/she does not belong to the interviewed household and is not questioned for survey anymore. These restrictions yield a sample of around

[2] See Appendix 1 for detailed information on the variables.

66800 individuals observed over 268000 observations. From this dataset, I create two sub-samples based on employed and unemployed individuals. The sample of employed individuals contains 60000 workers observed over 180000 observations, whereas the unemployed sample includes 7400 individuals observed over 22000 observations.

3.2 DATA COMPARISON WITH NATIONAL STATISTICS

Table 1 Summary Statistics of aggregated data and Labor Force Survey data

Summary Statistics Labor Force Survey vs. Aggregated data from Statistics Lithuania			
Labor Force Status	LFS Labor Supplement		Statistics Lithuania data
	All years	Q4 2019	Q4 2019
Employment-population	68.6	75.6	72.9
Unemployment	9.7	6.0	6.5
Labor force participation	76.0	80.6	78.4
Inactive population	24.0	18.6	21.2
Demographics			
Male	48.0	48.5	48.3
With college degree	32.5	37.9	36.1
Aged 15-34	35.9	32.2	36.8
Aged 35-54	44.0	42.4	40.9
Aged 55+	20.0	25.4	22.5
Married	54.7	58.7	46.5
Migrants	0.56	0.86	2.2

Source: LFS Labor Supplement and Statistics Lithuania. Notes: The second column has pooled LFS sample across 2011 through 2019. Third and fourth columns depict numbers of fourth quarter of 2019. These samples are for all individuals aged 15 to 64. Numbers of first and second columns represent weighted part of population. The third column numbers represent aggregated percentages of population individuals of age 15 to 64 from Statistics Lithuania dataset. The numbers are depicted in percentage share.

Table 1 illustrates basic summary statistics for my analysis and compares the sample using the same quarter of data from the Statistics Lithuania dataset. The second column represents aggregated sample information for the whole sample period from 2011 to 2019. The second and fourth columns let me compare the LFS sample and the aggregated Statistics Lithuania sample. The

basic statistics between the two samples are roughly similar. The shares of age groups are almost identical. The picture looks quite different if I compare the percentage of a college degree in LFS and Statistics Lithuania shown in the sixth row. On average, over the sample period, 32.5% of individuals in the LFS labor supplement sample have a higher education level, while in statistics Lithuania data accounts for 36.1% of the population with academic education. It is around a 4% gap between these two samples. Annual high education graduates might explain this. As well, the LFS sample acquires four times lower immigrants' level in the population. It might be the case that immigrants are not so active or not responsive in the labor force survey. The unemployment rate in the LFS is higher than the statistics Lithuania by three percentage points. This difference might decrease the unemployment rate in this period and reach the lowest point in the 4th quarter of 2019. To sum up, everything that has been stated so far, the LFS sample perfectly mirrors Lithuania's demographic characteristics.

The third and fourth columns allow me to compare the LFS sample and Statistics Lithuania sample from the period of 2019 4th quarter and ensure that my LFS sample is representative. The demographic statistics across the two samples are similar, though the share of married is higher in the LFS sample (58.7% compared with 46.5%). It might be because the LFS focuses on households and include those who have a living arrangement, which defines individuals as a couple or have a civil partnership. While Statistics Lithuania aggregate sample from the person who has a legal marital status of marriage. As well, the share of individuals with a college degree is higher in the LFS sample (37.9% compared to 36.1%). The employment to population ratio (or employment rate) is slightly higher in the LFS sample (75.6% compared to 72.9%). The unemployment rate in Statistics Lithuania is higher than the LFS rate but does not statistically different (6.5% compared to 6.0 %). Overall, the LFS sample and Statistics Lithuania data are similar, and I can conclude that it is representative of portraying Lithuania's population characteristics.

The main takeaways from Table 1: (i) There are more employed than unemployed individuals in the LFS sample. The percentage share of employment rate reaches 68% than the unemployment rate is only around 10%; (ii) Individuals in the sample tend to be around middle age and well educated. The average age is about 35-54, and 36.5 percent have a college degree. Lithuania has one of the highest rates of college graduates in Europe, and it is experiencing a seismic demographic shift of aging population; (iii) The share of female outnumbers male population, which stands out in the EU; (iv) A substantial fraction of the sample is married; (v) There is a small share of migrants since Lithuania is not attractive as other EU countries. As well, this table allows me to create

a statistical Lithuanian individual portrait. It is most likely to be female, without a college education, age between 35-54, and married. She is most likely of Lithuanian nationality and employed.

4. JOB SEARCH IN THE DATA

4.1 PRELIMINARY EVIDENCE OF JOB SEARCH PROCESS

In this section, I provide descriptive evidence about job search in the Lithuanian labor market between 2011 and 2019 using the estimation sample described in Section 2. Firstly, I look at all labor market agents and find job seekers. I compare the job search behavior of employed, unemployed, and inactive individuals. Secondly, I document their job search strategies by looking at the job search methods used. Third, I report evidence on individual characteristics of job seekers in selected years to document cross-sectional and time heterogeneity across job seekers. Finally, I investigate a job search intensity and methods success statistics.

4.2 JOB SEARCH BEHAVIOR

I start providing evidence on the job search behavior of individuals according to their labor force status (Table 2), which is interpreted as an extensive margin of job search. By definition, all unemployed individuals are job seekers., i.e., 100% of unemployed have been actively searching for a job in the last four weeks. Only small fractions of other labor force statuses engage in the job search.

Table 2 Basic Job Search Statistics by Labor Force Status

	Employed	Unemployed	Inactive Labor Force
Percent that actively searched for work	1.7	100	2.1
Percent that actively searched and are available to work	0.84	100	2
Percent reporting no inactive search, but would take a job	0.02	0	5.8
Percent only searching for an additional work	16.2	-	-
Percent seeking similar work with better work condition	13.4	-	-
N	181419	18543	67282

Notes: Calculations come from period of the 2011-2019 waves of the LFS Labor supplement, for all individuals aged 15-64, by labor status.

Among the employed, around 2 percent can be classified as job seekers, but less than 1 percent report to have looked for a job in the last four weeks. Approximately 16 percent of those searching for a job reported looking for an additional job, with no intention of leaving their current one. Just over 13 percent of employed job seekers reported looking for a similar position with better working conditions along such as higher wages, working or travel time, and quality of work. However, only a tiny fraction of employed, around 0.02%, reported no active search or availability but would accept a job if offered.

My dataset also allows me to characterize the job search behavior of people categorizes as inactive according to official statistics. It suggests that there is a small fraction of inactive job seekers who actively search for a job and are available to start working in the next two weeks. Table 2 shows that this group of job seekers represents under 2 percentage points of those identified as out of the labor force according to the LFS definition. It might be the case that this group of job seekers are newly unemployed and have actively searched for a job for less than four weeks. This means that they are not categorized as unemployed individuals and attributed to out of labor group. Including these individuals in my job search calculation would increase the measured unemployment rate by 0.5 percentage points. Also, among the inactive labor force, around 5.8 percent reported that they are not actively searching for a job but would take one if offered.

4.3 JOB SEARCH METHODS

Table 3 The use of job search channels by Employed, Unemployed and Inactive individuals

Job search method type	Employed workers			Unemployed individuals	Inactive individuals
		Additional work	Similar job		
Public employment agency	38%	49%	19%	86%	75%
Private employment agency	5%	6%	6%	6%	3%
Employer directly	52%	59%	45%	55%	26%
Asked Friend, social network	71%	67%	73%	73%	46%
Inserted or answered advertisement	14%	11%	18%	10%	7%
Studied advertisement	77%	78%	83%	71%	54%
Other methods	59%	64%	55%	65%	55%
Average number of methods	3.2	3.3	3	4.7	2.9
N	3072	498	996	18543	1410

Note: LFS data

Now, I have a closer look at the use over the search channels. Table 3 provides raw evidence on job seekers' use of search methods according to their labor force status. It appears that advertisement study is the most frequently used search channel for all labor market status. However, employed, unemployed, and inactive job seekers differ in terms of the main methods of job search used. Unemployed individuals are much more likely than other job seekers groups to use public agency (86% compared to 75% of the inactive and 38% of the employed job seekers). This might arise because unemployed individuals need to be registered in a public employment agency to collect unemployment benefits. The second most popular method among unemployed is to ask friends and family, use their social network (73%). The third most used job search channel for unemployed individuals is to study advertisements in newspapers or journals (71%). These three methods are used by more than 70% of unemployed individuals.

The employed job seekers tend to use informal job search channels too (ask friends or family, use their social network, contact employer directly). Employed individuals seeking an additional job most often study advertisement, use their social network, or contact employer directly with percentages of 78%, 67%, and 59%, respectively. Employed job seekers who search for a similar job most likely to study advertisements, too, around 83 percentage points. The second most frequently used method is a social network by asking friends and family. This group of job seekers stands out from other labor market statuses in that they do not involve public employment agencies as much in their job search (only 19%).

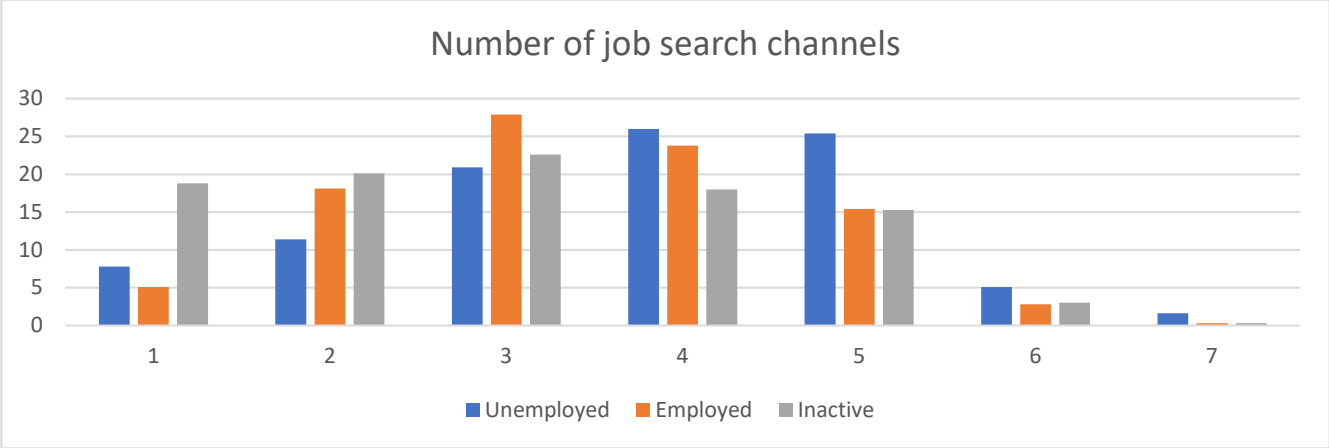
The descriptive evidence also indicates that between inactive job seekers, the most popular job search method is a public employment agency. The second most popular channel for this group is to use other methods along the lines of the internet or social media search. As might be expected, the least popular job search channel appears to be a private employment agency for all labor market groups. It might be explained that the private employment office is costly (it is not common to pay money to get a job in Lithuania). To conclude, the most popular search channels tend to be advertisement studies, social network, and employment agency; however, some of the employed job seekers sub-groups have their specialty.

4.4 JOB SEARCH EFFORT

In figure 1, I summarize the number of search channels used, which can be used to measure job search intensity or effort. Among the unemployed, most of the job seekers use between 3 and 5

search channels, being rarely that they will use more than 5. The employed job seekers most of the time in their job search use between 2 and 4; on rare occasions, they will invoke more than 4. Among the inactive, most of the job seekers use between 1 and 5, being rarely that they will use on more than 5. Notably, despite not significant differences in the distribution, the data suggests that unemployed individuals use on average more job search methods (5) relative to employed (3) or inactive (3) job seekers.

Figure 1 Distribution of Number of Job search Methods used in the Last Four weeks by LFS sample.



Note: Figure reports the histograms of the number of Job search used in the last four weeks. Calculations are for all individuals, who reported actively searching for work in the 2011-2019 Labor Force survey.

In Table 4, I present summary statistics for a range of relevant variables by job seeker status in selected years. This shows that the percentage share of employed job seekers decreased over the years from 2.8% in 2011 to 2% in 2015 and 0.98% in 2019[3]. This decrease over time can be driven by improving economic conditions, as 2011 is just the aftermath of the Great Recession, and job match quality can be low; thus, individuals were looking for a better job more often. The employed job seekers tend to be living in urban areas (62%); However, the level has been decreasing, and it is an almost equal proportion of employed job seekers in rural and urban regions. The next row displays the dynamics of employed job seekers who work in an atypical workplace along the lines with work at night, evenings, shifts, or weekends. Over the sample period, the percentage of employed job seekers, who work atypical shifts, ranges from 33.5% to 44.8%. It illustrates that atypical workers might have trouble finding a different job or not having an intention to job turnover. Table 4 also indicates that most often employed job seekers, on average, searched for a job for less than six months.

[3] See Appendix 2 for more information on new hires between employed and unemployed.

In terms of individual characteristics, Table 4 illustrates employed job seekers are more likely to be female (51% in 2011) and to be married (68% in 2011). Also, on average employed job seekers have a high level of education; for instance, in 2011, 39.7% of employed have ISED levels 4- equivalent to a higher education degree- or above.

Table 4 Basic demographic statistics of different labor market status: unemployed, employed, and inactive participation in job search

	Job seekers demographic statistics								
Labor Force Status	2011			2015			2019		
	unemployed	employed	inactive	unemployed	employed	inactive	unemployed	employed	inactive
Jobseekers	100	2.8	1.4	100	2	2.2	100	0.98	2.9
Demographics									
Urban	51.8	62	62.5	44.6	52.9	43.5	45.4	53.4	58.9
Atypical work	-	33.5	-	-	35.8	-	-	44.8	-
Previous work experience	88.6	-	87.2	91.2	-	86.2	91.9	-	89.5
Duration of job search (less than 6 months)	31.4	57.3	33.3	34.9	50	36.4	48	53.2	49.5
Males	49.9	48.3	45.4	53.4	48.1	44.6	56	49.2	45.8
College degree	19.4	39.7	5.9	16.4	43	9.9	18.4	44.6	10.1
Aged 15-34	34.3	28.7	58.9	32.5	29.8	54.1	27.7	29.6	49.8
Aged 35-54	49.7	57.3	17.1	50.5	52.1	19.2	44.9	47.9	20
Aged 55+	15.9	13.9	24	17.2	18.1	26.7	27.3	22.4	30.2
Married	55.6	68.3	27.2	41.6	65	29.1	42.3	64.2	32.7
Migrants	0.27	0.45	0.6	0.33	0.58	0.6	0.21	0.9	0.91

LFS Labor Supplement. Notes: The first subset has pooled LFS sample across 2011 The second subset has pooled LFS sample across 2015. The third subset has pooled LFS sample across 2019. These samples are for all job seekers aged 15 to 64. Numbers of first and second columns represent weighted part of population. The numbers are depicted in percentage share.

Table 4 also portrays unemployed job seekers' characteristics. Unemployed job seekers, on average live in rural regions (55% in 2019). However, the more significant proportion of unemployed job seeker, around 52%, in 2011 has lived in urban areas, but it has been decreasing since and reached 45.4% in 2019. The next row displays the dynamics of unemployed jobseekers who have had previous work experience. Around 90% of this group reported that they have participated in the labor market before. It means that about 10% of unemployed job seekers have participated in the labor market for the first time. Table 4 also indicates that unemployed job seekers have searched for a job for more than six months (69% in 2011). However, the share of unemployed job seekers, who searched for a job for less than six months, increased to 49% in 2019. In terms of personal characteristics, Table 4 illustrates that unemployed job seekers are more likely to male (56% in 2019) and to be single (58% in 2019). Also, on average unemployed individuals tend to have a lower level of education; for example, in 2019, only 18% of unemployed have had ISED levels 4- equivalent to a college degree or above. As well, unemployed job seekers tend to be middle-aged and getting older in the selected period.

With respect to inactive jobseekers' percentage share has been slightly increasing over the sample period from 1.4% in 2011 to 2.2% in 2015 and 2.9% in 2019. Similar to unemployed individuals, the inactive job seekers resident in urban areas (59% in 2019). The fifth row displays the dynamics of inactive job seekers who have previous work experience. Around 90% of this group individuals have prior work experience. It means that 10% of inactive job seekers are newcomers to the labor market. Table 4 also indicates that inactive job seekers on average searched for a job for more than six months (67% in 2011).

The duration of job search has decreased for inactive seekers and reached 50% in 2019. In terms of individual characteristics, inactive job seekers are more likely to females (55% in 2019) and to be single (68% in 2019). Also, on average inactive job seekers have a low level of education. For instance, in 2019 only 10% of inactive job seekers have ISED levels. Finally, the majority of inactive job seekers are aged 15-34 and are the youngest among all job seekers groups.

4.5 JOB SEARCH SUCCESS

Table 5 examines the success of the various job search channels by focusing on the employment status of individuals currently employed and unemployed at the following date of the interview. The first column of Table 5 gives the share of each category of employed individuals in a

given quarter who transitioned into a new job in the next quarter. Thus, for example, of the 24 employed job seekers using a private employment office at quarter t, around 149 (or 16.1%) were employed at a new job at the next quarter. Column 1 presents that employed job seekers who apply or insert an advertisement in a newspaper are most likely to be employed (21.2% are in work at the next wave), followed by job seekers studying advertisements in a newspaper (17.4%) those that directly approach the employer and who use friends and family (17.3%). The least successful search method as part of job search strategy in terms of new employment at the next date of interview is using the public employment office (11.4%) of those using this search channel are in new work at the following date. Also, it provides results of unemployed job seekers proportion that are employed at the sequential date of interview. The second column of Table 5 provides the share of each search category of unemployed who transitioned into employment in the subsequent quarter. Thus, for instance, of the 16988 unemployed individuals using a public employment office at t, some 2315 (or 13.6%) were reemployed at quarter t+1. Column 2 shows that unemployed individuals have equal possibilities with each job search method (All around 15 percentage points). However, I cannot conclude which of these search strategies are more successful than another since job seekers might use multiple search strategies or have different individual characteristics. This table allows me to evaluate whether some search strategies appear to work in raising transitions compared with the situation of no search channels.

Table 5 Employment probabilities at t+1 by job search channels and job search intensity at t

Employment probabilities at t+1 by job search method at t		
search method(t)	Employed t+1	Not employed t+1
Public employment agency	11.9	13.6
Private employment agency	16.1	15.6
Direct to employer	17.6	14.7
Friends and contacts	17.3	13.9
Apply or insert advertisement	21.2	15.9
Study advertisement	17.4	14.3
Other	16.9	14.9
Total	17.9	14.8

Note: LFS dataset.

Table 6 reports the employment probabilities by job search intensity and reveals the expected results- a positive relationship between the number of job search channels used by the unemployed and employed and the likelihood of entering a new job at the next interview date. Less than 33 % of employed job seekers who use one search method are subsequently at a new workplace, compared to

38% of those who use two ways, and then the probability starts to decrease, only 32% of employed job seekers find a job using 3 methods. Almost one quarter of the job seekers using all seven listed channels enter a new job at the following interview date. On the other hand, less than 22% of unemployed using one or two job search methods are subsequently employed, compared to 24% of those using three methods and 32% using five methods. Almost one-third of unemployed job seekers using all seven-job search channels are in work at the next interview date. These results are consistent with previous research (Gregg and Wandsworth, 1996) and suggest that a more significant investment in search intensity gives more information on existing job vacancies and provides a higher probability of receiving a reasonable job offer.

Table 6 Employment probabilities at t+1 by job search method at period t

Employment probabilities at t+1 by job search method at t		
search intensity(t)	Employed t+1	Not employed t+1
1	33.7	19
2	38.2	21.9
3	32.2	23.4
4	28.9	27.1
5	27.5	32.4
6	14.4	33.3
7	25.4	31.5

Note: LFS dataset.

5. ECONOMETRIC STRATEGY

My empirical analysis in this paper has three parts. First, I study who is searching for a new employment. Second, I investigate the determinants of job search behavior and consider how much do different individuals invest in their job search; what kind of job search methods they use. Third, I study the determinants of the successful job search strategy.

5.1 THEORETICAL BACKGROUND

Often, the number of job seekers in the employment and inactive labor force is not observable. Thus, most empirical studies estimate job seeker's functions using only the numbers of unemployed individuals as a proxy for total job search. However, this approach does not display the dynamics of other labor forces' participation. In this bachelor thesis, I investigate all three labor forces' behavior in the job search process.

Job search literature suggests that workers engaging in on-the-job search are in worse, less permanent jobs with lower benefits than those who do not engage in the job search (Pissarides, 1994). So, the differences among employed and unemployed job seekers do not merely reflect differences between employed and unemployed individuals in general.

Job search literature suggests that an individual's job strategy and intensity might vary according to the length of job search duration, either because the seeker changes their strategies as different search methods are exhaustive, or of disincentive effects. Search effort may decline if job seekers use their most favorable option at the beginning of the search. Other literature (Schmitt and Wadsworth, 1993) finds out that job search duration is a crucial determinant of job search channel choice. There is also a consistent finding of negative duration dependence, indicating that the probability of finding a job falls with the duration of the job search due to either scarring effects or unobserved heterogeneity (Boheim and Taylor, 2001). The local level of labor demand constrains the job seeker, and it might change job search behavior in response to various labor market conditions (Osberg, 1993). In depressed labor markets, for instance, more of an individual's contacts may be unemployed or working in a firm that is not recruiting but laying off workers. According to McGregor's (1983) research, higher unemployment rates increase search through advertisements in newspapers and employment offices, while job seekers in low unemployment regions tend to use their

family and contacts. The author discusses that information about new jobs is more likely originated from employed workers, and thus there will be less information on available jobs in high unemployed areas. To capture the impact of previous employment experience, I include a variable ("Previous work experience") measuring the proportion of prior the interview at which each sample member has been unemployed. Other literature displays that employers may use an individual's last work record as an indicator of productivity or previous unemployment. I include regions of residency to capture any difference between urban and rural areas in job search strategy choice and success.

The theoretical models infer that ceteris paribus increase of search intensity and effort should increase the arrival rate of job offers. If the reservation wage remains unchanged, the consequence will be a shorter search duration. On the other hand, if job seeker takes as much time for search as before, the reservation price has intension increase too. Job seekers are likely to find more, and better job matches. Then the outcome of a higher level of search effort will have shorter job search duration and better match quality. Similar job search mechanics should follow the choice of search methods. If the individual chooses a more efficient search channel, which gives access to a higher number of jobs, the job seeker might expect shorter search duration and better-quality matches.

A further insight suggests that individual's choice of search channels and effort have their own search costs. It might be that search costs vary for different search methods and individuals. Asking friends and family supposed to be related to low search costs, as well as using the public employment office, which provides service free of charge. More costly in terms of time and money search channels includes direct application to the employer and studying newspaper advertisement. Search costs will further differ by individual characteristics. For instance, a highly qualified professional will have fewer benefits of the use the public employment office service since the arrival rate of acceptable job offers are low. On the other hand, a low qualification worker will not consult a specialist of a private employment agency. In my sample search effort, intensity and job search methods are not randomly distributed between job seekers, but they are endogenously determined by personal characteristics. This means that the parameter estimates for the different channels in the equation can be interpreted as the efficiency of the search methods.

The vector of explanatory variables in the analysis covers a range of individual, household, and market labor characteristics. An individual's age is likely to affect their number of contacts in the labor market, their attitude towards unpredicted risk, their financial and personal responsibilities, and their savings. Labor market mobility and flexibility are known to be higher for younger people, whose

spells of unemployment are less likely to have a negative effect on employment (Booth and Taylor 2000). Marital status, spouse's employment status, education, and the number of children is likely to determine level opportunities in the labor market, job search intensity, and efficiency. More educated individuals may have access to a broader labor market and respond to national advertisements or international job offers. In contrast, the less educated individuals might have fewer options and search more locally through contacts and a local public employment agency. There is a social structure in which highly skilled professionals are more likely to communicate and associate with other productive workers than with less experienced individuals. Demographic and family variables are also expected to affect search intensity and strategy, and therefore determine job offer arrival.

Another variable will influence the choice of search strategy and effort. Wanberg (1999) suggests that commitment to the labor market has a direct impact on job search effort. I investigate this theory through a variable measuring the number of spells of economic inactivity an individual has had in the six months before being observed as a job seeker. This might determine search intensity and likely to affect job search success.

My specification of the job search success is empirically driven. I include a wide range of individual characteristics and demographic statistics, workplace and job characteristics that have a significant impact on the job search success. These include age, sex, marital status, employment status, region of residency, job type, and education.

5.2 ECONOMETRIC MODEL

First, I form an equation to find out who searches for a job. I concentrate on employed and inactive job seekers since all unemployed individuals are identified as job seekers. The probability of being a job seeker at the date of interview is described by a binary variable, taking the value 1 if the individual search for employment at the date of the interview, and 0 otherwise. This variable is modeled as a function of job seekers, holding a range of other characteristics constant. I estimate a OLS model conditional on being employed or inactive, where the dependent variable S_i equals 1 if the individual is searching for a job (i) and 0 if not searching. This model is specified as:

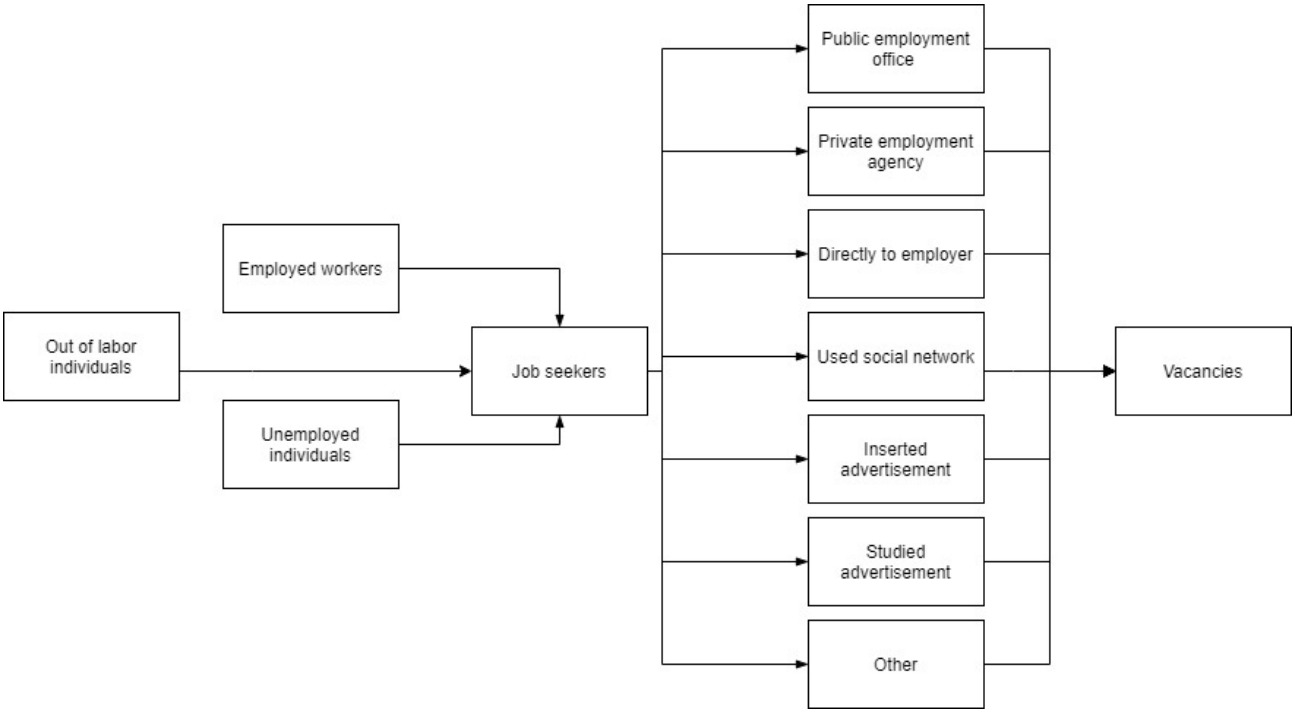
$$S_i = \beta_i * X_i + q_i \ (1)$$

Where S_i denotes the observable propensity for the employed or inactive person seek for a new job. Explanatory variables include individual and workplace characteristics (X_i). Individual

characteristics include age, sex, marital status, household residency. Workplace characteristics include employment type, firm size, atypical job shifts. The q_i is the individual specific error.

Figure 2 gives a graphic illustration of a view of the market per job type. The number of job seekers operating in each market is generated by the search process at the individual level. On the supply side of the labor market, an individual decides whether to search, and if so, which search channels to use. The labor market is divided into different submarkets, stratified according to job types and search channels. In these submarkets, job seekers try to make a contact with an employer and given that connection they may decide whether to form a match. As individuals move on to other jobs search process are impacted and of the current individual situation and search strategy.

Figure 2 Search of Job seekers



Second, I create an equation for individual choosing a specific search method M_i. The LFS and I distinguish seven job search channels: Public employment office, private employment agency, direct approach to employer, friends and family contact, insert or answer an advertisement in a newspaper, study of an advertisement and other search methods[4]. The number of successful jobs seek through each method depends on the number of job seekers and vacancies, as well as on the speed at

[4] For job seekers, social network methods include checking friends and relatives. Other methods are a collection of remaining categories such as seasonal employment agencies, social media, and the internet.

which potential contact between employer and job seeker. I observe each individual i=1, 2, …., N at periods t=1,2,3,4 and identify which job search channel is being used at each date of the interview. A job seeker's propensity to use a specific search method can be expressed:

$$M_i = \alpha_M X_{M,i} + e_{M,i} \qquad (2)$$

Where M_i=1 if individual use a specific search method

0 otherwise

This M equation is 1 x 7 vector of zeros and a one in the j-th component for using the specific channel; α_M is a parameter matrix, the j-th row of which corresponds to effect of the explanatory variables $X_{M,i}$ on choosing a specific search channel, and $e_{M,i}$ is the individual specific error. This approach allows me to use panel data attributes and control individual specific time-invariant heterogeneity, which is important given that individuals differ in their observed search intensity.

Similarly, I investigate the effects of factors, influencing individuals $X_{I,i}$ on search intensity I_i, calculated by the number of search channels used, and estimated by equation:

$$I_i = \beta_I X_{I,i} + e_{I,i} \qquad (3)$$

The error term is denoted by $e_{I,i}$. The determinants of job search effort are investigated using an OLS model. In this model, job search intensity can take a value between 1 and 7, depending on the observed number of search channels used at the date of interview, and is modelled as a function of various individual, household and labor market characteristics.

The third part of the analysis investigates the success of job search. I want to find out whether the match of search outcomes differ by the level of job search effort and by the successful search methods. I measure search outcomes in terms of job search success. I do not investigate starting wages, job durations and search spell since the information in the data is too limited. I use parametric analysis to compare job seekers across successful search.

$$Y_{it} = \beta_Y X_{Y,it} + \mu\, I_{it-1} + e_{Y,i} \qquad (4)$$

$$Y_{it} = \beta_Y X_{Y,i} + \alpha\, M_{it-1} + e_{Y,i} \qquad (5)$$

Where Y_{it} denotes the binary outcome variable, 1 if individual find a job and 0 otherwise, $X_{Y,it}$ is a set of controls and β_Y is the corresponding parameter vector. The effect of search intensity

I_{it-1} and the search channel M_{it-1} measured by the parameters μ and α. The error term is denoted by $e_{Y,i}$.

As well, I estimate whether employed and unemployed job seekers have a different probability of finding a new job. Also, I ascertain whether the returns of individual characteristics, job search channels and job search intensity differ for unemployed and employed job seekers. For instance, I might expect some types of job search methods to be more successful for employed rather than unemployed, while other channels to be more successful for unemployed job seekers. Hence, I model the probability that the job seeker finds a job by the next period separately for employed and unemployed job seeker, via the dependent variables E_{it} and U_{it} respectively:

$$E_{it} = \beta_E X_{E,it} + \mu\, I_{it-1} + e_{E,i} \quad (6)$$

$$E_{it} = \beta_E X_{E,i} + \alpha\, M_{it-1} + e_{E,i} \quad (7)$$

$$U_{it} = \beta_U X_{U,it} + \mu\, I_{it-1} + e_{U,i} \quad (8)$$

$$U_{it} = \beta_U X_{U,i} + \alpha\, M_{it-1} + e_{U,i} \quad (9)$$

Where $e_{E,i}$ and $e_{U,i}$ error terms are normally distributed, E_{it} and U_{it} are defined analogously to Y_{it} . I estimate these models using OLS regression.

The rationale for using successful job finding as an outcome measure is that this is the most immediate outcome of the search and most likely to be directly influenced by the search strategy. One might argue whether there is a long-term effect on successful job findings like employment stability. As the individual move to other job, new search processes are started, and the impact of the current search might be weakened.

6. RESULTS

I present the estimates from my models from Table 7 to Table 13. I initially focus discussion on the job search behavior- intensity and strategy. Furthermore, I analyze the probability of finding a job for employed and unemployed job seekers. I first discuss the determinants of job search among employed and inactive individuals.

6.1 JOB SEARCH FOR EMPLOYED AND INACTIVE

Table 7 presents the results from the OLS model estimating the determinants of job search for employed and inactive job seekers. Subsection 1 of Table 7 gives the probability of employed individuals searching for the job given the personal and job-related characteristics. It shows that married employed individuals are more likely than those single individuals to search for a new job (by 1 percentage point). It might be a case that it is usually less costly if a family, as opposed to an individual, has to search for a job and his/her partner can maintain a family. Gender has been found to have no significant differences in job-to-job mobility. The age estimates show that employed individuals aged under 54 are more likely than those aged 55 and over to participate in the labor market as job seekers (by 2 percentage points). The main reason for this observation might be that the available time to amortize the costs associated with new job search diminishes with age and make a job change less attractive for the older generation. The urban residence is less likely than those living in rural areas to be searching for a job. Individuals working in big firms with 50 and more workers are less likely to be searching for a job. It may portray that bigger firms provide better conditions for their employees. Finally, employees working on atypical shifts may have influence to start looking for another job. Atypical workers might have an intention to switch jobs to normal shifts or, however, these jobs, on average, have higher wages than normal.

The second set of estimates depict that inactive individuals under 55, and particularly those aged under 35, are more likely than those aged 55 and over to seek employment (by 3-4 percentage points). Younger individuals are more active in the labor market. Out of the labor force having higher education degrees are more likely than those less educated to participate in the labor market as job seekers (by 1 percentage point). This group of people may be graduates from higher education institutions and just started to participate in the labor market. A positive relationship emerges between seeking a job and prior work experience- individuals with more recent employment experience have

a higher probability of searching for a job. Human capital theory predicts that the duration of job search will have a negative consequence for job search among inactive job seekers.

Table 7 OLS model estimates for employed and inactive job seekers

	Job search for employed			**Job search for inactive**		
Predictors	*Estimates*	*Standard Error*	*p*	*Estimates*	*Standard Error*	*p*
Married	0.01	0.00	**<0.001**	-0.01	0.00	**<0.001**
Male	0.00	0.00	**0.001**	-0.00	0.00	**<0.001**
Aged 15-34	0.02	0.00	**<0.001**	0.03	0.00	**<0.001**
Aged 34-54	0.02	0.00	**<0.001**	0.04	0.00	**<0.001**
Education: high	0.00	0.00	0.612	0.01	0.00	**0.001**
Atypical job	0.00	0.00	**<0.001**			
Urban residency	-0.00	0.00	**0.045**	-0.00	0.00	**<0.001**
Firm has more than 50 employees	-0.01	0.00	**<0.001**			
Working since 2010s	0.00	0.00	**<0.001**			
experience				0.03	0.00	**<0.001**
Observations	181419			67282		
R^2 / R^2 adjusted	0.019 / 0.019			0.045 / 0.045		

Note: LFS sample. Dependent variable is binary, =1 if individual search for a job and 0 otherwise.

6.2 JOB SEARCH CHANNEL

The central part of the research concerns the search strategy. Out of an extensive list of possible job search methods, the job seekers select methods they had used during a job search. I distinguish seven types of job search methods: Contacted public employment office, contacted private employment agency, applied to the employer directly, asking friends or relatives, inserted or answered advertisements in newspapers, studied advertisements in newspapers, and others method used. Table 8 presents the results from the OLS model estimating the determinants of the choice of job search channels. As discussed previously, selection into this sample requires an individual to be a job seeker at the interview date.

Table 8 OLS estimates for choice of search methods.

	Public employment agency			**Private employment agency**			**Direct approach**		
Predictors	*Estimates*	*Standard. Error*	*p*	*Estimates*	*Standard. Error*	*p*	*Estimates*	*Standard. Error*	*p*
Married	-0.01	0.01	**0.041**	0.00	0.00	0.856	-0.03	0.01	**<0.001**
Male	-0.05	0.01	**<0.001**	0.01	0.00	**<0.001**	0.09	0.01	**<0.001**
Aged 15-34	0.74	0.01	**<0.001**	0.04	0.01	**<0.001**	0.25	0.02	**<0.001**
Aged 34-54	0.80	0.01	**<0.001**	0.02	0.01	**0.022**	0.24	0.02	**<0.001**
Aged 55+	0.81	0.02	**<0.001**	0.02	0.01	**0.027**	0.22	0.02	**<0.001**
Education: high	-0.08	0.01	**<0.001**	0.05	0.00	**<0.001**	0.05	0.01	**<0.001**
experience	0.05	0.01	**<0.001**	-0.01	0.01	0.199	0.00	0.01	0.818
Urban residency	-0.03	0.00	**<0.001**	0.01	0.00	**0.001**	0.02	0.01	**<0.001**
Employed	-0.33	0.02	**<0.001**	-0.00	0.01	0.743	0.25	0.02	**<0.001**
Unemployed	0.11	0.01	**<0.001**	0.02	0.01	**<0.001**	0.28	0.01	**<0.001**
Atypical job	0.04	0.01	**<0.001**	0.01	0.00	0.077	-0.01	0.01	0.579
Search for less than 6 months	-0.08	0.01	**<0.001**	-0.01	0.00	**0.016**	-0.06	0.01	**<0.001**
Observations	23025			23025			23025		
R^2 / R^2adjusted	0.830 / 0.830			0.065 / 0.065			0.544 / 0.543		

Note: LFS. Dependent variable is binary, =1 if stated job search method is used and 0 otherwise. It also includes control variables for region of residency, age dummies.

The first set of estimates show that unmarried individuals are more likely than married persons to use the channel of Public employment office (by 1 percentage point). Job seeker females are more

likely than males to use public unemployment office (by 5 percentage points). Individuals aged under 35 are less likely than those aged 35 and over to use Public employment office services (by 6-7 percentage points). The individuals with higher education degrees are less likely than those with lower education level to use this method of job search all things equal (by 8 percentage points in the OLS model). Highly educated and qualified individuals may use a more proactive approach in job search and offer their skills directly to a potential employer than respond to available opportunities at public employment office job list. Having prior working experience is associated with a higher probability of applying to a job through public unemployment office (by about 5 percentage points). A negative relationship emerges between using a public employment agency service and the employment status- an individual who conducts a search on the job is less likely to contact public unemployment agency, while those with more recent unemployment experience have a higher probability of using this search channel. An inverse relationship might be observed between the probability of entering a job through public employment office application and the elapsed duration of the unemployment spell. This channel of job search is less likely among individuals who have been unemployed for six months and longer periods. This means that either job seekers use public unemployment early in the job search process, it might be a case of unemployment benefits, or that individuals who use this search method find a job quickly.

The second set of estimates show that using a private unemployment agency is more prevalent among the young, keeping all things equal. Individuals aged under 35 are 2 percentage points more likely than other age groups to report using a private employment agency as part of their job search strategy. The probability of using a private job agency declines with the elapsed duration of the unemployment spell and is higher for educated individuals. The latter reflects a visible commitment to finding a job.

The third set of estimates suggest that direct approach to employer is less likely to be used by married individuals than those who are single, reducing the probability by 3 percentage points. Jobseeker men are more likely than women to apply directly to firms (by 9 percentage points. This may have to do with the difference in job-related contacts between sexes. Also, these estimates show that individuals aged under 55, and particularly those aged under 35 are more likely than those aged 55 and over to apply directly to employers (by 2-4 percentage points). Well-educated job seekers have a higher probability of contacting the employer directly than those holding lower education (by 5 percentage points). Being unemployed or employed is associated with a significantly higher probability of applying directly to the employer. A negative relationship can be observed between the

successful job finding and the duration of the job search. It suggests that job seekers have to us longer than six months.

Table 9 (Table 8 Cont.) OLS estimates for choice of search methods.

	Friends and Contacts			**Inserted or answered Advertisement**		
Predictors	*Estimates*	*Standard. Error*	*p*	*Estimates*	*Standard. Error*	*p*
Married	-0.01	0.01	0.364	-0.00	0.01	0.473
Male	0.02	0.01	**0.008**	0.01	0.00	0.065
Aged 15-34	0.46	0.02	**<0.001**	0.07	0.01	**<0.001**
Aged 34-54	0.41	0.02	**<0.001**	0.01	0.01	0.263
Aged 55+	0.40	0.02	**<0.001**	-0.00	0.01	0.893
Education: high	0.01	0.01	0.282	0.11	0.01	**<0.001**
experience	0.00	0.01	0.803	0.00	0.01	0.919
Urban residency	0.11	0.01	**<0.001**	0.06	0.00	**<0.001**
Employed	0.26	0.02	**<0.001**	0.06	0.01	**<0.001**
Unemployed	0.28	0.01	**<0.001**	0.03	0.01	**<0.001**
Atypical job	0.02	0.01	**0.047**	-0.01	0.01	**0.048**
Search for less than 6 months	-0.06	0.01	**<0.001**	-0.01	0.00	**0.042**
Observations	23025			23025		
R^2 / R^2adjusted	0.724 / 0.724			0.140 / 0.140		

Note: LFS. Dependent variable is binary, =1 if stated job search method is used and 0 otherwise. It also includes control variables for region of residency, age dummies.

The fourth set of estimates (in Table 9) show that younger job seekers aged 15-34 are more likely than their older peers to use informal networks as part of their job search strategy (by 5-6 percentage points). Job seekers from urban regions are more likely to enter jobs than individuals from more rural regions (by 11 percentage points). The job search behavior of job seekers living in urban areas of Vilnius and Kaunas differs from the behavior of workers living elsewhere in Lithuania. It

may be the case since cities are more connected and operate within a geographically larger labor market. Job seekers from urban areas might be less reliant on localized informal information networks for looking for a job.

The next set of estimates (in Table 9) show that job seekers aged 15-34 are more likely than individual over 35 to reply to an advertisement in the newspaper (by 6-7 percentage point). As well, the highly more educated job seekers are more likely to use this search method as part of their search strategy. Job seekers from urban areas are more likely than those who live in rural areas to use this method as well (by 6 percentage points). Cities often have higher density of employers in one area. So, it is relatively cheaper for urban job seeker to use advertisement in newspaper and find a potential employer.

Table 10 (Table 8 Cont.) OLS estimates for choice of search methods.

	Studied advertisement			**Other Channels**		
Predictors	*Estimates*	*Standard. Error*	*p*	*Estimates*	*Standard. Error*	*p*
Married	-0.04	0.01	**<0.001**	0.00	0.01	0.582
Male	-0.00	0.01	0.870	-0.00	0.01	0.658
Aged 15-34	0.60	0.02	**<0.001**	0.51	0.02	**<0.001**
Aged 34-54	0.54	0.02	**<0.001**	0.49	0.02	**<0.001**
Aged 55+	0.51	0.02	**<0.001**	0.52	0.02	**<0.001**
Education: high	0.12	0.01	**<0.001**	0.12	0.01	**<0.001**
experience	-0.01	0.01	0.327	0.01	0.01	0.466
Urban residency	0.00	0.01	0.628	0.05	0.01	**<0.001**
Employed	0.18	0.02	**<0.001**	0.01	0.02	0.681
Unemployed	0.17	0.01	**<0.001**	0.10	0.01	**<0.001**
Atypical job	0.01	0.01	0.120	0.04	0.01	**<0.001**
Search for less than 6 months	-0.01	0.01	0.370	-0.00	0.01	0.721
Observations	23025			23025		
R^2 / R^2adjusted	0.717 / 0.717			0.645 / 0.645		

Note: LFS. Dependent variable is binary, =1 if stated job search method is used and 0 otherwise. It also includes control variables for region of residency, age dummies.

The sixth set (in Table 10) of estimates suggest that single job seekers are more likely than married individuals to study advertisement in the newspaper (by 4 percentage points). Equally females and males are likely to use this search channel, although the coefficient is statistically insignificant. Job seekers aged between 15-34 are more likely than those 35 and over to study advertisement in newspapers (by 6-9 percentage points). Job seekers with higher education 12 percentage points more likely to study advertisements than those with lower qualifications. Employed and unemployed job seekers are 18 and 17 percentage points respectively more likely to analyze job advertisement in newspapers than inactive job seekers.

The last set of estimates (in Table 10) show that job seekers aged over 55 are more likely than those aged 54 and under to use other methods (by 2-3 percentage points). Marital status and sex do not affect the probability of using these other methods in the job search process. Residents of a city also are more likely to use other channels in the job search process. Living in the city is often taken as a proxy for the density of employers in one's region. For persons living in rural areas, this means a higher cost of informal job search process. On the other hand, this search channel might be more informal in urban areas since there is more anonymity. In comparison to unemployed job seekers and job-to-job movers, unemployed individuals are more likely to search for jobs through other not usual methods. It also appears that workers at atypical workplace are more likely than those working in normal conditions at search process to use this method.

6.3 JOB SEARCH INTENSITY

The results of the OLS model estimates for job search intensity[5], measured by the number of search methods used, are shown in table 11. This table reveals the relationship between age groups and search effort, keeping all things equal. I might expect that older job seekers' search effort be lower given their shorter activity in the future labor market and therefore to search less intensely. Although the coefficients on the age group variables are consistent with this theory, the se numbers are not statistically significant from zero. Job search effort increases with education and the coefficient of higher education is statistically significant. This relationship is consistent in the previous research (Blau and Robins 1990.). Unemployment devastates skilled individuals of their reservation wages and may also depreciate their human capital. Thus the highly educated job seekers have bigger incentives

[5] It is an approximation for search intensity. It is possible that individual who uses one search method to searching more intensively for work than other individual suing four or five channels. Unfortunately, the LFS data does not provide information on the hours spent searching.

to find a job rapidly and to adopt a greater search intensity than less educated. Different qualification individuals may also have to search in different labor markets, which could determine their level of search intensity. An inverse relationship emerges between the number of search channels used and elapsed unemployment spell. Longer the unemployment duration the less intensively the job seeker searches. It could be a disincentive effect, with job seekers that have been unemployed for a long period. As well, it may be caused by job seekers exhausting search methods as their long-term unemployment. Job search intensity is also related to the area of residency- in urban areas with higher competition, job seekers search for work more intensely. Alternatively, the job seekers in the cities have a bigger variety of search channels than those in rural regions. Note that married job seekers are less likely to intesively search for work than single individuals. It might be the case, that those individuals have personal responsibilities and have less time for job search.

Table 11 OLS estimates for job search intensity.

	JOB SEARCH INTENSITY		
Predictors	*Estimates*	*Standard. Error*	*p*
Married	-0.09	0.03	**0.001**
Male	0.07	0.02	**0.001**
Aged 15-34	0.20	0.04	**<0.001**
Aged 34-54	0.04	0.03	0.142
Education: high	0.37	0.03	**<0.001**
experience	0.04	0.04	0.324
Urban residency	0.23	0.02	**<0.001**
Employed	2.91	0.04	**<0.001**
Unemployed	3.48	0.05	**<0.001**
Inactive	2.47	0.06	**<0.001**
Atypical job	0.10	0.03	**<0.001**
Search for less than 6 months	-0.23	0.02	**<0.001**
Observations	23025		
R^2 / R^2 adjusted	0.856 / 0.856		

Note: LFS. Dependent variable is the number of job search methods used.

6.4 JOB SEARCH SUCCESS

The results from the OLS model estimating the probability of new employment at period t+1 given that an individual has been searching for a job at period t are presented in Table 12 and Table 13. Column 1 of Table 12 shows the results from including the specification of a binary variable whether the job seeker found a new job, while columns 2 and 3 present the results estimated separately for employed and unemployed job seekers, respectively, including determinants of job search methods. I show the estimated coefficients, which indicate the change in the probability of successful job search associated with one unit increase in the explanatory variable. Table 13 presents the results in the same manner, only that it also includes the search intensity. The central part of my research concerns the search process, which leads to a successful job match in Lithuania. Job seekers report job search methods and intensity that they have used during search.

Table 12 shows that a relationship of interest emerge from my analyses. Married job seekers are significantly less likely than single to be employed in the subsequent date of interview (by 3 percentage points). This may indicate that job seekers with family search for a new job in a smaller geographical area and thus reduce the likelihood of entering a new job. The likelihood of being employed at period t+1 given job search at period t increases by being a male (by 2 percentage points). Job seekers aged between 15-34 are more likely than those aged 35 and above to be in employment at the subsequent interview date (by 4-9 percentage points). Also, the probability of being employed at period t+1 given the fact of job search at period t increases with education. Those individuals with higher education diplomas are about 3 percentage points more likely to be employed at the subsequent interview period than those with lower education levels. This relationship between education and employment is frequently found in research. The size of this effect is more significant among the unemployed job seekers, indicating that education is an essential driver of job search success among these groups. For instance, having a lower education level reduces the probability of finding a job by 4 percentage points for unemployed individuals relative to having a college degree. This educational difference may be caused to more highly educated job seekers having a more extensive range of jobs to which they can apply and search in the broader labor market. In contrast, education level has no effect on the probability of successfully entering a new job for employed job seekers- the estimated coefficient is not statistically significant. Becker (1993) reports an inverse relationship between education level and job search persistence. This might be because more qualified job seekers are more

attractive to potential employers, or they might search more effectively than less qualified job seekers. Job seekers with prior work experience are significantly more likely to be employed than those who are new in the labor market. Lack of previous work experience may reduce search efficiency or signal lower productivity to employers and thus lower job offer arrival and retention rates.

Table 12 OLS model estimates for job search success on search methods

	Job Search for job seekers			**Successful job search for employed**			**Successful job search for unemployed**		
Predictors	*Estimates*	*Standard. Error*	*p*	*Estimates*	*Standard. Error*	*p*	*Estimates*	*Standard. Error*	*p*
Married	-0.03	0.01	**<0.001**	-0.03	0.02	0.182	-0.03	0.01	**<0.001**
Male	0.02	0.00	**<0.001**	0.02	0.01	0.196	0.02	0.01	**<0.001**
Aged 15-34	0.22	0.02	**<0.001**	0.18	0.03	**<0.001**	0.12	0.01	**<0.001**
Aged 34-54	0.18	0.02	**<0.001**	0.16	0.02	**<0.001**	0.08	0.01	**<0.001**
Aged 55+	0.13	0.02	**<0.001**	0.11	0.03	**<0.001**	0.03	0.01	0.058
Education: high	0.03	0.01	**<0.001**	0.00	0.02	0.477	0.04	0.01	**<0.001**
Experience	0.04	0.01	**0.001**				0.03	0.01	**0.002**
Urban residency	0.01	0.00	0.168	0.02	0.01	0.183	0.01	0.01	0.098
Employed	0.05	0.02	**0.001**						
Unemployed	-0.09	0.01	**<0.001**						
Atypical job	-0.00	0.01	0.955	-0.00	0.01	0.832			
Public employment office	-0.03	0.01	**<0.001**	-0.06	0.02	**<0.001**	-0.02	0.01	**0.003**
Private employment agency	0.00	0.01	0.954	-0.01	0.03	0.693	-0.00	0.01	0.887

Direct to employer	0.03	0.01	**0.005**	0.03	0.01	0.066	0.02	0.01	**<0.001**
Friends and Family	-0.02	0.01	**0.003**	-0.01	0.02	0.663	-0.02	0.01	**0.001**
Answered or inserted advertisement	0.01	0.01	0.415	0.02	0.02	0.323	0.01	0.01	0.537
Studied advertisement	-0.01	0.01	0.130	-0.01	0.02	0.626	-0.01	0.01	0.322
Other channels	0.02	0.01	**<0.001**	0.00	0.01	0.889	0.02	0.01	**<0.001**
Search for less than 6 months	0.10	0.00	**<0.001**	0.08	0.01	**<0.001**	0.10	0.01	**<0.001**
Observations	23025			3072			18543		
R^2 / R^2adjusted	0.183 / 0.182			0.202 / 0.198			0.172 / 0.171		

Note: Dependent variable=1 if job seeker at period t being employed at the subsequent date of interview, and =0 otherwise.

My results from Table 12 show that applying directly to a potential employer increases the likelihood of being successfully employed at the subsequent date of interview by 3 percentage point. This means that searching for a job by direct application channel has a positive impact on an individual's medium-term employment prospects. Weber (2006), and Addison and Portugal (2002) also report a positive effect of direct contact on employment probability. Using informal networks, friends, and family, and public employment agency have negative, although more modest and statistically significant impacts. Replying or inserting an advertisement in a newspaper also has a positive, although more modest and statistically insignificant impact. Studying advertisement in the newspaper, however, reduce the probability of being employed at period t+1, although these effects are not statistically significant. The finding that unemployment offices use is not an effective job search channel is consistent with previous research. For instance, Wielgosz and Carpenter (1987) using USA data, state that job search methods are associated with significantly shorter durations of the search when compared to the public employment office service. Osberg (1993) reports a negative relationship between the public employment agency use and the probability of entering a new job in Canada. However, Gregg and Wadsworth (1996) using British data, report that job agency services

are associated with a higher-than-average probability of successfully finding a job. These differences in research papers are not inconsistent and might be explained by different time periods. The successful job finding in Gregg and Wadsworth's paper is the study of the probability of employment across three periods while my dependent variable is the probability of being employed in three months or half a year in the future. Combining these results suggests that although unemployment agencies may increase the short-run probability of job finding, however, individuals are not more likely to find themselves in employment soon. It means that either the jobs seekers find through unemployment agencies are of low quality with relatively high rates of leaving, or that public/ private unemployment agencies are poor at matching job seekers with suitable jobs.

The third specification (in Table 12) of unemployment spell is significantly influencing the probability of entering a job. The probability falls with elapsed job search spell, indicating negative duration dependency. Job seekers, who search for work for less than 6 months, are more likely than those long-term job seekers who search for work for more than 6 months to be employed in the next period of the interview. This finding is common in the labor economics literature (Gregg and Wadsworth, 1996; Boheim and Taylor, 2001; Addison and Portugal, 2002). This could be reflecting a disincentive effect; the relatively long-term job search discourages from looking for work-intensive as before or have a scarring effect. Employers might be less willing to employ job seekers who have been unemployed or searched for work for a long period of time. Alternatively, the probability of being hired at the subsequent period of interview falls with recent unemployment experience. As well, this could be a scarring effect- employers might use recent unemployment history as a screening tool, human capital and kills might depreciate in a period of unemployment. Unemployed job seekers may accept poor quality works which have high rates of job exits.

The results of Table 13 present the fourth specification and suggests that job search effort, measured by the number of search channels used, statistically insignificant and has no effect on the probability of employment at the subsequent date of interview, holding everything else constant. Perhaps search intensity variable does not portray the search efficiency correctly because some people can put more effort in one search method or use it more often than other individuals. This is inconsistent with previous studies, which implies that job search intensity and the probability of finding a job have a positive relationship (Gregg and Wadsworth, 1996). A comparison of the likelihoods of the two specifications suggests that the job search methods used are more informative than an aggregation.

I find that employed job seekers have a higher probability of finding a good job than unemployed. This difference between employed and unemployed job seekers is persistence when controlling for a range of individual characteristics and search methods.

Table 13 OLS estimates for job search success on search intensity

	Job Search for job seekers			**Successful job search for employed**			**Successful job search for unemployed**		
Predictors	*Estimates*	*Standard. Error*	*p*	*Estimates*	*Standard. Error*	*p*	*Estimates*	*Standard. Error*	*p*
Married	-0.03	0.01	<**0.001**	-0.03	0.02	0.155	-0.03	0.01	<**0.001**
Male	0.02	0.00	<**0.001**	0.02	0.01	0.129	0.02	0.01	<**0.001**
Aged 15-34	0.20	0.01	<**0.001**	0.16	0.03	<**0.001**	0.10	0.01	<**0.001**
Aged 34-54	0.15	0.01	<**0.001**	0.13	0.02	<**0.001**	0.05	0.01	<**0.001**
Aged 55+	0.10	0.02	<**0.001**	0.08	0.03	**0.003**	0.01	0.01	0.626
Education: high	0.04	0.01	<**0.001**	0.00	0.02	0.741	0.04	0.01	<**0.001**
Experience	0.03	0.01	**0.001**				0.03	0.01	**0.002**
Urban residency	0.01	0.00	0.122	0.03	0.01	**0.037**	0.01	0.01	0.109
Atypical job	-0.00	0.01	0.848	-0.00	0.01	0.758			
Employed	0.05	0.02	**0.003**						
Unemployed	-0.09	0.01	<**0.001**						
Search intensity	0.00	0.00	0.985	-0.01	0.00	0.295	0.00	0.00	0.200
Search for less than 6 months	0.10	0.00	<**0.001**	0.10	0.01	<**0.001**	0.10	0.01	<**0.001**
Observations	23025			3072			18543		
R^2 / R^2adjusted	0.181 / 0.181			0.198 / 0.196			0.170 / 0.170		

Note: Dependent variable=1 if job seeker at period t being employed at the subsequent date of interview, and =0 otherwise.

6 CONCLUSION

This bachelor thesis has studied the determinants of the job search process and a job search outcome for job seekers using different search channels and intensity. The job search strategies and effort by job seekers and their contribution to the employment process are crucial to understanding individual's behavior in the Lithuania labor market. I investigate this process by examining the determinants of job search strategies and the effect these strategies have on subsequent employment. One of the sample features is that it includes unemployed job seekers and employed and inactive job seekers.

In my data, the distribution of search methods among inactive and employed job seekers are relatively equal, around 3 search methods, while unemployed job searchers use 5 search methods. Studying advertisements and social network is used by 60% of job seekers, the public employment office and direct approach by about 40%. Asking friends and family and using the Public employment office service are the two most popular job search methods among unemployed individuals. In contrast, for employed job seekers, the two most popular job search methods are studying advertisement in newspaper and asking friends and family. The job search behavior of job seekers living in urban areas of Vilnius and Kaunas differs from the behavior of workers living elsewhere in Lithuania. Age, sex, education, family circumstances, and firm characteristics emerge as key determinants of job search strategy.

I find that search effort and successful search methods differ by labor status groups. Employed job seekers have lower search effort. Compared to unemployed individuals, employed job seekers are more likely to find jobs through direct contracts to employers. While unemployed jobs seekers are more likely to find jobs through other search methods, like internet search. It also appears that workers finding a job are very unlikely to benefit from a public employment agency or from studying advertisements in the newspaper.

My results also demonstrate that applying directly to employers increases the probability of being hired at the next interview date. Thus, the most popular search channel used by employed and unemployed does not correspond to the most successful in terms of the probability of subsequent hiring. This outcome implies that policies aimed at helping job seekers to search for employment should focus on improving job search skills.

My estimates indicate that employed people have a higher probability than unemployed job seekers of successful job search and that this difference persists when controlling for individual and labor market characteristics. I also find evidence suggesting that the probability of being employed at the next period is driven by returns of attributes rather than the difference between employed and unemployed job seekers. I interpret this as an indicator that employed an unemployed job seeker behave differently to receive a job. In particular, the employed job seekers have higher reservation wages than unemployed- consistent with search theory.

Further research requires including individual reservation wages, employers' information, and demand-side factors such as how recruitment strategies vary across vacancy types to understand the job search and matching process better.

REFERENCES

Addison, J. T., & Portugal, P. (2002). Job search methods and outcomes. *Oxford Economic Papers*, 54(3), 505–533. https://doi.org/10.1093/oep/54.3.505

Anderson, P.M., and Burgess, S.M. (2000) Empirical Matching Functions: Estimation and Interpretation Using State-Level Data. *The Review of Economic and Statistics* 82(1): 93-102.

Arulampalam, W., Booth, A. L., & Taylor, M. P. (2000). Unemployment persistence. Oxford economic papers, 52(1), 24-50.

Blau, D. M., & Robins, P. K. (1990). Job Search Outcomes for the Employed and Unemployed. *Journal of Political Economy*, 98(3), 637–655. https://doi.org/10.1086/261698

Beržinskienė-Juozainienė, Daiva. "Darbo paieškos alternatyvos: teorija ir praktika." Ekonomika ir vadyba: aktualijos ir perspektyvos 2 (2009): 5-12.

Böheim, René, and Mark P. Taylor. Job search methods, intensity, and success in Britain in the 1990s. No. 2001-07. ISER Working Paper Series, 2001.

Burgess, Simon M. "A model of competition between unemployed and employed job searchers: an application to the unemployment outflow rate in Britain." The Economic Journal 103.420 (1993): 1190-1204.

DellaVigna, Stefano, and M. Daniele Paserman. "Job search and impatience." Journal of Labor Economics 23.3 (2005): 527-588.

Eckstein, Zvi, and Gerard J. Van den Berg. "Empirical labor search: A survey." *Journal of Econometrics* 136.2 (2007): 531-564.

Eeckhout, Jan, and Ilse Lindenlaub. "Unemployment cycles." American Economic Journal: Macroeconomics 11.4 (2019): 175-234.

Eriksson, Stefan, and Jonas Lagerström. "Competition between employed and unemployed job applicants: Swedish evidence." Scandinavian Journal of Economics 108.3 (2006): 373-396.

Faberman, R., Mueller, A., Sahin, A., & Topa, G. (2017). Job Search Behavior among the Employed and Non-Employed. 2016 Meeting Papers 1469, *Society for Economic Dynamics*. https://ideas.repec.org/p/red/sed016/1469.html

Giziene, V., & Simanaviciene, Z., (2015). The Impact of Human Capital on Labour Market: Lithuanian Case. Pages 2437-2442. *Procedia - Social and Behavioral Sciences*, Volume 191, https://doi.org/10.1016/j.sbspro.2015.04.331.

Granovetter, Mark. Getting a job: A study of contacts and careers. University of Chicago press, 2018.

Hannan, Carmel. Beyond networks: 'social cohesion 'and unemployment exit rates. ESRC Research Centre on Micro-Social Change, 1999.

Kahn, L. M. (2012). Temporary jobs and job search effort in Europe. *Labour Economics*, 19(1), 113–128. https://doi.org/10.1016/j.labeco.2011.09.001

Keeley, M.C and Robins (1985). Government programs, job search requirements and duration of unemployment. Journal of Labor Economics, 3, 337-62.

Kuhn, Peter, and Hani Mansour. "Is internet job search still ineffective?" The Economic Journal 124.581 (2014): 1213-1233.

Lindeboom, Maarten, Jan Van Ours, and Gusta Renes. "Matching employers and workers: an empirical analysis on the effectiveness of search." Oxford economic papers (1994): 45-67.

Longhi, S., & Taylor, M. (2010). Differences in employment histories between employed and unemployed job seekers. *IDEAS Working Paper Series from RePEc*. http://search.proquest.com/docview/1698352381/

Mortensen, D., & Pissarides, C. (1999). New Developments in Models of Search in the Labour. Chapter 39 of *Handbook of Labor Economics Volume 3 Part B*. http://search.proquest.com/docview/1698219758/

Mortensen, Dale T., and Tara Vishwanath. "Personal contacts and earnings: It is who you know!." Labour economics 1.2 (1994): 187-201.

McGregor, Alan. "Neighbourhood influence on job search and job finding methods." British Journal of Industrial Relations 21.1 (1983): 91-99.

Pociūtė, Aušra. Bedarbių subjektyvaus bedarbystės situacijos suvokimo, lūkesčių, darbo paieškos proceso ypatybių ir saviveiksmingumo sąsajos. MS thesis. 2010.

Rogerson, R., Shimer, R., & Wright, R. (2005). Search-theoretic models of the labor market: A survey. *Journal of economic literature*, 43(4), 959-988.

Schmitt, John, and Jonathan Wadsworth. "Unemployment benefit levels and search activity." Oxford Bulletin of Economics and Statistics 55.1 (1993): 1-24.

Van Den Berg, G. J., & Ridder, G. (1998). An Empirical Equilibrium Search Model of the Labor Market. *Econometrica*, 66(5), 1183–1221. https://doi.org/10.2307/2999634

Van Ours, Jan C. "An empirical note on employed and unemployed job search." Economics Letters 49.4 (1995): 447-452.

Wanberg, Connie R., Ruth Kanfer, and Maria Rotundo. "Unemployed individuals: Motives, job-search competencies, and job-search constraints as predictors of job seeking and reemployment." Journal of Applied psychology 84.6 (1999): 897.

Weber, A., Mahringer, H. Choice and success of job search methods. *Empir Econ* 35, 153–178 (2008). https://doi.org/10.1007/s00181-007-0148-z

JOB SEARCH BEHAVIOR OF EMPLOYED AND UNEMPLOYED PEOPLE IN LITHUANIA

PAULIUS VENCIUS

Bachelor thesis

Quantitative economics programme

Vilnius University, Faculty of Economics and Business Administration

Supervisor Dr. Jose Garcia-Louzao Perez

Vilnius, 2021

SUMMARY

43 pages, 2 figures, 14 tables, 29 references

This bachelor thesis investigates the determinants of job search among employed and unemployed individuals in Lithuania. The analysis relies on all the waves available from the Labor Force Survey from 2011 to 2019. This data is a household-level survey of people in Lithuania with detailed information on job search behavior hand in hand with personal and job/employer characteristics I find that asking friends and family and the Public employment office are the two most popular job search methods among unemployed individuals. In comparison, the average unemployed in Lithuania uses five search methods as part of their job search strategy. In contrast, for employed job seekers, the two most popular job search methods are studying advertisement in newspaper and asking friends and family, while on the average employed seeker in Lithuania uses three search methods as their search strategy. The job search behavior of job seekers living in urban areas of Vilnius and Kaunas differs from the behavior of workers living elsewhere in Lithuania. Age, sex, education, personal characteristics emerge as key determinants of job search strategy and success. My estimates show that other search methods are associated with a higher probability of subsequent employment for unemployed, keeping all things equal. In contrast, I find that direct contact with a potential employer is associated with a higher probability of subsequent employment for employed, keeping all things equal. On the other hand, job search intensity appears not to influence job search success in Lithuania.

DARBO PAEIŠKOS ELGESYS TARP UŽIMTŲ IR BEDARBIŲ ŽMONIŲ LIETUVOJE

PAULIUS VENCIUS

Bakalauro darbas

Kiekybinės ekonomikos programa

Vilniaus Universitetas, Ekonomikos ir verslo administravimo fakultetas

Mentorius Dr. Jose Garcia-Louzao Perez

Vilnius, 2021

SANTRAUKA

43 puslapiai, 2 grafikai, 14 lentelių, 29 šaltiniai

Šis bakalauro darbas yra skirtas išsiaiškinti pagrindinius darbo paiešką lemiančius veiksnius tarp užimtų ir bedarbių žmonių Lietuvoje. Ši analizė remiasi visais prieinamais duomenimis iš gyventojų užimtumo statitistinio tyrimo nuo 2011m. iki 2019m. Šie duomenys yra pateikiti iš namų ūkio imties tyrimo Lietuvoje, su detalia informacija apie darbo paieškos elgesį, kartu su asmeninėmis ir firmos savybės. Aš išsiaiškinau, kad darbo birža ir paklasuti artimųjų ar draugų yra du populiariausi darbo paieškos metodai tarp bedarbių. Palyginimui, vidutinis bedarbis Lietuvoje naudoja penkis darbo paieškos metodus kaip savo darbo paieškos strategiją. Tarp užimtų darbo ieškančių du patys populiariausi darbo paieškos metodai yra reklamų laikraščiuose analizė ir klausti artimųjų ar draugų. O vidutiniškai užimtas darbuotojas Lietuvoje naudoja tris darbo paieškos metodus kaip dalį savo strategijos. Tiesioginis kreipimąsis į potecialų darbdavį, suteikia didžiausią tikimybę gauti darbą. Taip pat darbo paieškos elgesys skiriasi tarp darbo ieškančių mieste, Vilniuje ir Kaune, nuo kitų ieškančiųjų kitose Lietuvos dalyse. Amžius, lytis, kvalifikacijos lygis ir asmeninės savybės yra pagrindiniai veiksniai nulemiantys darbo paeiškos strategiją ir pastangas. Mano tyrimo rezultatai rodo, kad kiti darbo paieškos metodai suteikia didesnę tikimibybę rasti darbą sekančiame periode bedarbiams. Taip pat aš išsiaiškinau, kad tiesioginis kreipimąsis į darbdavį suteikia didžiausią tikimybę rasti naują darbą užimtam žmogui. O bedarbis žmogus turi didžiausią tikimybę rasti darbą naudodamasis kitais darbo metodais kaip internetine paieška. Ir vis dėlto darbo paieškos intensyvumas neturi jokios reikšmės sėkmingam įsidarbinimui Lietuvoje.

APPENDICES

Appendix 1 Variables Description

Appendix 1 gives the summary of the used and generated data. This section describes each of the variables in detail. The variables presented here were based on a subset of data from the Labor Force Survey, which collects information on the household.

HHSEQNUM is a unique two-digit sequence number, which allocates to each member of the household.

HHNUM is a unique serial household numbers, which are allocated by Statistics Lithuania, and remain the same for all waves. It records all members of the same household under the same serial number.

SEX is a naturally defined dummy variable. A dummy variable=1 If an individual is female, 0 if it is male.

AGE is the age of interviewed persons. It is divided to control groups of age between 15-34, 35-54, 55+ years old.

MARSTAT is a marital status, which is naturally defined by a dummy variable. A dummy variable=1 if the individual is married, 0 otherwise.

NATIONAL is interpreted as citizenship. A dummy variable= 1 if the respondent is Lithuanian, 0 otherwise.

COUNTRYB is the variable respondent's birthplace. A dummy variable= 1 if the respondent was born in Lithuanian, 0 otherwise. This variable should follow current national boundaries rather than the boundaries at the time of the interviewee's birth.

YEAR is the year the survey was conducted. It is coded by 4 digits of the year.

REGION is a region of the household. There are ten Lithuania administrative districts.

This is to classify the place of residence by 2 types of area: Urban densely populated areas and rural thinly populated areas.

INTWAVE is the sequence number of the wave. Individuals are questioned for fourth waves: they are interviewed for two consecutive quarters, followed by two quarters break and after which they are again interviewed in the sample for two consecutive quarters.

WSTATOR is labor status during the reference week. Individuals are classified into three categories as employed, unemployed, and economically inactive. Employed workers are persons aged 15 years and older and who during the reference week worked for at least one hour and received payments for it; Unemployed individuals are persons aged between 15 and 74 years and who were not employed and were actively seeking to get a job; Inactive individuals are those who are neither unemployed nor employed.

NACE3D is a statistical classification of economic activities in the European Community (NACE) to code the economic activity of the individual.

ISCO4D is the classification of individuals occupational status by the international standard classification of occupation (ISCO)

SIZEFIRM is the number of persons working at the workplace. It is divided into 3 groups: small firm between 1 and 10 workers, intermediary firm from 11 to 49 and big firm from 50 and more.

YSTARTWK is the year in which a person started working for his employer. It is divided into decades: until 1990, from 1991 to 2001, 2002-2011 and to 2012 and later.

ATYPICAL is the atypical work, which is distinguished between “evening or night work”, “Weekend work” and “shift work”.

SEEKWORK is a dummy variable=1 if an individual Seeking employment during previous four weeks, 0 otherwise.

SEEKDUR is a duration seeking for employment. I create a dummy variable equal to 1 if an individual seeks work for 6 and more months, 0 otherwise.

LOOKREAS is a variable that refers to employed individuals and defines the reasons for looking for another job. These reasons might include seeking a job with more/fewer hours worked than in present job; wish to have better working conditions; actual work considered as temporary, etc.

METHODA is a dummy variable=1 if an individual contacted public employment office to find work, 0 otherwise.

METHODB is a dummy variable=1 if an individual contacted a private employment agency to find work, 0 otherwise.

METHODC is a dummy variable=1 if individual applied to employers directly, 0 otherwise

METHODD is a dummy variable=1 if an individual asked friends, relatives, trade unions, etc., 0 otherwise

METHODE is a dummy variable=1 if individual inserted or answered advertisements in newspapers or journals, 0 otherwise

METHODF is a dummy variable=1 if individual studied advertisements in newspapers or journals, 0 otherwise

METHODM is a dummy variable=1 if an individual used others method, 0 otherwise. Other methods are a collection of remaining categories such as seasonal employment agencies, social media, and the internet.

WANTWORK is a willingness to work for a person who is not seeking employment. It is a dummy variable=1 if the individual is not seeking work but would accept an offer, 0 otherwise.

AVAILBLE is an availability to start working within two weeks. This is a dummy variable=1 if an individual who is seeking the job is available to start working in two weeks.

AVAIREAS is the reason for not being available to start working within 2 weeks. These reasons might be pieces of training, present employment, personal responsibilities.

REGISTER is registration at a public employment office as a job seeker or an unemployed person. It is one of the job search channels. For unemployed individuals, it is also a provider of unemployment benefits and it describes the reservation wage for job seekers.

EDUCLEVL this variable referred to the highest ISCED (International standard classification of education) level the individual has successfully completed. The successful completion of an education program being recognized by the national education authorities or validate and 2 ed as equivalent to another qualification of formal education. In Lithuania, those individuals which belong to ISCED levels 1 and 2.

COURATT is a variable that covers individual participation in formal and non-formal education or training in the four weeks before the interview.

Appendix 2 Hires between employed and unemployed job seekers.

In Table 14 I provide a detailed descriptive statistic of the patterns of job search outcomes over the sample period. The first column shows that on average 75.2% of new hires were previously unemployed, and therefore that on average more than one quarter of new hires are employed job seekers. Over the sample period, the share of new hires that previously were unemployed job seekers ranges from 71.5% to 81.9%. This percentage was lowest during the period of economic growth after the Eurozone crises between 2014 and 2015 and highest at the peak of the booming economic. This situation might be caused by a relatively few unemployed job seekers in period growing economy or due to that individuals who are unemployed at economic growth period are likely to be least productive workers and thus have lower probability of entering a new job.

Table 14 Hires among employed and unemployed job seekers

Hires among employed, unemployed job seekers			
	Percentage of unemployed among newly hired	Percentage of unemployed finding a job	Percentage of employed job seekers finding a job
Overall	75.2	14.2	17.7
First observation 2011 q1	76.9	14.4	17.1
Last observation 2019 q4	81.9	6.7	15.8
Min (quarter)	71.5 (2014q3)	6.7 (2019q4)	3.2 (2019q2)
Max (quarter)	82.4 (2019q3)	18.8 (2016q3)	36.6 (2014q3)

Source: LFS dataset. Note: All numbers are depicted in percentage points

I compare the job finding rates of unemployed and employed job seekers in the last two columns of Table 7. Over the sample, on average 14.2% of the unemployed enter a new job each quarter. Although it varies from 6.7% (at the peak of the economic cycle in 2019) to 18.6% (after the eurozone crises). In contrast, 17.7% of employed job seekers change jobs each quarter. It ranges from 3.2% (again at the peak of the economic cycle in 2019) to 36.6%. It illustrates the difference among employed and unemployed job seekers.