

# The Crisis of Unemployment and Marginal Employment among Doctorate and Magister Degree Holders in Algeria: A Sociological Analysis of the Mismatch between Academic Qualifications and Professional Integration

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**Abstract**—This study examines the crisis of unemployment and marginal employment among holders of doctoral and Magister degrees in Algeria. It identifies the structural and institutional factors behind this crisis and its psychological, social, and economic implications. The study adopts a descriptive-analytical approach. It draws on an integrative review of academic literature and a secondary analysis of published data. Particular attention is given to relevant Algerian studies and recent statistical and institutional reports. The findings show that employment difficulties cannot be explained by a shortage of jobs alone. They also reflect a mismatch between advanced academic training and labour market requirements. Other contributing factors include the limited capacity of economic sectors to employ researchers, insufficiently diverse career paths, and insecure forms of employment. A secondary analysis of an Algerian study involving 217 participants found that 54.38% were engaged in temporary university teaching. Another 53.46% expressed willingness to accept jobs below their level of academic qualification. The study stresses the need to distinguish open unemployment, insecure employment, and occupational mismatch. These are different situations and require different responses. It concludes that addressing this crisis requires moving beyond a purely quantitative approach to recruitment. A comprehensive policy of investment in human capital is needed. The priorities are to diversify employment opportunities, improve job quality, strengthen partnerships between universities and economic sectors, and develop a national system to track the career paths of advanced-degree holders.

**Keywords**—Unemployment; Marginal employment; Doctorate; Magister; Professional integration; Labour market; Algeria.

## I. INTRODUCTION

Higher education has become one of the main foundations of knowledge-based societies. It strengthens their capacity for economic and social development. Universities are no longer limited to transmitting knowledge and preparing qualified professionals. They also produce scientific research, foster innovation, and help address

societal problems. In this context, holders of doctoral and Magister degrees represent a strategic component of human capital. Their specialist knowledge, research competence, and analytical skills enable them to contribute to the development of economic, social, and scientific institutions.

However, the relationship between educational attainment and professional integration no longer has the stability historically associated with university education. An advanced degree does not necessarily lead to stable employment or a job suited to the graduate's qualifications. This contradiction is especially clear when a doctoral degree holder faces prolonged unemployment, takes temporary work with limited employment protection, or accepts a job that makes little use of the knowledge and skills acquired during years of study.

In Algeria, this issue has gained importance as higher education has expanded and the number of university degree holders has increased. This expansion has also changed the relationship between universities and the labour market. Competition for certain academic positions has intensified. There is also a growing need to reconsider employment opportunities for scientific expertise outside university institutions.

This situation cannot be reduced to an economic problem of insufficient job vacancies to meet demand. Its dimensions also include degree holders' social standing, professional expectations, self-image, and relationships with institutions. It may also influence their decisions about migration or withdrawal from research activity.

Unemployment and marginal employment therefore need to be examined as problems operating at several levels. Economic, organisational, educational, and social factors interact. Analysis must also move beyond the assumption that obtaining any job amounts to professional success. A more comprehensive approach considers job quality, employment security, and the match between work and academic qualifications.

## II. RESEARCH PROBLEM

The central issue addressed in this study is the growing gap between the academic value of doctoral and Magister degrees and the professional value that their holders can realise in the Algerian labour market.

Obtaining an advanced degree is assumed to involve a high level of cognitive and methodological training. However, this educational investment does not automatically lead to suitable employment. The contradiction becomes clearer when research expertise is used in insecure work or when graduates enter jobs that do not require the same level of qualification.

The problem extends beyond unemployment in the strict sense. It includes temporary university teaching, employment outside one's field of study, fixed-term contracts, and limited use of research skills. These situations are not identical. A temporary position may be well matched to a person's academic background but offer little security. Conversely, a permanent job may provide stability while remaining poorly matched to the qualifications acquired.

The study is therefore guided by the following main research question:

To what extent does unemployment and marginal employment among doctoral and Magister degree holders in Algeria reflect a structural mismatch between higher education policies and labour market integration mechanisms? What are the causes and consequences of this mismatch, and how can it be addressed?

Several related questions follow. They concern graduates' employment situations, the economic and institutional factors that shape them, and the match between available jobs and academic qualifications. They also address psychological and social consequences and the effectiveness of public policies intended to support this group.

The study starts from the interpretive assumption that the employment crisis among advanced-degree holders is not a result of educational expansion alone. Rather, it reflects the interaction of limited demand for specialised research work, weak coordination between universities and economic institutions, and differences in the quality of available employment opportunities.

## III. RESEARCH OBJECTIVES AND SIGNIFICANCE

The study aims to examine the structural and institutional determinants of employment difficulties among advanced-degree holders. It identifies forms of marginal employment and considers their effects on individuals and society. It also assesses the evidence available in published studies and identifies practical directions for improving labour market integration and making better use of scientific expertise.

The study's theoretical contribution lies in bringing together the economic perspective of human capital and the sociological analysis of employment opportunities and social status. Its practical contribution is a critical reading of published employment indicators. It highlights weaknesses in the measurement of unemployment and qualification mismatch. This analysis may help develop policies that

better reflect the actual circumstances of doctoral and Magister degree holders.

## IV. METHODOLOGICAL FRAMEWORK

### A. Research Approach

The study uses a descriptive and analytical approach. It is based on a critical integrative review of relevant academic literature and a descriptive secondary analysis of selected published quantitative indicators.

This approach combines theoretical explanations of unemployment and marginal employment with evidence from earlier studies. It does not involve a new field survey. Nor does it claim causal relationships that cannot be established from the available data.

The material reviewed includes Algerian studies published between 2014 and 2026. It also draws on international literature concerning employment quality and mismatches between qualifications, skills, and jobs, as well as official reports on the labour market and scientific research.

### B. Data Sources

The analysis draws primarily on three Algerian studies: Djedai (2014), Roubibi (2016), and Lamraoui and Tamrabet (2020). It also considers Djellouli and Ait Hatrit's (2023) study of employment among doctoral degree holders. Two recent studies of employability and job stability in Algeria were included (Benbouzid & Djani, 2026; Guerraiche & Zerouti, 2026).

Additional sources include data from the National Office of Statistics, documents issued by the Ministry of Higher Education and Scientific Research, World Bank indicators, and a 2026 report by the Organisation for Economic Co-operation and Development (OECD).

### C. Analytical Procedures

The evidence was organised around four themes: employment status, barriers to labour market integration, individual and social consequences, and employment policies.

Quantitative indicators were extracted from the original published tables. Sample sizes and response categories were retained as reported. Results from different studies were not combined into a single statistical average because their study populations, data collection instruments, and study periods differed.

The analysis also separates percentages describing actual employment situations from those measuring participants' perceptions or stated willingness to act. This distinction is essential. Self-reported attitudes should not be treated as independently established facts.

## V. CONCEPTUAL AND THEORETICAL FOUNDATIONS

### A. Unemployment among Advanced-Degree Holders

In statistical terms, unemployment refers to people who are not employed during the reference period, are available for work, and are seeking employment under the criteria used in labour force statistics. Low pay or a poor match between a job and an academic degree does not, by itself, make someone unemployed.

For advanced-degree holders, unemployment includes people with doctoral or Magister degrees who have no employment and are seeking work without finding it. People who undertake temporary teaching or other economic activities cannot automatically be classified as unemployed. Their status depends on the nature of the activity, the reference period, and the relevant measurement rules.

This distinction matters because some Algerian studies have used the term "unemployment" to describe people undertaking paid but insecure work. Clearer conceptual boundaries are therefore needed between unemployment and precarious employment (Lamraoui & Tamrabet, 2020, pp. 95–100).

### *B. Marginal Employment*

In this study, marginal employment refers to forms of work in which one or more aspects of labour market integration are weak. These may include job insecurity, irregular income, inadequate social protection, or limited use of acquired skills.

Marginal employment differs from disguised unemployment. The latter mainly concerns low contributions to production or the inefficient use of labour. Marginal employment instead focuses on a worker's position within the employment system and the quality of the employment relationship.

Three main forms can be distinguished. The first is contractual insecurity caused by unstable employment arrangements. The second is vertical mismatch, which occurs when a person's qualifications exceed the requirements of the job. The third is horizontal mismatch, which arises when the field of employment differs from the field of study.

The International Labour Organization stresses the importance of distinguishing overqualification from underqualification when measuring the match between education and employment. It also notes that formal qualifications are not a complete measure of actual skills (International Labour Organization [ILO], 2021).

### *C. Human Capital Theory*

Human capital theory views education and training as investments that increase individual productivity and the potential for economic returns. From this perspective, a doctorate represents a long-term investment in research capabilities and knowledge production.

However, economic returns depend on more than an individual's level of education. They also depend on the economy's capacity to absorb specialist knowledge and apply it in productive activities. Highly qualified people may therefore face limited suitable opportunities even when their education retains considerable scientific value.

This approach helps explain unemployment as a disruption in the conversion of educational investment into economic and social benefits. It does not necessarily indicate personal failure or a lack of competence (Becker, 1964).

### *D. Signalling Theory and Labour Market Segmentation*

Signalling theory suggests that educational qualifications help employers assess job applicants when their abilities are not fully known. This signalling function becomes particularly important when productivity or professional experience cannot be verified directly.

The signalling value of a qualification may weaken if the number of degree holders grows without a comparable rise in suitable jobs. Employers may then use additional selection criteria, including experience, complementary skills, and the ability to meet the demands of a position (Spence, 1973, pp. 355–359).

Labour market segmentation provides another perspective on differences between secure and precarious work. It examines how access, promotion, and employment protection vary across sectors. A degree alone is therefore insufficient for successful integration. Graduates also need access to positions that make appropriate use of their qualifications.

## VI. PREVIOUS STUDIES AND THE POSITION OF THE PRESENT STUDY

Djedai (2014) investigated the reasons for high unemployment among university graduates through a field study of 100 unemployed graduates in the district of Taibet. The findings highlighted the role of wages, the distance between home and the workplace, and the types of available jobs in explaining barriers to employment. However, the sample included graduates with different university qualifications. Its findings therefore cannot be generalised specifically to doctoral degree holders (Djedai, 2014, pp. 49–57).

Roubibi (2016) focused on the spread of unemployment among Magister and doctoral degree holders in Algerian society. The study linked this problem to a mismatch between university training and employment requirements and to the limited capacity of the national economy to absorb postgraduate graduates. It also examined the psychological and social effects of unemployment and the need for coordination between universities and economic sectors (Roubibi, 2016, pp. 194–204).

Lamraoui and Tamrabet (2020) provided field evidence that was more directly relevant to the group considered here. They distributed a questionnaire to a purposive sample of 217 participants, most of whom held doctoral degrees. Their findings revealed the prevalence of temporary work and declining satisfaction with opportunities for labour market integration. They also reported negative perceptions of recruitment competitions and the balance between advanced training and the labour market (Lamraoui & Tamrabet, 2020, pp. 97–107).

In a more recent study, Djellouli and Ait Hatrit (2023) examined job-search strategies among doctoral degree holders in Algeria. They found that respondents continued to focus on higher education and scientific research. These sectors were seen as the closest match to their qualifications.

Guerraiche and Zerouti (2026) found that graduate employability in Algeria is associated with several related factors. These include educational quality, the relevance of skills, professional mobility, and language proficiency.

Their findings suggest that employment difficulties cannot be attributed to universities alone.

Benbouzid and Djani (2026) analysed data from 200 graduates of the National Higher School of Statistics and Applied Economics. They used logistic regression to examine factors associated with obtaining a permanent employment contract. In their model, job stability was associated with additional education, language skills, and certain forms of social and family capital.

Comparison of these studies shows that difficulties with labour market integration are multidimensional. However, the available evidence differs in the groups studied and in its scope for generalisation. Studies focusing directly on doctoral degree holders remain less common than general studies of university graduates. This limits the ability to determine the national scale of unemployment and marginal employment among advanced-degree holders with precision.

## VII. UNEMPLOYMENT AND MARGINAL EMPLOYMENT IN ALGERIA

### A. General Labour Market Context

The preliminary findings of the 2024 activity, employment, and unemployment survey indicate a national unemployment rate of 9.7%, following statistical adjustments announced by the National Office of Statistics.

By contrast, the World Bank database reports a modelled unemployment estimate of 11.6% for Algeria in 2025.

The difference between these figures should not be interpreted as a direct increase in unemployment. They refer to different years and were produced using different methods. Neither figure represents the unemployment rate among doctoral and Magister degree holders.

This limitation shows the need for research data classified by exact qualification, discipline, sex, province, graduation year, and type of employment. Such detail would make it possible to distinguish the scale of unemployment from the quality of employment (Office national des statistiques, 2024; World Bank, 2026).

### B. Secondary Analysis of Published Employment Data

Lamraoui and Tamrabet's (2020) study offers useful evidence on the employment circumstances of a group of advanced-degree holders. The sample included 214 doctoral degree holders and only three Magister degree holders. This imbalance calls for caution when comparing the two qualifications.

The distribution of employment activities shows that most participants were not entirely outside economic activity. They were engaged in different forms of work, the most common being temporary university teaching.

TABLE I.  
EMPLOYMENT STATUS OF PARTICIPANTS IN LAMRAOUI AND TAMRABET (2020)

| Employment status               | Frequency  | Percentage  |
|---------------------------------|------------|-------------|
| Temporary university lecturer   | 118        | 54.38%      |
| Private-sector employee         | 33         | 15.20%      |
| Pre-employment contracts        | 26         | 11.99%      |
| Self-employed                   | 13         | 5.99%       |
| Does not undertake any activity | 10         | 4.60%       |
| Housewife                       | 6          | 2.78%       |
| Other activities                | 11         | 5.06%       |
| <b>Total</b>                    | <b>217</b> | <b>100%</b> |

Source: Lamraoui and Tamrabet (2020, p. 100), Table 4.

The data indicate that temporary teaching was the most common activity in the sample. One possible explanation is its close connection to participants' academic backgrounds and research skills. However, a temporary teaching contract does not necessarily imply that the work has limited scientific value. It does call for closer examination of contractual security, pay, social protection, and career prospects.

The distribution of activities also shows why it would be inaccurate to classify every participant as unemployed. The study provides evidence of difficulties with labour market integration and employment stability in a purposive sample. It should not be treated as an estimate of the national unemployment rate.

### C. Willingness to Accept Work Below One's Qualification Level

The same study found that 116 participants (53.46%) were willing to accept a job below their level of academic qualification. The remaining 101 participants were unwilling to do so (Lamraoui & Tamrabet, 2020, p. 104).

This finding has sociological importance because it suggests that economic need or a long wait for employment may lead graduates to lower their occupational expectations. It does not mean that all these participants were actually working in jobs below their qualification level.

This distinction shows the gap between stated employment preferences and actual choices. Accepting a lower-level job may be a temporary way to earn income, the start of a new career path, or a more lasting form of mismatch. Determining which situation applies requires

more information about the job, income, duration of employment, and available alternatives.

#### *D. Participants' Perceptions of Barriers to Employment*

In the study, 169 participants (77.88%) attributed their employment difficulties to what they perceived as irregularities in recruitment competitions. Another 31 participants referred to the limited number of available opportunities. In addition, 201 participants (92.62%) believed that recruitment procedures did not offer equal opportunities (Lamraoui & Tamrabet, 2020, pp. 99–102).

These results suggest low levels of trust in selection procedures among respondents. However, they represent subjective perceptions. On their own, they do not provide independent evidence that actual irregularities occurred during recruitment competitions.

An objective assessment would require examination of recruitment files, scoring criteria, appeals procedures, and compliance with the applicable legal and regulatory rules.

### VIII. STRUCTURAL AND INSTITUTIONAL DETERMINANTS OF THE CRISIS

#### *A. Mismatch between Advanced Training and Labour Market Demand*

The mismatch between advanced training and employment requirements is a major factor in the crisis. Expanding postgraduate programmes does not automatically create positions suited to the specialisations and skills of their graduates.

This mismatch is not necessarily caused by the number of degree holders alone. It is also linked to the structure of the economy and its capacity to create research- and development-based jobs.

Roubibi (2016, pp. 194–197) identifies weak coordination between university training and economic institutions as an important factor in the employment difficulties faced by advanced-degree holders.

From an economic perspective, a relative surplus of qualifications in one sector must be distinguished from weak demand for those qualifications across the economy. Competition for positions may be strong within higher education. Meanwhile, opportunities to use research expertise in other sectors may remain limited or poorly organised.

#### *B. Concentration of Career Expectations on Universities*

In social and institutional perceptions, doctoral training is often associated with a career as a university teacher and researcher. This is understandable given the nature of the qualification. However, when career prospects are limited to this role, labour market integration depends heavily on universities' capacity to create positions.

Djellouli and Ait Hatrit (2023) confirmed that higher education and scientific research were the sectors most frequently targeted by their study participants.

A doctorate, however, qualifies its holder for more than teaching. It develops skills in knowledge production, data analysis, research project management, policy evaluation, and complex problem-solving. These skills can be used in

economic institutions, public administrations, research centres, and consulting bodies.

The OECD (2026) report shows that doctoral degree holders pursue careers in several sectors. Higher education is not their only employment destination. International evidence does not establish that Algeria has the same employment pattern. It does, however, show the importance of more diverse career opportunities.

#### *C. Limited Links between Scientific Research and the Economy*

Weak links between research institutions and economic actors reduce opportunities to turn knowledge into productive activity. When research projects remain confined to academic settings and are poorly connected to technical, organisational, and production challenges, employment opportunities for researchers outside universities are restricted.

The World Bank has emphasised the importance of improving productivity, diversifying Algeria's economy, and supporting private sector-led growth to create sustainable jobs (World Bank, 2025).

Broader employment opportunities for doctoral degree holders therefore depend on institutions' ability to integrate research and development into their activities. They also require funding and contractual mechanisms that allow specialist expertise to be used effectively.

#### *D. Insecurity in Certain Forms of Employment*

Job quality cannot be measured simply by whether a person has an employment contract. It also includes employment security, wages, labour protection, promotion opportunities, and the use of acquired qualifications.

The OECD (2026) report indicates that employment rates among doctoral degree holders exceed 90% in most countries for which comparable data are available. Yet recent graduates may face higher rates of temporary contracts despite their advanced qualifications.

This evidence shows why obtaining a job must be distinguished from achieving sustainable labour market integration. It also confirms that temporary employment is not unique to Algeria. Its causes and effects nevertheless differ according to labour market structures and levels of social protection.

#### *E. Inequalities in Individual and Social Resources*

Employment opportunities vary with the resources available to individuals. These include language and digital skills, professional experience, social networks, and the ability to move between geographical areas.

Benbouzid and Djani (2026, pp. 45–63) found that some of these variables were associated with the likelihood of obtaining a permanent contract in a sample of Algerian graduates. This does not mean that the same factors operate in the same way for doctoral degree holders. It does, however, support the inclusion of personal and social resources in analyses of career transitions.

Individual differences should not be explained solely in terms of personal abilities. Geographical, social, and institutional inequalities may play a major role in

creating or restricting access to opportunities.

#### IX. PSYCHOLOGICAL, SOCIAL, AND ECONOMIC IMPLICATIONS

##### *A. Psychological Implications*

Work provides more than income. It can support independence, self-esteem, a sense of competence, and social participation. Prolonged unemployment or insecure employment may therefore contribute to frustration, anxiety, and lower life satisfaction.

Lamraoui and Tamrabet (2020, p. 107) found that 40.09% of participants identified psychological exhaustion and dissatisfaction as their main personal consequences. A further 28.12% reported a loss of belonging, while 26.26% identified a lack of personal autonomy.

The general pattern is consistent with the meta-analysis by Paul and Moser (2009, pp. 264–282). Their extensive review found an association between unemployment, higher psychological distress, and poorer indicators of mental health.

This association does not mean that all unemployed people experience mental disorders. Nor does it mean that unemployment produces the same outcomes for everyone. Responses vary with economic resources, social support, the duration of unemployment, and personal circumstances.

##### *B. Declining Social Status*

In social perceptions, advanced degrees are associated with knowledge, merit, and professional standing. When educational attainment does not lead to the expected employment, a gap may emerge between the symbolic status of a qualification and its holder's actual economic position.

This gap becomes wider when graduates become financially dependent on their families or find themselves in jobs that do not provide the professional recognition they expected. Prolonged unemployment may even lead them to reassess their educational path and question its value.

This situation does not reflect an objective weakness in the scientific value of the degree. Rather, it reveals a difference between academic recognition and the mechanisms of professional and social recognition.

##### *C. Economic and Developmental Effects*

The underuse of highly qualified people may create losses that extend beyond the individual. These can include lower social returns on educational expenditure, missed opportunities to produce applied knowledge, and a reduced contribution of research to institutional development.

Continued employment in unsuitable jobs may also weaken the use or further development of specialist skills. This risk is particularly relevant when graduates spend long periods in work unrelated to research.

Employment outside universities should not, however, always be regarded as a scientific loss. Doctoral degree holders may create considerable economic and intellectual value in suitable positions within productive or research organisations beyond academia.

##### *D. Scientific Migration*

Migration may become an option when graduates cannot find opportunities that meet their academic and economic expectations.

Lamraoui and Tamrabet (2020, p. 106) found that a high proportion of their sample had considered migration. However, an intention to migrate is not the same as actual migration. This proportion cannot be used to estimate the number of skilled Algerians who have moved abroad.

From a development perspective, the main concern is the possible loss of expertise without maintaining professional and research links with those who leave. Policies for researchers should therefore support international scientific cooperation and engagement with Algerian expertise abroad. They should also improve working and research conditions within Algeria.

#### X. A CRITICAL REVIEW OF EMPLOYMENT POLICIES

Algeria has introduced institutional measures to support the employment of doctoral and Magister degree holders. In May 2023, the Ministry of Higher Education and Scientific Research announced the allocation of 5,310 funded positions linked to the recruitment of this group. According to the published ministry statement, these included 2,555 positions at the rank of Assistant Professor, Class B, and 601 positions for researchers in research centres.

A digital platform was also opened in July 2023 to organise applicants' registration and direct their files to university institutions (Ministry of Higher Education and Scientific Research, 2023).

The regulatory framework was amended by Executive Decree No. 24-103 of 7 March 2024, concerning the special statute governing teacher-researchers. Certain opportunities for research contracting were also regulated by Executive Decree No. 24-428 of 30 December 2024.

These measures show institutional recognition of a problem that requires action. However, their effectiveness cannot be assessed solely by counting the positions announced. Evaluation also requires data on actual appointments, their distribution by discipline and province, the stability of the posts, and the retention of recruited staff.

A distinction is also needed between temporary measures that absorb part of the existing demand for jobs and structural policies that create continuing employment opportunities for highly qualified people.

The quality of labour market integration should therefore be measured alongside its scale. Relevant indicators include the time between graduation and employment, the match between qualifications and work, contract type, pay, and the use of research expertise.

#### XI. DISCUSSION OF FINDINGS AND AN INTEGRATED INTERPRETATION

The published evidence shows that employment difficulties among advanced-degree holders cannot be explained by a single factor. Expansion of postgraduate education may increase the number of jobseekers. However, it does not necessarily produce unemployment if demand for specialist skills grows at the same time.

Similarly, a shortage of university teaching positions does not mean that doctoral degrees lack professional value. It may instead point to a narrow range of recognised opportunities in which these qualifications can be used.

Comparing the studies suggests that the crisis can be understood through three connected levels.

The first level concerns the economic structure and the capacity of organisations to create jobs suited to advanced qualifications. The second concerns institutional governance, including educational planning, coordination across sectors, and transparency in recruitment. The third concerns individual and social career pathways, including complementary skills, available resources, professional expectations, and mobility.

The interaction of these levels produces different employment outcomes. These range from secure jobs suited to graduates' qualifications to temporary or mismatched employment. In some cases, they may lead to prolonged unemployment or withdrawal from the labour market.

The value of this framework lies in separating three questions: Has the individual obtained employment? Does that employment provide stability and protection? Does it allow the person to use the academic qualifications acquired?

An affirmative answer to the first question alone is not sufficient evidence of successful labour market integration.

## XII. MEASURES TO ADDRESS THE CRISIS

Addressing unemployment and marginal employment requires an integrated policy that combines reforms to information, training, and employment mechanisms with investment in scientific research.

The first priority is to establish a national system to track the career paths of Magister and doctoral degree holders. This system should link degree completion records to employment indicators. Graduates should be classified by discipline, sex, region, year the degree was awarded, and type of job. These data would help identify disciplines facing genuine labour market integration problems rather than relying on broad estimates.

The second priority is to diversify career opportunities for highly qualified researchers. They should be able to work in economic, industrial, and service organisations, including positions in research and development, evaluation, and scientific consultancy. This requires a clearer account of the skills developed through research training and how they relate to organisational needs.

Cooperation between universities and economic sectors should also be strengthened through joint research projects with clear professional opportunities. At the same time, universities must retain their scientific mission. Research should not be reduced to the short-term needs of the economy.

Within university recruitment, greater transparency is needed in vacancy announcements, selection criteria, scoring results, and appeals procedures. Medium-term planning for teaching and research needs is also important.

Reducing employment insecurity also requires improvements to temporary contracts. Rights and

responsibilities should be clearly defined, social protection should be ensured, and salaries should be paid regularly. Career pathways should allow movement into more stable positions when legal requirements are met.

Finally, postgraduate training should develop complementary skills, especially research project management, digital analysis, scientific communication, languages, and the effective use of research findings. This does not place responsibility for unemployment on graduates. Rather, it is intended to increase their ability to access different opportunities and develop a wider range of career paths.

## XIII. LIMITATIONS OF INTERPRETATION AND MEASUREMENT CHALLENGES

The reviewed evidence does not allow a precise national unemployment rate to be calculated separately for doctoral and Magister degree holders. The use of purposive samples also limits the generalisability of findings.

Another difficulty arises when the term "unemployment" is applied to people who are working, even if their jobs are temporary or insecure. Scientific analysis must therefore treat employment as a multidimensional phenomenon.

Descriptive studies based on subjective perceptions also cannot establish causal links between recruitment procedures and unemployment without independent administrative or statistical evidence.

These limitations show the need to develop methods of measurement that combine objective indicators with subjective experiences. Such methods should make it possible to understand career transitions over time, rather than merely describe employment status at a single point.

## XIV. KEY CONCLUSIONS

The analysis leads to a number of key conclusions.

First, the employment crisis affecting doctoral and Magister degree holders in Algeria is not confined to unemployment in the strict sense. It also involves contractual insecurity and different forms of mismatch between qualifications and jobs.

Second, published evidence shows that temporary teaching is common in some samples of advanced-degree holders. Its quality and stability should therefore be examined instead of automatically classifying this activity as unemployment.

Third, growth in the number of graduates is not a sufficient explanation for the crisis. Analysis must also consider economic demand for specialist work, the range of available careers, and the capacity of institutions to use scientific research.

Fourth, limited access to suitable employment may have psychological, social, and economic consequences. These effects vary according to individuals' circumstances, resources, and alternative opportunities.

Fifth, targeted recruitment policies for advanced-degree holders are important interventions. However, they require continuous evaluation based on actual outcomes, employment stability, and job quality.

Sixth, an effective employment policy requires reliable information systems, more opportunities beyond universities, and better coordination between education, the economy, and scientific research.

#### XV. CONCLUSION

The crisis of unemployment and marginal employment among doctoral and Magister degree holders in Algeria reflects a major change in the relationship between educational attainment and professional status. An advanced qualification remains an important means of acquiring specialist knowledge. On its own, however, it does not guarantee stable work or a career commensurate with the investment made in education.

The evidence reviewed shows that understanding this crisis requires moving beyond a simple division between employment and unemployment. Attention must also be given to the type and quality of work and the extent to which it matches scientific qualifications. Researchers must also distinguish graduates' personal experiences from statistical indicators that can support estimates at the national level.

The relationship between universities and the labour market needs to be rebuilt on the basis of institutional complementarity and investment in knowledge. Advanced training should not be linked solely to university teaching posts. The developmental value of doctoral education is not determined only by the number of academic vacancies. It also depends on society's and its institutions' ability to turn scientific research into productive knowledge, innovative solutions, and sustainable employment opportunities.

An effective response is therefore not simply to place graduates in any available job. It is to build a system that enables a transition from advanced academic training to high-quality labour market integration. Such a system should make productive use of human expertise, support national development, and uphold the value of knowledge and scientific research.

#### REFERENCES

##### A. Language Sources

- Lamraoui, Z., & Tamrabet, N. (2020). The problem of unemployment among holders of advanced degrees at Algerian universities: A sociological study of its causes and implications [In Arabic]. *Social Empowerment Journal*, 2(4), 86–110. <https://doi.org/10.34118/sej.v2i4.1090>
- Djedai, F. (2014). Reasons for high unemployment among university graduates: A field study of a sample of graduates in the district of Taibet [Master's thesis, Kasdi Merbah University of Ouargla; in

Arabic]. University of Ouargla Digital Repository. <https://dspace.univ-ouargla.dz/jspui/handle/123456789/7979>

- Roubibi, H. (2016). The spread of unemployment among advanced-degree holders (Magister and doctorate) in Algerian society [Article in Arabic]. *Journal of Prevention and Ergonomics*, 10(1), 190–205. <https://asjp.cerist.dz/en/article/74225>
- Ministry of Higher Education and Scientific Research. (2023). Recruitment of doctoral and Magister degree holders who are not in salaried employment [In Arabic]. <https://www.mesrs.dz/2023/06/recrutement-titulaire-doctorat-magistere-ar/>
- Ministry of Higher Education and Scientific Research. (2023, July 13). Recruitment of Magister and doctoral degree holders [In Arabic]. <https://www.mesrs.dz/2023/07/recrutement-doctorat-magistere-ar/>
- International Literature and Official Reports**
- Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. Columbia University Press.
- Benbouzid, K., & Djani, F. (2026). Exploring the determinants of graduate job stability in Algeria. *Management of Organizations: Systematic Research*, 95(1), 45–63. <https://doi.org/10.2478/mosr-2026-0003>
- Djellouli, N., & Ait Hatrit, K. (2023). La problématique du chômage et de l'emploi des titulaires du diplôme de doctorat en Algérie. *Revue Algérienne des Manuscrits*, 19(2), 289–306. <https://asjp.cerist.dz/en/article/231359>
- Guerraiche, I., & Zerouti, M. (2026). The employability of young graduates in Algeria: Critical determinants for building sustainable career pathways. *Journal of Economics and Sustainable Development*, 9(1), 260–278. <https://asjp.cerist.dz/en/article/288929>
- International Labour Organization. (2021, September 17). Only half of workers worldwide hold jobs corresponding to their level of education. ILOSTAT. <https://ilostat.ilo.org/blog/only-half-of-workers-worldwide-hold-jobs-corresponding-to-their-level-of-education/>
- Office national des statistiques. (n.d.). Résultats préliminaires relatifs à l'enquête activité, emploi et chômage: Octobre 2024. [https://www.ons.dz/IMG/pdf/Enquete\\_Chomage2024.pdf](https://www.ons.dz/IMG/pdf/Enquete_Chomage2024.pdf)
- Organisation for Economic Co-operation and Development. (2026). Research and innovation careers observatory 2026: Key indicators on talent, mobility and working conditions. OECD Publishing. <https://doi.org/10.1787/138ed294-en>
- Paul, K. I., & Moser, K. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior*, 74(3), 264–282. <https://doi.org/10.1016/j.jvb.2009.01.001>
- Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, 87(3), 355–374. <https://doi.org/10.2307/1882010>
- World Bank. (2025). *Algeria economic update: Responding to climate challenges and supporting sustainable development—Fall 2025*. World Bank.
- World Bank. (2026). *World development indicators: Algeria*. <https://data.worldbank.org/country/algeria>.