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Youth Unemployment in Algeria and Discouraged Workers effects

Felix Appler and Moundir Lassassi

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Abstract

This work asks whether the unemployment rate in Algeria should be calculated to also include young people who say they want to work but have not recently searched for a job, especially regarding labour market policies that are meant to appease a young population. To this end, two separate approaches suggested by Kingdon and Knight (2006) are followed. Firstly, the propensity to actively look for work among young men claiming to be ready to work is documented as decreasing financial wealth. This points towards these non-searchers being voluntarily out of employment. In a second step, it is found that they display the same pattern of below average subjective life satisfaction as those searching unemployed across a number of different measures. Thus, the two tests do not point in the same direction. However, with regard to designing active labour market measures, it would seem sensible to consider the discussed group of young men, since the frustration associated with the lack of professional possibilities seems to extend to many who are not actively looking for work. For young women, both analyses fail to yield conclusive results.

Keywords: Unemployment definition, discouraged workers, life satisfaction, Algeria.

Felix Appler currently works as consultant for the World Bank /Poverty and Equity Global Practice. Email: applerfelix@gmail.com

Moundir LASSASSI is a Researcher - Division Manager “Social Economics & Human Development” and Team leader “Labour Market and Social Protection”, Centre for Research in Applied Economics for Development (CREAD) - Algiers - Algeria. E-mail: lassassim@gmail.com.

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1. Introduction

In Algeria, the unemployment (UE) rate is politically very important. Amongst the young, women and the relatively well educated, the statistic is particularly high and it is a declared political aim of the government to improve their situation in the labour market. To achieve this, various active labour market programmes have been implemented under the broadly advertised national *plan d'action pour la promotion de l'emploi et la lutte contre le chômage*. This set of policies is regularly updated and their design and budget is firmly linked to the UE rate, as calculated by the National Office of Statistics (ONS), in line with the standard definition of the International Labour Organisation (ILO). The level of the statistics, thus, has immediate consequences for the policies that the Algerian government implements. However, especially for developing countries with an elevated and structural UE problem, it has been frequently proposed that closer attention should be given to the definition of the statistics.

According to the ILO, being classified as unemployed requires having reached a specified age and having satisfied the three criteria of being without work, available for work and having actively searched for employment during a certain period of reference. (Husmanns et al., 1990). It is the searching requirement that is most frequently questioned. The reason is perhaps best described by a quote from a Tunisian high school dropout:

We see people who are brilliant. They are geniuses, but they still end up unemployed. So, what about me? I am really average. In my case, I am. That is what worries me. [...]

Male high school drop-out, Sidi Bouzid (interior Tunisia), as cited in World Bank (2014, p. 27)

Hence, in situations where there is a very high UE and in the absence of conditional UE benefits, people may be too discouraged from taking active measures to find a job. Therefore, the question that this work aims to answer is whether or not, and possibly for what purpose, is it sensible to apply a broad measure UE for young Algerians. That is, is there a group of discouraged workers who are not actively looking for work but who should be included in the calculation of the UE rate?

To fully grasp this question, first it is important to understand what this statistic measures in the case of Algeria and what the Algerian government hopes to capture. Firstly, its most important policy instruments are the CNAC, ANSEJ and ANGEM programmes that support young entrepreneurs and ANEM, an employment agency especially targeting the youth market. The focus, thus, seems to be on the unemployed

with no or little work experience. Furthermore, these programs were substantially expanded in 2011 as a response to the Arab spring uprisings in neighbouring countries.¹

The frustration of the unemployed, therefore, also appears to play an important role as far the Algerian government is concerned.

Krafft and Assaad (2014) offer an additional perspective. They argue that for the case of Egypt, which shares many of Algeria's characteristics, any UE rate has a poor job in measuring left-behind participants in the labor market. This is because, as in Algeria, it mostly captures educated first-time job entrants seeking formal employment, often in the more desirable public sector. The poor and less educated cannot afford to queue for such jobs whilst being without an income. As a result, they largely work in the informal sector. The authors, therefore, determine that any UE statistics neglect the most vulnerable labour market participants, whilst actually measuring the size of a relatively privileged group.

So why look at the *searching* criterion? It is certainly likely that the same applies to Algeria and the UE rate cannot capture the most deprived labour market participants due to the large informal sector. This work, however, tests an alternative hypothesis. It might well be that the UE only appears to be a phenomenon mostly affecting the relatively well-off, because the more deprived jobless gave up searching and, consequently, are not captured by the narrow ILO definition.

Husmanns et al. (1990), on behalf of the ILO, firstly recommend conducting a study into the definition of the appropriate UE rate. A standard way of determining the true labour market attachment of these "potential" unemployed is to compare their transition rates into employment with those of the "regular" unemployed (see, e.g., Flinn and Heckman 1983; Jones and Riddell 1999; Brandolini et al. 2006). However, this approach is often not suitable for developing countries. One reason for this is that no such transition and UE duration data may be available to perform the analysis. Another reason is that, due to the popularity of informal and occasional work, the transition into and out of employment is often blurred: in the absence of traditional work contracts it is difficult to state at what point in time a job begins or ends.

Therefore, alternative empirical criteria has to be developed to provide an informed choice about relaxing the search criterion for a particular country. This work will follow an approach that was developed by Kingdon and Knight (2006) for the case of South Africa, which separately looks at two different aspects of UE. Firstly, covering a range of individuals, it explored how wealth affects the probability of job seeking, in order to understand to what degree the choice not to search is voluntary. If the richer are found to be more likely to search, assuming that the group of non-searchers is relatively homogenous in its preferences, it can be concluded that, for many, the cost of looking for work, in relation to the slim chances of finding a job, may just not be affordable. This test is especially relevant in a context where search costs for many can be assumed to be considerable..

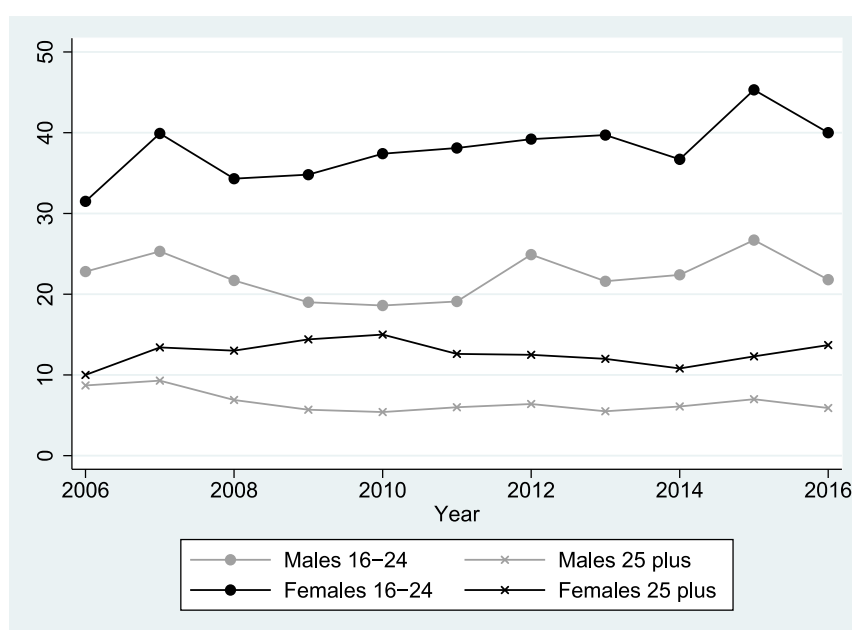
¹ See Musette & all (2014) for a detailed discussion of these policies and their development.

The second approach is to compare the average subjective well-being between searchers and non-searchers. If both groups are found to have equally below average life satisfaction levels, it provides an argument for including the second group in the UE statistics, since they are no less unhappy. This approach seems especially appropriate in light of the already mentioned significance of frustration in Algeria's labour market policies.

Using data from the SAHWA Youth Survey, the tests are performed for Algerians in the Algerian 15 to 29 year age group. This is because the most detailed data is available for this group, but also because the UE in Algeria is largely a labour market insertion problem, which the following section will describe in more detail. In addition, focusing the analysis exclusively on the young has the advantage that cohort effects, which are highly likely in a country with such a turbulent recent history, can largely be assumed to play no role.

For males, the first test provides some evidence that the non-searchers do so voluntarily, whilst the second test strongly suggests that they are as unhappy as the searchers. Since other works suggest a general element of voluntariness in North African UE and because the aspect of frustration seems to play an important role, it might be worth considering relaxing the *searching condition* for Algerian youths. There are no conclusive results for women.

The following chapter gives a more detailed picture of the Algerian labour market, whilst section 3 formalises the different motivations for not searching for work. Section 4 presents the results of the empirical analysis and the last section provides the conclusion..

Figure 1: *Official (narrow) UE rates, by age group and gender*

Source: Office National de Statistique(ONS). Rates in percent

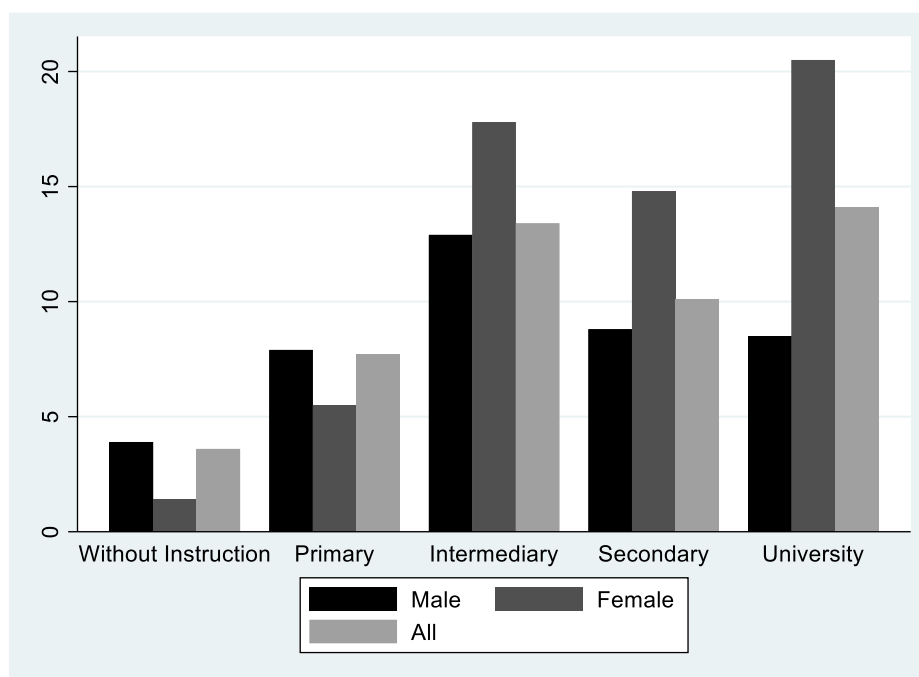
2. The Algerian Labour Market

As has just been argued, it is necessary to first understand the nature of UE before its measure can sensibly be applied to any task. UE rates in Algeria, as in most other North African countries, have been high for many years and differ considerably between age groups and genders. Figure 1 shows that between 2006 and 2016, the (narrow) UE rate has been mostly over 20% for males between 16 and 24 years, whilst it has only been around 7% for men over 24. For women, these statistics are even higher; between 30 and 40% for the young age group and around 12% for the older one. Also, UE rates are comparatively low for the least educated, as is shown in Figure 2. For women, it can even be said that the most educated are also the biggest group amongst the unemployed. This general pattern is largely in line with the descriptions of other labour markets in the Middle East and North Africa (MENA) region (e.g. Amer, 2015; Assaad, 2014; Dhillon and Yousef, 2009; Mryyan, 2014).

The high rates of UE may, in large part, be traced back to the generally unfavourable economic conditions that workers face. They comprise a highly bureaucratic business environment and a large but inefficient public sector. Assaad (2014), in an assessment of several “Arab” labour markets including that of Algeria, describes a deep dualism of the private versus public sector labour markets. The state offers an inefficiently high number of jobs with very favourable working conditions, as

part of “authoritarian bargain” social contracts. In effect, these jobs function as a public subsidy, as part of a general policy of political appeasement, especially in light of the upheavals of the Arab Spring and the subsequent turmoil in many neighbouring countries. These very desirable government jobs distort labour market conditions by promoting an inefficient allocation of human capital investment and hindering the creation of formal and competitive private business that could be competitive globally and lead the way to a faster growing economy.

Figure 2: Narrow UE rates in 2015, by education and gender



Source: Office National de Statistique (ONS). Rates in percent.

These barriers to the development of the formal private sector are manifested in the low level of economic diversification and the strong dependence on the hydrocarbon sector. It accounts for around 30% of GDP and more than 95% of export earnings. The IMF Export Diversification Index, which is lower the more diversified a country’s exports are, was 5.38 for Algeria in 2010 - the last available year - versus a 3.65 average for developing and emerging economies (IMF, 2017). As the oil price has been low since late 2014, as compared to previous years, the Algerian economy has seen its GDP growth decrease considerably. Its exports fell from 60.4 to 34.8 billion US\$ from 2014 to 2015 (World Integrated Trading Solution, 2017). Berument et al. (2010) document the high vulnerability of the Algerian economy to exogenous oil price shocks empirically.

For these reasons, observers have frequently described the current situation as a “crisis”, caused mainly by Algeria’s high dependence on the now very low oil price (e.g. Fakir and Ghanem-Yazbeck, 2016). Given such an economic state, the chances of the unemployed finding a job have presumably decreased, especially when looking at the consistently high UE rates even long before the crisis. This consideration may certainly discourage some from making frequent efforts towards finding a job under the current conditions.

At the same time, the large differences in UE rates between age groups point towards rigid labour markets. The World Economic Forum’s *Global Competitiveness Report* of 2016–2017 ranks Algeria 132nd out of 138 countries in terms of labour market efficiency. This indicates low transition rates into and out of employment. Indeed, when looking at the UE rates in Figure 1, a response to the drop in the oil price of 2014 and the subsequent slowdown of the economy can only partly be found. It seems to have only affected the young, who presumably comprise many first-time job seekers. For them, a clear jump can be identified, whilst the UE rate of over 25s remained steady and low. As it concerns the large number of public sector employees, this is in accordance with Assad’s (2014) theory of the “authoritarian bargain”, since it predicts that the government will not lay off workers, even when the fiscal budget is tight. Such a dynamic worsens the prospects of potential job entrants in two ways: it hinders the restructuring of the public sector from making it more efficient and potentially creating new jobs for young people, and it squeezes the budget for the necessary stimulation of economic diversification.

The result is a gridlocked situation, with very few job opportunities for the young. This gives further support to the speculation that some might be too discouraged to actively search for jobs.

Another striking feature of the Algerian labour market is the low participation rates of women. In 2015, just 16.4% of women over 15 years old were active, versus 66.8% for males, according to the Algerian Office *National de Statistique* (ONS). This is very low by any standard. The World Economic Forum’s *Global Competitiveness Report* ranks the country’s female labour force participation at 136 out of the 138 countries under consideration.

Another relevant aspect is that there is, in theory, public UE insurance in Algeria. However, most unemployed people do not benefit from it. The Caisse *nationale d’assurance-chômage* (CNAC) was created in 1994 and was originally conceived to grant benefits to workers who lost their employment for economic reasons, in the context of an economic reform programme. In 2003, it started to additionally offer loans for the creation of enterprises. This new function then went on to become the CNAC’s main field of activity. The share of unemployed who actually receive regular UE benefits is very low: According to the ILO (2014, p. 36), it is less than 10%. This is likely because the system only covers those that enter the UE from permanent labour contracts which, in the Algerian context, are almost exclusively public sector workers. These, in turn, are very rarely laid off. Ouzzir (2006) argues that this system actually

worsens the relative economic situation of the majority of the involuntarily jobless. For these reasons and because this work focuses on the young who are unlikely to be laid off public sector workers, the analysis will assume the absence of UE benefits.

This provides another argument for why an adjustment of the UE statistics may be justified. In most developed countries, the payment of benefits is conditional on the unemployed person displaying efforts to find work. This can be argued to distort the market trade-off between search costs and the chance of finding employment that should govern the decision to search, according to traditional job-search theory. This conditional income delivers an additional incentive to search. The situation naturally is different in the de facto absence of such a system.

Thus, the unemployed in Algeria certainly differ from those in many other countries in this respect: They will only search when their personally perceived net-benefit of searching is higher than that of staying inactive. Clearly, especially if the aim of an UE rate is to compare it between countries, the searching criterion may be questioned in the case of Algeria.

Apart from these static conditions, the dynamics of the labour market and the flows between the different labour market statuses are also important in order to correctly understand the implications of UE rates. For Algeria, very little literature exists that goes beyond cross-sectional analysis. However, as has been suggested, its characteristics are similar to those of other countries in the region, which is why looking at their dynamics might, at least, give a rough idea for Algeria. Assaad and Krafft (2016) provide a recent study of the dynamics of the UE for Egypt, Jordan and Tunisia - one of the very few and the most detailed of its kind for the MENA region. Firstly, their results further cement the finding that the UE in these countries is mostly an insertion problem of first time job-seekers. They find that almost all “very long-term unemployed” fall into this category, while those with some work experience tend to display short periods of UE.²

In addition, the authors demonstrate for Egypt and Tunisia that most transitions from a job into the UE are voluntary and that an involuntary transition is very rare. This apparent importance of the insertion problem further validates the approach of the present work which focusses on the young.

In addition, this last result also suggests that much of the UE, especially amongst the young, appears to be voluntary, to some degree. The authors find further evidence for this in the positive duration dependence of the hazard of exiting the UE, especially for men. This is in contrast to most other studies on duration dependence which mostly find negative relationships (e.g. Lalive et al., 2006; Van den Berg and van Ours, 1996). The usual explanation is that people become less and less employable the longer they remain in the UE due to skill atrophy. For the the MENA countries explored in Assaad

² The “very long-term” unemployed are defined by the authors as being unemployed for more than two years. The incidence of “very long-term” UE differs between countries, however, this is more of an issue in Egypt than in Jordan and Tunisia. Since there is no suitable comparable data for Algeria, it is unclear how much this result applies.

and Krafft (2016), the opposite sign implies there is a strong contrasting effect that overrides lowering employability. Since there are no decreasing UE benefits, the argument runs that the more time they remain searching for appropriate work the more they are forced to adjust their reservation wages and employment conditions downwards. This voluntariness hypothesis is further supported by Krafft and Assaad (2014) who, for Egypt, find a positive relationship between the UE and parents' wealth. The young remain without work if they have some chance of obtaining formal employment and can afford to do so, in order to search for one. This evidence suggests that most youths in the UE might be in this situation to avoid underemployment - not because there is no employment available at all.

Of course, these last results on labour market dynamics are not directly concerned with Algeria and, therefore, must be applied with caution. Still, given the similar general characteristics and that they were found for three countries in the same region, they may well give clues to help interpret the labour market.

3. A Model of conflicting motivations

According to the classical definitions, someone who does not search but still claims to want to work is reporting inaccurately. They would be classified as being out of the labour force. But is this always a good representation of their status? What might be alternative explanations for them not actively searching for an occupation? The following supply side job-search framework is based on Cahuc et al. (2014) and aims to formalise the different possible motivations.

Consider a set-up with infinite periods and a constant discount rate r . Suppose that a job market entrant has imperfect information on the wage gain and she only knows the exogenous distribution $H(w)$. If she decides to search, job offers with independent realisations of $H(w)$ arrive at an exogenous rate n . In face of such an offer, the individual will take the job if she is going to earn more than her reservation wage x . Thus, during each searching period her chance to exit UE is $n [1-H(x)]$. Once in employment, the chance of the contract ending during a certain period is denoted as q . The expected benefit of searching for one period is then the probability of an acceptable job offer multiplied by the discounted expected extra wage:

$$B = \frac{n}{r + q} \int_x^{\infty} h(w)(w - x) dw$$

However, there are also costs associated with searching and the assumptions about these are central to the proposed empirical procedures. The agent's opportunity costs of search are assumed to be the difference between the wage currently at offer w^0

and the non-earned income when out-of-work B_I . This is in line with the standard search model. For this particular situation without UE benefit systems, B_I is assumed to be available, regardless of whether the person is searching or not and, thus, represents the individual financial situation. In addition, there is a direct search cost component $s(B_I, R)$, where $\partial s(B_I, R)/\partial B_I < 0$ and $\partial^2 s(B_I, R)/\partial B_I^2 > 0$. This implies that richer people face lower search costs, which includes factors like access to cars and the internet in a situation where there is sparse public transport and many are without personal computers. The convexity is such that this is a factor that particularly affects the very poor, whilst it becomes negligible for higher wealth levels. In addition, the remoteness of the household location R also affects the direct costs to search positively, i.e. $\partial s(B_I, R)/\partial R > 0$. Active search thus costs

$$C = (w^0 - B_I) + s(B_I, R).$$

By definition, a wage offer of exactly the reservation wage, $w^0 = x$, is as attractive to the unemployed as continued search. In other words, the net value of remaining unemployed into the next period is zero: $B - C = 0$. Rearranging yields a necessary condition for the reservation wage:

$$x = B_I - s(B_I, R) + \frac{n}{r + q} \int_x^\infty h(w)(w - x) dw \quad \#(1)$$

The reservation wage the unemployed will set, therefore, depends on the labour market conditions, so $x(\Omega)$ where $\Omega = \{H(w), n, q, r, s, B_I, R\}$ is the set of all the factors affecting the individual's situation in the labour market. In this framework, a person without employment does not search when

$$x(\Omega) \leq B_I \quad \#(2)$$

That is, under the current conditions the per-period value of search is smaller than the income that is available when she is inactive.

This trade-off clearly depends on the current market characteristics Ω . Therefore, there may be two types of agents who choose to be inactive. Those that do not wish to work for the wages offered in the labour market are the voluntarily unemployed and, thus, truly inactive. This is the case when apart from (2) they also satisfy

$$E(w) = \int_0^\infty wh(w) dw < B_I. \quad \#(3)$$

The second group, however, would accept the expected market wages if they had the choice, but they are put off from searching by their individual situation in the labor market. They are what are commonly referred to as *discouraged workers*. Formally, they satisfy

$$x(\Omega) \leq B_I \leq E(w). \quad \#(4)$$

This latter group are not included in the classical definition of the UE, as they are not trying to find work. However, there clearly is a case to be made for them being in the UE and, thus, part of the labour force, since they are willing to work for the current wages. The value they get from searching, reflected in the reservation wage $x(\Omega)$, is just very low. This may be due to any combination of high search costs $s(B_I, R)$ and a bad outlook on the labour market, in particular few available jobs n , low wage levels $H(w)$ and a high probability of lay-off q .³ This particular case is of interest where the search costs are the factor causing this lack of effort. These agents would, thus, be the most deprived participants in the labour market, since although they would like to work under the current conditions, they cannot afford to search for employment.

There are, thus, two cases of people not actively looking for work that are not distinguished by the narrow ILO definitions of labour force status, even though they differ drastically in their motivations for not searching. It is the aim of this paper to distinguish between these two cases, by precisely using this difference in the underlying reasons. The following outlines how this can be achieved through an empirical test.

3.1 Intuition for the wealth test

Based on (2), denote the probability of an individual taking active measures to find work as

$$\Theta(\Omega) \equiv Pr(\text{search}) = Pr(x(\Omega) > B_I).$$

The sign of this probability's dependence on the out-of-work income, $\partial\Theta(\Omega)/\partial$, is not the same for all situations Ω , since the reservation wage $x(\Omega)$ also depends on Ω . In effect, the relationship depends on $\partial x(\Omega)/\partial$ being smaller or larger than one. From this, as derived in Appendix II, it follows that a positive relationship between the out-of-work income and the probability to search Θ is equivalent to

$$\frac{n}{r+q} (1 - H(x)) < -\frac{\partial s(B_I, R)}{\partial B_I} \quad \#(5)$$

Following the assumptions about the direct costs s , both sides of this inequality are positive. The RHS is just negligibly low for high levels of B_I . Equations (3) and (4) imply that high levels of out-of-work income are only found for the truly inactive, while the discouraged workers are expected to have very limited financial means. Thus, if an empirical analysis finds such a positive dependence of the propensity to search on the individual's financial situation, the apparently inactive are mostly composed of discouraged workers. In effect, the poorest cannot afford to search, whilst with a rising socio-economic status, the search costs become less heavy burdens and the individuals will be more likely to actively seek for work.

The contrasting scenario is that the majority of non-searchers actually prefer being inactive because the available out-of-work income is high as compared to the available wages. This is what (3) implies for the truly inactive. Then, a negative

³ The formal derivation of these effects follows from defining $\Phi \equiv x - B_I + s(B_I) - \frac{n}{r+q} \int_x^\infty h(w)(w-x) dw = 0$ from (1) and then applying the implicit functions theorem to Φ to get the marginal effects of the variables in Ω on x .

relationship will be found between the financial means of the out-of-work and their propensity to seek a job. The search costs will hardly react to rises in financial wealth BI, whilst the probability of stopping active search will rise because the out-of-work income is more likely to be higher than the expected wages, as described in (3).

Clearly, the proposed empirical test will only give conclusive results if the available-for-work non-searchers are a relatively homogenous group and not an equal mix between truly inactive and discouraged workers.

3.2 Impossibility of a test using remoteness variables

Kingdon and Knight (2006) propose to additionally perform a similar test, using the remoteness of the individual's home from larger towns and, thus, potential workplaces, as the explanatory variable. However, such a variable seems unfit for distinguishing between the different motivations of the apparently inactive. Living very far away from potential workplaces, denoted as high levels of R in the present model, will certainly make the search costs play a bigger role in the individual's trade-off. It will, thus, increase θ and, therefore, the value of the RHS in equation (5). This is especially true for the relatively poor discouraged workers. However, there is no adverse effect for wealthier, truly inactive workers. Higher search costs always lead to a lower probability of search, irrespective of whether those that are not searching are largely discouraged workers or truly inactive. In effect, it always holds that $\partial\theta/\partial R < 0$. It is, thus, impossible to empirically test for the composition of the inactive through the sign of this variable. Naturally, this result is due to the model's arguably restrictive assumptions and tight definition of the two groups. Yet it is hard to come up with an intuition that justifies this testing procedure without making additional strong assumptions, such as all truly inactive are indifferent to search costs.

Similarly, drawing conclusions from the size of the found coefficient for the search costs is practically impossible, since there is no credible reference to compare it to. Unless a detailed study exists on the expected magnitude of the effect for one of the scenarios in the given country and the given time, a credible reference point is very difficult to come up with.

4. Data and summary statistics

The data used in the analysis is a cross-section and derived from the Algerian part of the SAHWA Youth Survey data from 2015/2016. It covers 2035 young Algerians, one per household, whilst the latter were sampled from clusters that were randomly drawn whilst maintaining the proportional partition of the whole population into 7 rough geographical regions and into urban and rural areas. A detailed report on the design and execution of the survey, the generation of the data and some principal findings is CREAD (2016). The data contains rich information on the youths' households, education, employment situation, values and religion, and political participation. Unfortunately, the clusters that were used for sampling are, for reasons of anonymity, not included in the available dataset for this analysis.

Table 1: Summary statistics: Females

Variable	Obs	Mean	Std. Dev.	Min	Max
Age of the respondent	950	21.926	4.182	15	29
Years of education	505	12.867	3.844	3	22
Household: Number of people	950	5.957	2.17	2	16
Dummy for urban	950	.622	.485	0	1
Dummy for owned home	946	.765	.424	0	1
Dummy for married	950	.151	.358	0	1
Dummy for housewife	949	.236	.425	0	1
Social security cover of workers	104	.76	.429	0	1
Dummy for non-working father	950	.145	.353	0	1
Dummy for non-working mother	948	.89	.313	0	1
Family support	802	.971	.167	0	1
Employment					
Dummy for being student	950	0.426	0.495	0	1
Dummy for being strictly inactive	901	0.234	0.424	0	1
Joblessness among the available	285	0.635	0.482	0	1
Broad UE: Has worked before	181	0.149	0.657	0	1
Broad UE: Jobless time (months)	180	59.222	48.481	0	198

Source: SAHWA Youth Survey Algeria 2015/16

Tables 1 and 2 show summary statistics of the relevant variables, separately for females and males. The characteristics are quite different between the genders, as has been largely proposed by the literature on North African countries (e.g. Assaad, 2014; World Bank, 2014). Mothers are a lot less likely to be working than fathers. The young women are more likely to be students and have, on average, slightly more education. However, they marry earlier and are a lot less likely to be working. The latter may, of course, be due to longer studying times and the truncation of the sample at 29 years of age but, as was described above, other data shows that this trend of low participation persists with rising age. On the other hand, if they work they do a lot more so in the formal sector, suggested by the much higher probability of being covered by social security - conditional on being employed.

The variable for the “Jobless time” of the (broadly) unemployed was calculated as the time since either the year of the last employment, if there has been one, or the year when leaving the education system. Since most classes end in June in Algeria, and the survey was conducted at the end of the year, this variable was converted into months by always taking June of the respective year as the assumed time of ending the respective preceding activity. This is, of course, a rough calculation, but the large range of the variable makes potentially systematic miscalculations less severe. It should, however, be interpreted with caution, since seasonal lay-offs in particular may be a source for bias.

The variable “Family support” equals one, if the person claims to be financed mainly by family members. This question was only asked to the out-of-work.

Table 2: *Summary statistics: Males*

Variable	Obs	Mean	Std. Dev.	Min	Max
Age of the respondent	1085	21.694	4.191	15	29
Years of education	673	11.952	3.241	2	23
Household: Number of people	1085	5.944	2.056	1	15
Dummy for urban	1085	0.612	0.488	0	1
Dummy for owned home	1080	0.829	0.377	0	1
Dummy for married	1085	0.04	0.195	0	1
Social security cover of workers	324	0.429	0.496	0	1
Dummy for non-working father	1085	0.136	0.343	0	1
Dummy for non-working mother	1084	0.894	0.308	0	1
Family support	672	0.81	0.393	0	1
Employment					
Dummy for being student	1085	0.36	0.48	0	1
Dummy for being strictly inactive	1015	0.048	0.214	0	1
Joblessness among the available	575	0.437	0.496	0	1
Broad UE: Has worked before	251	0.187	0.391	0	1
Broad UE: Jobless time (months)	250	61.764	45.504	1	186

Source: SAHWA Youth Survey Algeria

The mean of the variable “Joblessness among the available” in Tables 1 and 2 shows the extent of youth UE in the sample, using a “broad” UE measure. The indicator here equals unity if the person is jobless and claims to be available for work, whilst it is zero for the employed. Thus, this variable excludes students and the inactive and, therefore, its mean can be understood as a “broad” UE rate. For males, such a broad definition would, thus, lead to an UE rate of over 40% which is almost double the official “narrow” statistic. Again, for women, the even higher figure has to be understood in the context, since the actual question asked in the survey was “Do you intend to work if the opportunity arises?” Since the sample suggests that a large fraction stays at home as *housewives* despite their high education, the reasons for the low participation must be assumed to be cultural. Therefore, conditioning for an *opportunity arising when* asking for the availability of their working power, is likely to

have a different meaning than it does for males. A job offer alone often might not be enough to enable them to work.

Table 3: *Self-reporting vs. the criteria; Percentages*

Self report	Searching	Non-searching	Total	Available	Not available	Total unemployed
“Unemployed”	43	57	100	75	25	100
“Inactive”	8	92	100	43	66	100
Total	32	68	100	62	38	100

Sample comprises all out-of-work young that are not in education. Source: SAHWA Youth Survey Algeria

Since this is survey data, all information is necessarily based on the ad hoc accounts of the individuals themselves. This is likely to be a source of bias for many variables. It might, therefore, be worthwhile to cross-examine potential contradictions in the reporting patterns. Table 3 shows how out-of-work individuals reported their own labour market status directly versus how they do indeed comply with the definitional criteria of searching and being available for work. Clearly and as is the case in most other survey data, the direct self-reports are a far cry from exact definitional classifications. However, the *searching* criterion for those who feel that they are unemployed is by far the least fulfilled. This may point towards the existence of a significant group that is not actively searching, but still feels attached to the labour market.

This is further explored in Table 4, which shows that those that are available for work, but are non-searching, are a far bigger group than the searching non-available, the other group that is allegedly reporting inaccurately. Thus, the former might not just be randomly misreporting like the latter. This again suggests that there is a significant group of young out-of-work who are not searching, but who truly would want to work and, thus, have some attachment to the labour market.

Table 4: *Being available for work, by search activity (N)*

	Searching	Non-Searching	Total
Non-available	22	236	258
Available	208	222	430
Total	230	458	688

Sample comprises all out-of-work young that are not in education. Source: SAHWA Youth Survey Algeria

Table 5 gives an overview of the partition and characteristics of the “broad” labour market, including the group just discussed. Again, it becomes clear that the informal labour market, as defined by being covered by the social security system, is predominately male (9% of female participants fall into this category, versus 32% for males). Formal employment seems to be unavailable for the lowly educated, whilst the

informal market employs all educational levels, except largely those with a university degree. This picture of a rather elitist formal labour market is complemented by its clear rising affiliation with age. Concerning the search for work amongst the unemployed, it seems that males are engaging more actively in it. Also, the young appear to be more active with rising education. The fact that the total UE appears to decline with age supports the hypothesis of it being largely a labour market entry problem.

Most importantly for this work, Table 5 shows the large difference between a classical “narrow” and a “broad” definition of the UE in the case of Algerian youth. The searching unemployed are about an equally large group as the non-searching who claim to want to work; or in other words, large fractions of those who are ready to work are, in fact, not actively looking for employment. This group is the subject of this paper. Do these young people, in fact, not really want to work?

Again, the larger number of females might have to be put in the context of the different meaning of the “opportunity arising” condition. They certainly are constrained by more ties with respect to activity in the labour market than males. Because of this and all the other data that supports the general hypothesis that females are in a radically different position than men in the Algerian labour market, all the following analysis will be conducted separately for the two genders.

Table 5: Percentage distribution of ‘broad’ labour force participants

	Formally employed	Informally employed	Unemployed searching	Unemployed no-searching	Total (%)	Total (N)
Gender						
Female	28	9	20	43	100	284
Male	24	32	26	17	100	574
Education						
No education	0	19	12	69	100	16
Primary	9	43	20	28	100	65
Middle	17	31	26	26	100	377
Secondary	28	22	21	29	100	240
Higher	51	7	28	12	100	160
Rural/Urban						
Rural	20	29	23	28	100	368
Urban	29	21	25	24	100	490
Age						
15-19	4	24	30	43	100	135
20-24	23	25	26	26	100	336
25-29	35	24	21	20	100	387
Total	25	24	24	26	100	858

Sample comprises all young that are not in education. Source: SAHWA Youth Survey Algeria

4.1. Wealth measures

The proposed analysis needs a measure of wealth/socio-economic status. However, the data does not contain direct information on household income or consumption. Therefore, several indexes and proxy variables will be used. In an attempt to construct an index, several variables indicating the number of household goods and rooms were, as a first step, standardised by the number of people in the household.⁴ Secondly, they were analysed with respect to their *principal components*: This identifies the dimensions where there is the most variation in the data and expresses them in a number of *components*, with corresponding values for each such dimension for each individual. To obtain a more efficient index variable in the face of the discrete nature of the used variables, a polychoric correlation matrix was imposed, as suggested by Kolenikov and Angeles (2004). Table 6 shows the linear combination weights of each of the appliances for the first three components, the so called “loadings”. Also, it displays how much of the total variation these three components explain. The first component is used as the index variable.

Still, the use or omission of the individual variables in the index creation remains highly subjective without a detailed qualitative study. Also, it is unclear how well basic appliances can capture differences in wealth for Algerian society - certainly a rich people by the standards of developing countries. Figure 3 shows the histogram of the resulting variable: it does seem to be quite concentrated.

In addition, an indicator for the father being out of work is used as a proxy variable for the financial situation.⁵ Unfortunately, the data does not distinguish between the different reasons for fathers being without work. Supposedly, the largest groups are the unemployed and retirees, whilst the retirement schemes in Algeria are rather weak. Therefore, both can be assumed to generate only very little to no income and a father without employment may be interpreted as a financially more constrained situation. Possibly, after the previously described strong economic downturn in the years preceding the survey, this may reflect the liquidity situation in the family better than the durable goods indicator.

Table 6: *Results of the principal component analysis for the creation of a wealth index*

	Component 1	Component 2	Component 3
Proportion explained	0.371	0.132	0.071
Variable loadings			
Televisions	0.320	-0.145	0.030
Refrigerators	0.298	-0.157	0.270
Ovens	0.294	-0.103	0.187
Heating units	0.276	-0.077	0.191
Water heaters	0.281	0.048	-0.177

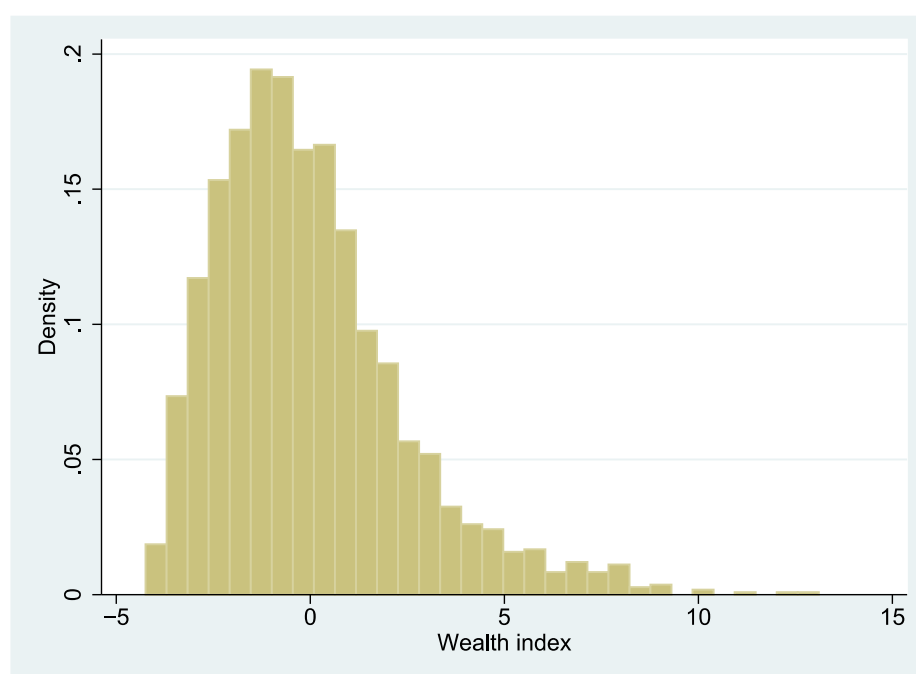
⁴In particular, these durable goods are televisions, ovens, refrigerators, heating systems, water boilers, satellite dishes, air-conditioning systems, washing machines, vacuum cleaners, passenger vehicles, motorcycles, trucks or buses, land for construction, computers, smartphones.

⁵ As was shown in Tables 1 and 2, it is very uncommon among young Algerians to have a working mother.

Satellite dishes	0.290	-0.157	0.138
Air conditioning units	0.271	-0.013	-0.245
Washing machines	0.296	-0.012	-0.054
Vacuum cleaners	0.171	0.419	-0.106
Cars	0.235	0.132	-0.305
Motorcycles	0.081	0.459	0.173
Trucks	0.075	0.528	0.155
Land	0.070	0.421	0.337
Computers	0.259	0.100	-0.323
Smartphones	0.229	-0.003	-0.437
Rooms	0.276	-0.073	0.229

Source: The five most important loadings in bold; Source: Authors' calculations from SAHWA Youth Survey Algeria

Figure 3: Histogram of the wealth index variable



Source: Authors' calculations based on SAHWA Youth Survey Algeria

4.2. The subjective well-being variables

The variables on the subjective life satisfaction that are used in the analysis are as follows: The most classical measure is how much young people agreed with the statement “On the whole, I am satisfied with myself”. The four possible responses were “agree strongly”, “mostly agree”, “mostly disagree” and “disagree strongly”. The other statements, to which the same response possibilities were given, were “All considered, I am inclined to think of myself as a failure”, “I think I am a person of value, at least the equal of any other”, “I see few reasons to believe in myself”, “I would like to have more

respect for myself” and “I sometimes feel really useless”. The responses are summarised in Table 7 and show that most youths evaluate themselves quite positively.

Table 7: Frequencies of the measures of subjective well-being

Variables	Disagree strongly	Mostly disagree	Mostly agree	Agree strongly
Satisfied with myself	3%	14%	43%	39%
Consider myself a failure	41%	38%	16%	4%
Consider myself a person of value	4%	9%	51%	37%
Few reasons to believe in myself	26%	39%	25%	10%
Would like more self-respect	11%	20%	41%	29%
Sometimes feel useless	38%	37%	18%	6%

Source: Authors' calculations based on SAHWA Youth Survey Algeria

The correlation matrix of the resulting variables in Table 8 suggests that they are certainly correlated but do not exactly capture the same thing. They seem to indeed measure different aspects of subjective well-being, which validates using them separately to achieve a more convincing picture.

5. Empirical analysis

In order to decide whether the proposed “broadening” of the definition of the UE is sensible in the case of young Algerians, two tests that closely follow Kingdon and Knight (2006) are conducted using the just-described data.

Table 8: Cross correlation of subjective well-being variables

Variables	1	2	3	4	5	6
1. Satisfied with myself	1.000					
2. Consider myself a failure	-0.352	1.000				
3. Consider myself a person of value	0.446	-0.351	1.000			
4. Few reasons to believe in myself	-0.190	0.266	-0.152	1.000		
5. Would like more self-respect	0.211	-0.101	0.089	0.070	1.000	
6. Sometimes feel useless	-0.327	0.352	-0.249	0.231	-0.001	1.000

Source: Authors' calculations based on SAHWA Youth Survey Algeria

5.1. Test 1: The impact of wealth on job-search

Firstly, as suggested by the theoretical model, the impact of financial constraints and wealth on the incidence of active search is explored. The theory predicts that if there is a large and relatively poor group amongst the young out-of-work where high search costs, relative to the probability of success, cause them not to search actively for work, wealth and liquidity measures will show a positive influence on the probability of job search. This is what may be called the “discouraged worker” hypothesis. If it is found to be true, the definition of the UE rate should be

broadened. Contrastingly, if high wealth and liquidity indicators are found to cause young people not to actively look for work, they are hypothesised to have a “taste for UE”. The argument runs here, as described in the model, that they prefer their non-earned income over having a job under the current market conditions. Then they can be assumed to be truly inactive. Thus, the two theories predict opposing signs for the coefficients of these variables.

To perform this test, a model is needed that can determine the average influence of the wealth variables and a set of controls on the propensity to search for a job S . Since S is a latent variable and not observed, a logit specification is used with the dependent variable S equalling one, if the person has searched in the month preceding the interview and zero otherwise. The structural equation then is

$$S_i^* = \alpha + B_i\gamma + \mathbf{x}_i'\beta + \epsilon_i,$$

with the simple corresponding logit rule

$$S_i = \begin{cases} 1 & \text{if } S_i^* \geq 0 \\ 0 & \text{if } S_i^* < 0 \end{cases}$$

where α is the intercept, B_i is the measure for wealth of the household where individual i lives, \mathbf{x}_i is a vector of co-variates including individual-level and household-level characteristics and ϵ_i is the error term.

Table 9: Logit results for job-search among the broadly unemployed, odds ratios

	Men	Men	Men	Women	Women
Wealth Index	1.053 (0.079)	1.068 (0.082)	1.037 (0.084)	0.934 (0.111)	0.972 (0.117)
Non-working father		2.192** (0.825)			0.954 (0.463)
Housewife					0.423** (0.183)
HH size	1.158* (0.098)	1.167* (0.099)	1.106 (0.098)	1.096 (0.107)	1.121 (0.111)
Age	1.170** (0.072)	1.184*** (0.074)	1.256*** (0.085)	0.981 (0.089)	1.024 (0.097)
Jobless time	0.994 (0.005)	0.993 (0.005)	0.990* (0.006)	0.997 (0.008)	0.996 (0.008)
No education (ref.)					
Primary	5.749 (7.135)	9.378* (11.960)	13.047** (17.040)	2.257 (3.289)	2.183 (3.185)
Middle	10.395** (12.292)	16.883** (20.597)	22.486** (28.081)	1.695 (2.022)	1.730 (2.070)
Secondary	4.271 (5.176)	7.452 (9.338)	7.801 (9.952)	3.090 (3.770)	2.616 (3.233)
Higher	7.921 (10.427)	13.291* (17.964)	11.810* (16.201)	10.165* (13.749)	7.564 (10.459)
Has Worked	0.724 (0.321)	0.714 (0.320)	0.677 (0.317)	4.001** (2.318)	3.586** (2.151)
Urban	0.918 (0.285)	0.937 (0.294)	0.838 (0.285)	1.190 (0.470)	0.928 (0.387)
Family support	0.814 (0.242)	0.791 (0.236)	0.679 (0.217)	0.168** (0.120)	0.171** (0.123)
Father activity:					

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Employer			0.340*		
			(0.187)		
Tradesman			0.443		
			(0.257)		
Farmer			0.107***		
			(0.076)		
Executive			0.138**		
			(0.120)		
Mid Manager			0.404		
			(0.349)		
Employee			1.078		
			(0.501)		
Skilled labourer			0.446		
			(0.242)		
Unskilled labourer			0.253**		
			(0.172)		
Constant	0.005***	0.002***	0.002***	0.528	0.317
	(0.008)	(0.003)	(0.004)	(1.195)	(0.739)
Observations	245	245	245	177	177
Pseudo R-squared	0.0824	0.0964	0.151	0.157	0.175

The dependent variable is 1 if the individual has actively searched for a job during the last month. 'Family support' is 1 if the individual claims to be mainly financed through family support. 'Has worked' is 1 if the individual has worked before. Source: Authors' calculations based on SAHWA Youth Survey Algeria

Table 9 reports the logit results for this test, where the coefficients are expressed as odds ratios. No significant effect of the wealth index variable on the probability to search is found.⁶ This may be due to the relatively small sample size or because the group of non-searchers is quite heterogeneous. Of course, it is also possible that there is just no dependency between wealth and the probability to search for a job in Algeria. However, another reason may be that, as suspected, the wealth indicator is flawed. Algeria is not a very poor country and the possession of appliances may say little about the actual wealth of a household. In addition, Algeria has suffered a lot from low oil prices in recent years. Thus, durable assets, which may have been accumulated before the crisis, might only be a limited indicator for present wealth.

A better proxy may be whether the young person has a working father or not. Looking first at males, the dummy for an out-of-work father shows a significantly positive effect. In particular, having an out-of-work father means, on average, that the odds of searching for a job increase by a factor of 2.19, which is quite a large difference. This finding, therefore, supports the "taste for UE hypothesis" in that less financial need, proxied by having a working father, leads to less search activity.

There might be an endogeneity problem with this result, if sons are commonly helping out in the fathers' workplace without getting paid for it.⁷ Possibly, the finding is due to these sons having less time to look for jobs. A working father would then lead to

⁶ Alternative calculations of the index variable, e.g. with the principal components separately calculated for urban and rural households, or with some appliances left out in the PCA, are not reported since they virtually led to the same regression results.

⁷ Sons that help out in the fathers' workplace without remuneration would be classified as working and, thus, not included in this sample. This would then possibly be an underemployment problem, but that's not what this analysis is concerned with.

less search activity, which might be what the coefficient truly captures. To shed light on this, it makes sense to look more closely at the father's fields of activity, to find out whether the effect is robust for cases where helping out is unlikely. Thus, Column 3 includes dummies for employment categories, the baseline being the jobless. The results support the view that the effect is not only driven by sons having less time due to helping their fathers. Significant negative effects are found for farmers (only 0.10 of the odds of non-workers) and executive managers (0.13 of the odds of non-workers), where helping out might be likely, but there is also a significant negative effect for unskilled labourers (0.25 of the odds of non-workers). It seems unlikely, therefore, that sons helping out their fathers are the only drivers in the findings.

Another motivation for looking more closely at fathers' occupational status is to find systematic differences between (presumably) well paid and lower paid employment and, thus, to strengthen the general argument regarding the financial liquidity of families. However, the results are difficult to interpret. As mentioned, the largest effect is found for executive managers and farmers, but sons of unskilled labourers also seem to search a lot less than those of the jobless. A Wald test for the equality of the coefficients for executive managers and unskilled labourers could not be rejected.⁸

In summary, the coefficient of the dummy for an out-of-work father provides some evidence that young males, who are not searching but claiming to want to work, are reporting inaccurately. They appear to voluntarily choose not to search. Perhaps with more certainty, it can be said that they don't seem to be deterred from job-search by financial constraints. Thus, they don't appear to be the group that the "discouraged workers hypothesis" supposes, namely the one most desperate for an income but without the means to actively look for a job.

However, it must be clearly stated that the proxy for wealth is unlikely to be very exact. For a more conclusive result, a household UE rate or even a direct measure for wealth, such as consumption expenditures or household income, would be needed.

The sample of women who claim to be available for work is even smaller than that for men, since the majority of Algerian women are outside the labour force. Possibly as a consequence, none of the variables for wealth are found to produce significant coefficients. Once again, the situation seems to be very different between the genders. The test doesn't produce any hints for or against the existence of young "discouraged" female workers.

5.2. Potential shortcomings of the wealth analysis

Unfortunately, the data does not allow for regional effects, other than the urban dummy. Given the size of the country, this is a serious drawback. However, since the

⁸ The null hypothesis that the coefficients are equal could not be rejected at even the 10 % level. The p-value for the chi-square statistic is 0.52.

interpretation of the results is mostly concerned with the direction of the effect, it is unlikely that this would change the general results.

There might be two additional endogeneity issues with the analysis of the father's status variable. Firstly, having a father without a job might lead to the young man being less needed in the household and, therefore, having more time to search for work. However, this is unlikely to be a strong factor in Algeria, where anecdotal evidence suggests that it is most likely that women do the housework.

Secondly, a father without employment may be less able to help the son with job search through his network, which might lead to the son searching more. However, it is explicitly stated in the questionnaire that family and social contacts also count as a search method. It still cannot be totally ruled out that some fathers might be searching for an occupation for their sons without the latter being involved at all.

5.3. Test 2: Differences in subjective life satisfaction across searchers and non-searchers

As a second step, the subjective well-being is explored as one of the most important reasons for the political use of the UE statistic. As Stiglitz et al. (2009) set forth in their report on the measurement of economic performance and social progress, it is important to look beyond traditional economic indicators and towards other objective and subjective measures of the quality of life, in order to capture the state of an economy and society. This surely is especially true in a context where frustration is such an important and oft discussed factor as for North African youths (see e.g. World Bank (2014) or the social turmoil of the Arab Spring in 2010/2011). Therefore, different life satisfaction variables are used to shed light on whether and how available-for-work non-searchers differ from the regular unemployed along this dimension. This approach is less guided by economic theory, but instead based on the robust empirical findings that link the UE to substantially reduced levels of subjective life satisfaction (see e.g. Di Tella et al., 2001; Theodossiou, 1998). The question that this section asks is, on average are those who are willing to work but not actively searching equally unhappy as the regular unemployed?

Ideally, the approach compares the average subjective well-being across ready-to-work searchers and the non-searchers. Having a variety rather than only one life satisfaction variable makes it possible to explore a multi-faceted pattern of life satisfaction and, thus, capture this complex and difficult-to-measure quality more convincingly.

To compare the average responses between the different groups, an ordered logit model is specified where the continuous latent variable is assumed to be the degree of agreement with the respective statements regarding subjective life satisfaction. The structural model is

$$L_i^* = \alpha + UE_i\gamma + x_i'\beta + \epsilon_i,$$

with the ordered logit measurement model, which divides into four categories corresponding to the four answer possibilities:

$$L_i = m \text{ if } \tau_{m-1} \leq L_i^* < \tau_m \text{ for } m = 1 \text{ to } 4.$$

is the respective answer to the life satisfaction question, α is the intercept of the maximum likelihood estimation, U_i is an indicator variable for being in the respective categories of “unemployed”, β is a vector of control variables including personal and household-level characteristics of the individuals, and ε_i is the error term.

For the estimations, the sample is extended to encompass all young people, irrespective of their relation to the labour market. This is in order to have a larger control group for a more accurate model of the determinants of life satisfaction. In a series of estimations, the variables capturing several aspects of subjective well-being are first regressed on an indicator for being “broadly” unemployed and a set of control variables. This is to confirm the general negative dependency for the respective dependent variable. As a second step, separate UE indicator variables are introduced for searchers and non-searchers. The rationale for this is that if the latter are found to be significantly happier than the former, their consideration in UE-related labour market programmes is less important. Then they may be more readily excluded from the UE definition.

Tables 10 and 11 report the results of the ordered logit estimations for males. In Column 1 of Table 10, the general negative impact of the UE is replicated. Column 2 shows the results for the two separate UE dummies, the searchers and the non-searchers. Both are found to have significantly negative effects that are comparable in magnitude. Very comparable results are found for the dependent variables, indicating how much young men believe in themselves and whether they sometimes feel useless. That is, there is a negative effect on the respective aspects of satisfaction for a broad UE indicator, as well as very similar effects for the “potentially” and the regular unemployed.

The regression of the dependent variable indicating the perceived lack of self-respect seems to be an exception. The coefficient for searching is positive and significant at the 10 percent level, while the coefficient for non-searchers is considerably smaller and insignificant at the usual confidence levels. A lack of self-respect seems to increase the probability that a young man takes active steps towards finding employment. However, the hypothesis of the two coefficients being equal cannot be rejected in a Wald test. Therefore, it is impossible to say how much this challenges the results of the other variables. Possibly a larger sample would have led to the rejection of the hypothesis.

For the two arguably more extreme variables, indicating how much the young think of themselves as a failure or a person of value, no effect of any of the UE indicators can be made out. This may be interpreted in that among young Algerians, being unemployed is bad for self-confidence whilst not posing an “existential” threat. With respect to the comparison between the groups, whether a person is actively searching or not, does not seem to make a difference along these dimensions of life satisfaction either. This confirms both the divergence between the underlying aspects of life satisfaction that the different dependent variables measure and the finding that non-searchers don’t differ from those searching in their general subjective life satisfaction.

These results thus suggest that as regards happiness, job-searching young men don’t differ from the non-searchers. Therefore, it may be sensible to consider them in the calculation of UE statistics, if the indicator is to say something about the well-being of the young.

For women, the findings are once again very different. Their results are summarised in Tables 12 and 13. The first column of Table 12 shows that the coefficient of the “broad” UE indicator is significantly positive. This is actually somewhat puzzling. Is employment a burden for Algerian women? This is a tricky question to answer, since the controlling group here is not only the employed but also students and the inactive, which make up a much larger fraction than for males. The analysis allows for the potential effect of being unhappy in the role of a housewife and, thus, ensures that this is not the group driving the effect. Also, a dummy for being married is included to allow for the effect of the pressure to marry. The other life satisfaction variables, however, don’t seem to be influenced by the UE. Thus, there is no evidence whatsoever of a negative influence of the UE on young women’s happiness. Thus, the results of this test do not draw any conclusions about an appropriate UE definition for young women.

5.4. Potential shortcomings of the happiness analysis

There may be two interrelated endogeneity problems with this analysis. Firstly, highlighting a classical problem for this literature (e.g. Di Tella et al., 2001; Theodossiou, 1998), there may be a reverse causality between the UE and life satisfaction: poor psychological well-being may cause the failure of finding a job, since this is likely to be an undesirable quality of an employee. This is especially a cause for concern in cross-sectional analysis, like in this study, and it is hard to overturn conclusively. Yet there is evidence from longitudinal studies which clearly suggest that, in general, the UE is the cause of happiness. An oft-cited summary of some such studies is Warr et al. (1988).

Secondly, Kingdon and Knight (2006) point out that, if it were found that job-searching unemployed are less happy than those non-searching, this may also be due to unobserved heterogeneity between the groups. A laid-back attitude, for example, may lead to less job searching but increased happiness. This would, therefore, undermine the validity of the test. Again, this is a difficult objection to completely overturn, but it may be argued that it is unlikely that such an unobserved factor would drive the results across all life satisfaction variables used in this analysis.

6. Conclusion

In conclusion, the two performed tests don’t unanimously agree on whether to include non-searching young Algerian men who claim to want work in the UE statistics. As to the effect of wealth and liquidity, some evidence of a negative effect on search activity is found. This suggests that non-searchers are unlikely to be largely “discouraged workers”. They don’t seem to be put off from actively looking for work by their relatively worse situation. Rather, the decision not to take active measures to find a

job appears to be voluntary. The analysis of the life satisfaction variables, on the other hand, largely suggests that they don't differ from their searching peers in terms of their well-being.

Since the two tests are concerned with quite separate aspects of the UE, roughly the differences in labour market situation and life satisfaction, it may be concluded that it is sensible to use different definitions of the UE for different applications. When the scale of frustration that the labour market situation causes for the young is of interest, it appears sensible to include non-searchers as well. This may especially apply for the determination of the scale and budget of most active labour market policies in Algeria, since they appear to be designed to appease a dissatisfied, young population.

An argument for a more general inclusion of non-searchers may be that, as was pointed out, the literature on North African labour markets suggests that the UE, in general, is to some degree voluntary. Therefore, the finding that the decision not to search is actively made by young men and is not due to financial constraints, may not mean that they are radically less attached to the labour market than the regular unemployed. Rather, they just seem to be more well-off.

However, additional evidence would be needed to confirm this. This analysis merely suggests that the situation of the 'potential' unemployed isn't more dire than that of those who do search. The fact that they are not actively looking for work, therefore, suggests that they are reporting inaccurately and do not really want to work. Consequently, an unconditional inclusion of them in the official UE statistics does not seem sensible. Yet a robustness check of this result, with a better measure for wealth, remains to be performed once better data becomes available.

For young women, the analysis does not provide any conclusions. This is likely to be due to their general low participation rate and cultural ties in the context of Algeria.

Appendix I : Results for the well-being test

Table 10: *Ordered logit : Impact of UE on life satisfaction for men, part 1*

	Am satisfied with myself	Am satisfied with myself	Think of myself as a failure	Think of myself as a failure	Am a person of value	Am a person of value
Broad UE	-0.473*** (0.149)		0.241* (0.144)		-0.165 (0.153)	
Searching UE		-0.491*** (0.181)		0.205 (0.174)		-0.235 (0.185)
Passive UE		-0.448** (0.208)		0.295 (0.206)		-0.060 (0.219)
Age	0.009 (0.016)	0.009 (0.016)	-0.008 (0.016)	-0.008 (0.016)	0.014 (0.016)	0.015 (0.016)
No form. education (ref.)						
Primary	-0.319 (0.642)	-0.308 (0.645)	-0.298 (0.595)	-0.276 (0.598)	-0.330 (0.635)	-0.288 (0.638)
Middle	-0.346 (0.603)	-0.331 (0.609)	-0.935* (0.557)	-0.905 (0.563)	-0.037 (0.592)	0.019 (0.599)
Secondary	-0.243 (0.612)	-0.230 (0.617)	-1.321** (0.567)	-1.294** (0.572)	0.091 (0.602)	0.139 (0.606)
Higher	-0.446 (0.623)	-0.431 (0.629)	-0.952* (0.577)	-0.921 (0.584)	0.060 (0.614)	0.116 (0.620)
Married	-0.626* (0.326)	-0.623* (0.326)	0.168 (0.316)	0.172 (0.316)	-0.543 (0.341)	-0.534 (0.341)
Urban	0.145 (0.133)	0.145 (0.133)	-0.292** (0.132)	-0.293** (0.132)	0.241* (0.139)	0.239* (0.139)
Own home	-0.225 (0.165)	-0.226 (0.165)	0.182 (0.164)	0.179 (0.164)	0.023 (0.171)	0.018 (0.171)
Hh. size	0.043 (0.037)	0.043 (0.037)	-0.108*** (0.037)	-0.107*** (0.038)	0.036 (0.039)	0.038 (0.039)
Wealth Index	0.063** (0.031)	0.064** (0.031)	-0.051 (0.032)	-0.050 (0.032)	0.058* (0.032)	0.059* (0.032)
Non-working father	0.190 (0.186)	0.193 (0.187)	-0.315* (0.184)	-0.311* (0.184)	-0.035 (0.192)	-0.027 (0.192)
Observations	967	967	967	967	967	967
Pseudo R-squared	0.0114	0.0114	0.0210	0.0210	0.0102	0.0105

Notes: The dependent variable is the level of agreement with the life satisfaction statements. Wealth is the wealth index variable resulting from the PCA, as described in section 4.1. "Owns home" is 1 if the house is the property of the family.

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Table 11: Ordered logit: Impact of UE on life satisfaction for men, part 2

	Don't believe in myself	Don't believe in myself	Would like more self respect	Would like more self respect	Sometimes feel useless	Sometimes feel useless
Broad UE	0.391*** (0.141)		0.252* (0.143)		0.410*** (0.143)	
Searching UE		0.366** (0.170)		0.321* (0.173)		0.411** (0.171)
Passive UE		0.429** (0.203)		0.145 (0.206)		0.408** (0.207)
Age	0.031** (0.015)	0.031** (0.015)	0.005 (0.015)	0.004 (0.015)	-0.008 (0.015)	-0.008 (0.015)
No form. education (ref.)						
Primary	0.045 (0.609)	0.061 (0.612)	-0.858 (0.638)	-0.899 (0.638)	-0.624 (0.651)	-0.625 (0.655)
Middle	-0.004 (0.573)	0.018 (0.579)	-0.760 (0.600)	-0.820 (0.604)	-0.627 (0.618)	-0.628 (0.624)
Secondary	-0.182 (0.582)	-0.162 (0.586)	-0.625 (0.610)	-0.679 (0.612)	-1.027 (0.628)	-1.028 (0.633)
Higher	-0.076 (0.593)	-0.054 (0.599)	-0.632 (0.619)	-0.693 (0.622)	-0.889 (0.638)	-0.890 (0.645)
Married	0.363 (0.307)	0.366 (0.307)	0.499 (0.305)	0.492 (0.306)	0.103 (0.306)	0.103 (0.306)
Urban	-0.171 (0.128)	-0.172 (0.127)	0.053 (0.129)	0.053 (0.129)	0.068 (0.130)	0.068 (0.130)
Own home	0.256 (0.159)	0.254 (0.159)	-0.449*** (0.163)	-0.443*** (0.164)	0.264 (0.163)	0.264 (0.163)
Hh. Size	-0.004 (0.036)	-0.004 (0.036)	0.031 (0.036)	0.028 (0.036)	-0.038 (0.037)	-0.038 (0.037)
Wealth Index	-0.045 (0.030)	-0.044 (0.030)	0.020 (0.030)	0.019 (0.030)	-0.035 (0.031)	-0.035 (0.031)
Non-working father	-0.448** (0.181)	-0.445** (0.182)	0.047 (0.178)	0.038 (0.178)	-0.227 (0.182)	-0.227 (0.182)
Observations	967	967	967	967	967	967
Pseudo R-squared	0.0139	0.0139	0.00719	0.00740	0.0117	0.0117

Notes: The dependent variable is the level of agreement with the life satisfaction statements. Wealth is the wealth index variable resulting from the PCA, as described in section 4.1. "Owns home" is 1 if the house is the property of the family.

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Table 12: **Ordered logit: Impact of UE on life satisfaction for women, part 1**

	Am satisfied with myself	Am satisfied with myself	Think of myself as a failure	Think of myself as a failure	Am a person of value	Am a person of value
Broad UE	0.507*** (0.172)		-0.034 (0.169)		0.127 (0.172)	
Searching UE		0.598** (0.281)		0.102 (0.264)		0.238 (0.268)
Passive UE		0.466** (0.199)		-0.102 (0.198)		0.068 (0.203)
Age	-0.042** (0.018)	-0.043** (0.018)	0.012 (0.018)	0.011 (0.018)	-0.061*** (0.018)	-0.061*** (0.018)
No from. education (ref.)						
Primary	0.672 (0.462)	0.669 (0.463)	-0.173 (0.478)	-0.182 (0.478)	0.306 (0.474)	0.302 (0.474)
Middle	0.516 (0.382)	0.513 (0.382)	-0.758* (0.396)	-0.767* (0.396)	0.133 (0.394)	0.129 (0.394)
Secondary	0.802** (0.388)	0.796** (0.389)	-1.256*** (0.401)	-1.269*** (0.402)	0.578 (0.399)	0.572 (0.399)
Higher	1.134*** (0.396)	1.124*** (0.397)	-1.414*** (0.407)	-1.433*** (0.408)	1.081*** (0.406)	1.070*** (0.407)
Married	0.324 (0.241)	0.323 (0.241)	-1.250*** (0.255)	-1.253*** (0.255)	0.703*** (0.247)	0.702*** (0.247)
Dummy for housewife	-0.380* (0.214)	-0.373* (0.215)	0.619*** (0.217)	0.632*** (0.218)	-0.091 (0.216)	-0.081 (0.217)
Urban	0.097 (0.147)	0.099 (0.148)	-0.250* (0.145)	-0.249* (0.145)	0.050 (0.148)	0.053 (0.148)
Own home	-0.152 (0.157)	-0.148 (0.158)	0.214 (0.158)	0.221 (0.158)	-0.221 (0.160)	-0.216 (0.161)
Hh. size	0.075* (0.040)	0.075* (0.040)	-0.013 (0.039)	-0.013 (0.039)	0.070* (0.040)	0.070* (0.040)
Wealth Index	0.030 (0.038)	0.030 (0.038)	0.028 (0.037)	0.028 (0.037)	0.021 (0.039)	0.021 (0.039)
Non-working father	0.357* (0.200)	0.357* (0.200)	-0.416** (0.195)	-0.418** (0.195)	-0.043 (0.196)	-0.045 (0.196)
Observations	863	863	863	863	863	863
Pseudo R-squared	0.0263	0.0264	0.0372	0.0374	0.0254	0.0256

Source 1: Notes: The dependent variable is the level of agreement with the life satisfaction statements. Wealth is the wealth index variable resulting from the PCA, as described in section 4.1. "Owns home" is 1 if the house is the property of the family.

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Table 13: *Ordered logit: Impact of UE on life satisfaction for women, part 2*

	Don't believe in myself	Don't believe in myself	Would like more self respect	Would like more self respect	Sometimes feel useless	Sometimes feel useless
Broad UE	-0.048 (0.163)		-0.094 (0.162)		-0.095 (0.165)	
Searching UE		-0.108 (0.266)		0.025 (0.257)		-0.107 (0.265)
Passive UE		-0.021 (0.187)		-0.155 (0.191)		-0.089 (0.193)
Age	0.021 (0.018)	0.021 (0.018)	0.035** (0.018)	0.035** (0.018)	-0.003 (0.018)	-0.003 (0.018)
No form. Education (ref.)						
Primary	-0.326 (0.447)	-0.324 (0.447)	0.196 (0.437)	0.187 (0.437)	-0.054 (0.442)	-0.053 (0.442)
Middle	-0.050 (0.366)	-0.048 (0.367)	0.475 (0.354)	0.469 (0.354)	-0.608* (0.366)	-0.607* (0.366)
Secondary	-0.430 (0.370)	-0.427 (0.371)	0.366 (0.356)	0.356 (0.357)	-0.737** (0.372)	-0.736** (0.372)
Higher	-1.054*** (0.378)	-1.048*** (0.379)	0.178 (0.364)	0.164 (0.365)	-0.709* (0.378)	-0.707* (0.379)
Married	-0.272 (0.236)	-0.270 (0.236)	0.303 (0.234)	0.301 (0.234)	-0.326 (0.241)	-0.326 (0.242)
Housewife	0.058 (0.207)	0.052 (0.208)	-0.613*** (0.209)	-0.603*** (0.209)	0.387* (0.211)	0.386* (0.212)
Urban	-0.125 (0.140)	-0.126 (0.140)	-0.017 (0.140)	-0.017 (0.140)	-0.076 (0.143)	-0.076 (0.143)
Own home	-0.196 (0.154)	-0.199 (0.155)	-0.078 (0.153)	-0.073 (0.153)	0.299* (0.156)	0.298* (0.156)
Hh. size	-0.047 (0.038)	-0.047 (0.038)	-0.064* (0.036)	-0.064* (0.036)	-0.061 (0.039)	-0.061 (0.039)
Wealth Index	-0.003 (0.037)	-0.003 (0.037)	-0.115*** (0.035)	-0.115*** (0.035)	-0.034 (0.037)	-0.034 (0.037)
Non-working father	-0.215 (0.192)	-0.214 (0.192)	0.092 (0.186)	0.092 (0.186)	-0.551*** (0.193)	-0.551*** (0.193)
Observations	863	863	863	863	863	863
Pseudo R-squared	0.0206	0.0207	0.0109	0.0110	0.0148	0.0148

Notes: The dependent variable is the level of agreement with the life satisfaction statements. Wealth is the wealth index variable resulting from the PCA, as described in section 4.1. »Owns home » is 1 if the house is the property of the family.

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Appendix II: Derivation for the wealth test

From (1), the reservation wage () can be written as

$$x = B_I - s(B_I) + \frac{n}{r+q} \int_x^\infty h(w)(w-x) dw.$$

Using Leibniz's rule, the partial derivative with respect to the non-labor income is

$$\frac{dx}{dB_I} = 1 - \frac{\partial s(B_I)}{\partial B_I} + \frac{n}{r+q} * \frac{\partial}{\partial x} \int_x^\infty h(w)(w-x) dw * \frac{dx}{dB_I}.$$

Since

$$\frac{\partial}{\partial x} \int_x^\infty h(w)(w-x) dw = \int_x^\infty -h(w) dw = H(x) - 1,$$

this can be rearranged to yield

$$\frac{dx}{dB_I} = \frac{1 - \frac{\partial s(B_I)}{\partial B_I}}{1 - \frac{n}{r+q}(H(x) - 1)} > 0.$$

As described in the main text, the predominance of discouraged workers predicts ,

which is equivalent to

$$\frac{n}{r+q}(1 - H(x)) < -\frac{\partial s(B_I, R)}{\partial B_I}.$$

References

1. Amer, M. (2015). Patterns of Labour Market Insertion in Egypt, 1998-2012. In: R. Assaad and C. Krafft (Eds.), *The Egyptian Labour market in an Era of Revolution*, 1st ed. Oxford: Oxford University Press, pp. 70-89.
2. Assaad, R. (2014). Making sense of Arab labour markets: the enduring legacy of dualism. *IZA Journal of Labour & Development*, 3(1), pp. 1-25.
3. Assaad, R. and C. Krafft C. (2016). Labour Market Dynamics and Youth Unemployment in the Middle East and North Africa: Evidence from Egypt, Jordan and Tunisia. *Economic Research Forum Working Paper Series No. 993*. Cairo, Egypt.
4. Brandolini, A., P. Cipollone and E. Viviano (2006). Does the ILO definition capture all unemployment? *Journal of the European Economic Association*, 4(1), pp. 153-179.
5. Berument, H., N. Ceylan and N. Dogan (2010). The Impact of Oil Price Shocks on the Economic Growth of Selected MENA Countries. *The Energy Journal*, 31(1), pp. 149-176
6. Cahuc, P., S. Carcillo and A. Zylberberg (2014). *Labour economics*. 2nd ed. Cambridge, MA: MIT Press.
7. CREAD, (2016). *Rapport principal de l'enquête algérienne sur la jeunesse*. [online] Barcelona: CIDOB. Available at: <http://www.sahwa.eu/OUTPUTS/Other-publications/Rapport-principal-de-l-enquete-algerienne-sur-la-jeunesse> [Accessed 11 Dec. 2017]
8. Dhillon, N. and T. Yousef (2009). *Generation in Waiting: The Unfulfilled Promise of Young People in the Middle East*. 1st ed. Washington, DC: Brookings Institution Press.
9. Di Tella, R., R. MacCulloch and A. Oswald (2001), Preferences over Inflation and Unemployment: Evidence from Surveys of Happiness. *American Economic Review*, 91(1), pp. 335-341.
10. Fakir, I. and D. Ghanem-Yazbeck (2016). *Running Low: Algeria's Fiscal Challenges and Implications for Stability*. [online] Carnegie Middle East Center. Available at: <http://carnegie-mec.org/2016/02/11/running-low-algeria-s-fiscal-challenges-and-implications-for-stability-pub-62732> [Accessed 5 November 2017].
11. Flinn, C. and J. Heckman (1983). Are Unemployment and Out of the Labour Force Behaviourally Distinct Labor Force States?. *Journal of Labour Economics*, 1(1), pp. 28-42.
12. Hussmanns, R., F. Mehran and V. Varma (1992). *Surveys of economically active population, employment, unemployment, and underemployment: an ILO manual on concepts and methods*. [online] Geneva: International Labour Office. Available at: <http://www.ilo.org/public/english/bureau/stat/download/lfs.pdf> [Accessed 5 November 2017].
13. ILO (2014). *World Social Protection Report 2014/2015 - Building economic recovery, inclusive development and social justice*. [online] Geneva: ILO. Available at: http://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/documents/publication/wcms_245201.pdf [Accessed 5 November 2017].

14. IMF (2017). *The Diversification Toolkit: Export Diversification and Quality Databases (Spring 2014)*. [online] Available at <https://www.imf.org/external/np/res/dfdimf/diversification.htm> [Accessed 5 November 2017]
15. Jones S. and W. Riddell (1999). The Measurement of Unemployment: An Empirical Approach. *Econometrica*, 67(1), pp. 147-162.
16. Kingdon, G. and J. Knight (2006). The measurement of unemployment when unemployment is high. *Labour Economics*, 13(3), pp. 291-315.
17. Kolenikov, S. and G. Angeles (2004). *The use of discrete data in PCA: theory, simulations, and applications to socioeconomic indices*. Chapel Hill: Carolina Population Center, University of North Carolina.
18. Krafft, C. and R. Assaad (2014). Why the Unemployment Rate is a Misleading Indicator of Labour Market Health in Egypt. *Economic Research Forum Policy Perspective No. 14*. Cairo, Egypt.
19. Lalive, R., J. van Ours and J. Zweimüller (2006). How Changes in Financial Incentives Affect the Duration of Unemployment. *Review of Economic Studies*, 73(4), pp. 1009–1038.
20. Mryyan, N. (2014). Demographics, Labour Force Participation, and Unemployment in Jordan. In: R. Assaad (Ed.), *The Jordanian Labour Market in the New Millennium*, 1st ed. Oxford: Oxford University Press, pp. 39–63.
21. Musette, Mohamed Saïb (2014). *Employment Policies and Active Labour Market Programmes in Algeria*. [on- line] Torino: European Training Foundation. Available at [http://www.etf.europa.eu/webatt.nsf/o/3F6D27A7987C47FEC1257CE60024C937/\\$file/Employment%20policies_Algeria.pdf](http://www.etf.europa.eu/webatt.nsf/o/3F6D27A7987C47FEC1257CE60024C937/$file/Employment%20policies_Algeria.pdf) [Accessed 2 November 2017].
22. Ouzzir, S. (2006). La protection sociale face aux défis de la flexibilité et de la précarité de l'emploi. *Cahiers du CREAD*, 78pp. 45-69.
23. Stiglitz, J., A. Sen and P. Fitoussi (2009). Report of the Commission on the Measurement of Economic Performance and Social Progress. [online] Available at: <http://www.stiglitz-sen-fitoussi.fr/en/documents.htm> [Accessed 4 November 2017].
24. Suryadarma, D., A. Suryahadi and Sumarto S. (2007). Measuring Unemployment in Developing Countries: The Case of Indonesia. *Labour: Review of Labour Economics and Industrial Relations*, 21(3), pp. 541-562.
25. Theodossiou, I. (1998). The effects of low-pay and unemployment on psychological well-being: a logistic regression approach. *Journal of Health Economics*, 17(1), pp. 85-104.
26. Van den Berg, J. and J. van Ours (1996). Unemployment dynamics and duration dependence. *Journal of Labor Economics*, 14(1), pp. 100-125.
27. Warr, P., P. Jackson and M. Banks (1988). Unemployment and mental health: some British studies. *Journal of Social Issues*, 44(4), pp. 47-68.
28. World Economic Forum (2017). *The global competitiveness report 2016-2017*. [online] Geneva: World Economic Fo- rum. Available at: <http://www3.weforum.org/docs/GCR2016>

-
- 2017/05FullReport/TheGlobalCompetitivenessReport2016-2017_FINAL.pdf [Accessed 5 November 2017].
29. World Bank (2014). *Tunisia - Breaking the barriers to youth inclusion*. [online] Washington, DC: World Bank Group, pp. 27-38. Available at: <http://documents.worldbank.org/curated/en/753151468312307987/Tunisia-Breaking-the-barriers-to-youth-inclusion> [Accessed 4 November 2017].
30. World Integrated Trading Solution (2017). *Algeria All Products Export(US\$ Thousand)*. [online] Available at: <https://wits.worldbank.org/CountryProfile/en/country/DZA/startyear/LTST/endyear/LTST/tradeFlow/Export/indicator/XPRT-TRD-VL/partner/WLD/product/Total> [Accessed 4 November 2017].



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