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Exploring the Determinants of Graduate Job Stability in Algeria

Graduate access to stable employment remains a major challenge in developing economies characterised by high levels of labour market precarity. This study examines the determinants of access to permanent contracts in Algeria, which is considered a key indicator of employment stability. Drawing on human capital, social capital, and soft skills frameworks, the analysis focuses on individual-level factors that influence labour market outcomes. The study is based on a 2022 survey of 200 graduates from the National Higher School of Statistics and Applied Economics (ENSSEA). A binary logit model is used to estimate the probability of obtaining a permanent contract. The results show that additional educational attainment, weak social ties, foreign language proficiency, graduation year, and maternal education significantly increase the likelihood of stable employment. In contrast, the field of study, student work experience, gender, and parental occupation are not significant. These findings provide policy-relevant insights for improving graduate employability.

Keywords: graduate employability, permanent contract, human capital, social capital, soft skills.

Introduction

The integration of higher education graduates into the labour market is a pivotal, multidimensional phase in the transition of young people toward active, productive, and sustainable economic participation. While this transition was traditionally conceived as a linear and sequential trajectory, moving from the completion of studies to the attainment of stable employment, contemporary empirical evidence increasingly challenges this assumption, highlighting fragmented, non-linear, and uncertain career pathways. These trajectories are often characterised by contractual instability, periods of unemployment, informal employment, or intermittent returns to education. Such realities raise fundamental questions about the quality of labour market integration and the capacity of young people to access decent employment, as defined by the International Labour Organisation (ILO, 1999).

In response to this growing complexity, several scholars have sought to

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conceptualise professional integration (Vernières, 1997; Trottier et al., 1997; Fournier, 2002; Béduwé, 2015). These contributions converge toward a process-based and dynamic understanding of integration, whereby individuals progressively transition from the educational system into stable employment. Within this analytical framework, employment stability emerges not merely as an outcome, but as a central structuring dimension of successful labour market integration, reflecting both objective employment conditions and long-term career prospects.

Against this backdrop, access to a permanent contract (PC) can be interpreted as a key institutional and economic indicator of professional stabilisation. It provides income security, access to social protection, and greater predictability in career trajectories, thereby constituting a cornerstone of sustainable employment, particularly in economies undergoing structural and socio-economic transformations. In the Algerian context, this issue is particularly salient, as a significant proportion of graduates enter the labour market through fixed-term contracts (FTC), which are frequently associated with precarious employment conditions, including limited social coverage, restricted career advancement opportunities, and increased vulnerability to informal employment. According to the Office National des Statistiques (2019), nearly 80% of non-permanent workers are affected by informal employment. In this respect, the nature of the employment contract constitutes a relevant proxy for assessing both the stability and the quality of labour market integration.

Despite the growing body of literature on graduate employability, a significant gap persists in understanding the micro-level determinants that shape access to stable employment in contexts marked by structural labour market constraints, such as Algeria. **The research problem** addressed in this study, therefore, lies in the insufficient empirical understanding of the individual and microeconomic factors that influence graduates' probability of accessing permanent employment, in a context where contractual precarity remains predominant.

The research object of this study is the transition process of Algerian higher education graduates toward stable employment, measured through access to permanent contracts (PC).

The aim of this article is to identify, model, and empirically assess the individual factors that influence the probability of obtaining stable employment among higher education graduates in Algeria. More specifically, the study seeks to examine the respective and combined effects of human capital, social capital, and soft skills in shaping access to permanent contracts.

The research objectives are:

- to analyse the effect of human capital indicators on employment stability;
- to evaluate the role of social capital in facilitating access to permanent jobs;
- to assess the contribution of soft skills to labour market outcomes;

This research aims to explore, through the Algerian case, the underlying microeconomic mechanisms governing the transition to stable employment, with a particular emphasis on the conditions that facilitate access to decent and sustainable work. It draws upon the

theoretical frameworks of human capital (Becker, 1964), social capital (Bourdieu, 1980), and soft skills in order to identify the key determinants that significantly increase the likelihood of securing a permanent position among higher education graduates.

The research method of this study is based on a graduate survey conducted in 2022 among alumni of the National Higher School of Statistics and Applied Economics (ENSSEA) who graduated between 2017 and 2019. A quantitative approach using a binary logit model is employed to estimate the probability of obtaining a permanent contract. This model is not conceived as an end in itself but rather as a tool for understanding the underlying dynamics of graduate labour market integration. Technical and mathematical considerations are secondary to the overarching aim of interpreting and explaining the professional integration of young graduates.

Literature review and hypotheses development

The transition from graduation to stable employment has become a major area of concern in both policy and academic circles. In many countries, particularly in the developing countries, graduates frequently enter the labour market through fixed-term, precarious, or informal contracts. This dynamic raises fundamental questions about the determinants of job stability and the role played by individual resources, such as human capital, social capital, and transversal skills, in shaping early career trajectories. While existing research has provided a wealth of empirical insights, there is still limited consensus on the weight of each factor, particularly in developing country contexts. This section develops a conceptual framework for the analysis and formulates the hypotheses guiding the empirical investigation.

Human Capital

Grounded in Becker's (1964) human capital theory, numerous empirical studies have confirmed a positive association between educational attainment and the probability of accessing stable employment (Kamanzi, 2006; Gblokpor-Koffi, 2020; Zhang et al., 2025). Beyond simple access to employment, higher levels of academic qualification are also associated with higher job quality, measured in terms of contract type, remuneration, and long-term career prospects. Gendron (2004), for instance, emphasises that holding a degree confers a comparative advantage in the labour market, especially for securing open-ended employment contracts.

In addition, the training received not only determines access to employment, but also the quality of the job obtained (Zhang et al., 2025). In this regard, Nafiou (2018), in her study on the determinants of graduates' access to informal employment, points out that workers who have attended school at any level are more likely to leave the informal sector than those who have never attended. Although his analysis primarily focuses on informality, the findings can be extrapolated to the field of employment

stability, insofar as access to a permanent contract (PC) is often regarded as a key indicator of formal employment.

Moreover, the field of study is crucial. While earlier national statistics (Office National des Statistiques, 2010) highlight disparities across disciplines, recent empirical studies confirm that graduates in STEM and applied fields benefit from higher employment stability and better earnings prospects (Deming, Noray, 2020). Kamanzi (2006) shows that access to permanent employment varies significantly depending on the field of study. Graduates in management and administrative sciences, engineering, and applied sciences are the most advantaged, whereas those in education, the humanities, interdisciplinary studies, and agriculture are the least favoured.

From these observations, we formulate the following hypothesis:

H1: *Human capital, particularly higher educational attainment and technical specialisation, is positively associated with access to permanent employment.*

Social Capital

The literature also highlights the crucial importance of social capital in the access to employment of young graduates, as well as in the quality of the job held. Numerous empirical studies distinguish between latent social capital and mobilised social capital (Gblokpor-Koffi, 2020; De Weerdt et al., 2024; Espinoza et al., 2025).

Latent social capital, measured in particular by the professional experience acquired during studies, is a key factor in professional integration (Gblokpor-Koffi, 2020). It acts as a positive signal in the eyes of employers, thus increasing the chances of getting a job after graduation (Jaziri et al., 2018). Tuononen (2019) shows that students who have held jobs related to their field of study during their last year of study have better employment prospects. (De Weerdt et al., 2024) show that having had the opportunity to access a professional network increases the likelihood of obtaining permanent employment. However, De Schepper et al. (2023) qualify this effect, pointing out that student work does not necessarily improve access to the most qualified jobs.

The social capital mobilised, which combines strong ties (family, friends) and weak ties (professional networks, distant acquaintances), plays a significant role in the professional integration of young graduates (De Weerdt et al., 2024). In Algeria, despite the predominance of the strong ties for acquiring any job position, their effectiveness remains limited, with a stable integration rate of only 48.2% and often low salaries (Medjoub, Hammouda, 2018; Lassassi, Alhawarin, 2018).

A similar trend is observed in Tunisia, where the use of strong ties promotes informal employment (Ayadi, 2023). In Canada, as well, weak ties appear to be more effective, facilitating access to stable, formal and skilled jobs (Kamanzi, 2006).

These insights lead to the following hypothesis:

H2: *Social capital, particularly weak ties and relevant work experience during studies positively influences the probability of securing a permanent job.*

Soft Skills

Soft skills, include transversal skills such as communication, teamwork and problem-solving, which supports technical skills (Ait Soudane et al., 2020). These skills play a key role in the employability and professional stability of graduates, giving them a competitive advantage in a market where academic qualifications tend to be homogeneous (Akoum, 2024). Graduates with strong soft skills integrate more easily the labor market and access stable jobs, particularly on permanent contracts.

Mastery of foreign languages, especially English, is a major asset for finding a job in a context of increasing globalization (Morlaix, Nohu, 2019). This skill is particularly valued by employers, especially by multinational companies, where it promotes not only access to employment but also the quality and sustainability of the position. However, gaps in language skills significantly limit graduates' professional opportunities (Morlaix, Nohu, 2019).

In light of this evidence, we propose the following hypothesis:

H3: *Soft skills, particularly language proficiency are positively associated with access to stable employment.*

Socio-Demographic Characteristics

A vast body of research has explored the influence of socio-demographic variables such as gender, year of graduation, and parental background on graduate employment outcomes (Nafiou, 2018; Gblokpor-Koffi, 2020; Petrongolo, Ronchi, 2020; Ayadi, 2023). Gender remains a key axis of labour market segmentation, with women often facing higher risks of unemployment and job precarity. However, this effect is far from universal, and some studies report gender parity in specific institutional or sectoral contexts (Petrongolo, Ronchi, 2020).

The time elapsed since graduation also plays a role in employment trajectories. Gblokpor-Koffi (2020) and Ayadi (2023) find that older graduates tend to have more stable positions, with reduced exposure to informality over time. Finally, parental education and socio-professional status are widely recognized as predictors of labor market integration. Nafiou (2018) show that individuals from more privileged backgrounds particularly, those whose parents hold managerial or professional roles, benefit from greater access to stable and formal employment.

From these considerations, we formulate the final hypothesis:

H4: *Socio-demographic characteristics, especially gender, parental education, and graduation year significantly influence the probability of accessing a permanent contract.*

Overall, the reviewed literature highlights that access to stable employment is a multidimensional process shaped by the interaction of human capital, social capital, soft skills, and socio-demographic characteristics. While human capital remains a central explanatory factor in neoclassical and human capital theories, recent evidence suggests that its effects are increasingly mediated by social networks and transversal competencies. In developing country contexts, social capital and soft skills may partially offset limited educational advantages, whereas

socio-demographic factors continue to structure access to labour market opportunities. However, despite this growing body of research, there is still limited consensus on the relative importance of these determinants, especially in the Algerian context marked by labour market segmentation and informality.

Taken together, these theoretical and empirical insights provide a comprehensive framework for analysing graduates' transition to stable employment and justify the need for an integrated empirical assessment of their relative effects. Building on this conceptual foundation, the next section presents the methodological approach adopted in this study, including data collection, variable construction, and the empirical strategy used to estimate the probability of obtaining a permanent contract among young graduates.

Methodology

As in many African countries, obtaining exhaustive institutional records in Algeria remains challenging. To address this limitation, we conducted an original graduate survey in 2022. The target population consists of graduates from the National Higher School of Statistics and Applied Economics (ENSSEA) who completed a Master's degree between 2017 and 2019 and were residing in Algeria at the time of the survey. This time frame was deliberately selected to ensure that graduates had sufficient time to transition into employment, particularly given institutional constraints such as mandatory military service for men.

The questionnaire was developed based on internationally recognised graduate survey frameworks, including the guidelines proposed by Schomburg (2003), the school-to-work transition surveys developed by the International Labour Organisation (ILO), and regional survey instruments used in North African higher education projects (Mesbahi et al., 2021).

The instrument was structured into four main sections: (i) socio-demographic characteristics, (ii) human capital (education and training pathways), (iii) social capital (networks and work experience), and (iv) labour market outcomes, including employment status, job search strategies, and job quality indicators.

To ensure content validity, the questionnaire underwent a two-stage validation process. First, it was reviewed by senior researchers from the Research Center for Applied Economics for Development. Second, a pilot test was conducted in November 2021 with 15 graduates from different specialisations. This pilot phase enabled us to refine the wording of the questions, assess their clarity and relevance, and estimate the average completion time (approximately 15 minutes). Such pre-testing procedures are widely recommended to improve reliability and reduce measurement error.

Due to the absence of updated administrative contact databases, a multichannel data collection strategy was implemented. The survey was administered online using Google Forms in December 2021. Participants were contacted through institutional email lists (when available), professional social networks (LinkedIn), and general social media

platforms (Facebook). Follow-up reminders were systematically sent to increase the response rate, in line with best practices in survey methodology.

Out of 658 eligible graduates, 499 were successfully reached. A total of 205 responses were initially collected over a one-month period. After data cleaning, which involved incomplete and inconsistent responses being removed, the final sample consisted of 200 valid observations, corresponding to a usable response rate of approximately 30%.

The collected data were exported to SPSS for cleaning and statistical analysis. The data processing included the exclusion of ineligible responses, the coding of open-ended answers, and the treatment of missing values using standard procedures. As is common in survey-based research, the final sample exhibited deviations from the population structure, particularly with regard to gender and field of study. To correct for these imbalances, a calibration weighting procedure (calage sur marges) was applied, following the approach developed by Deville and Särndal (1992).

The empirical analysis focuses on the determinants of access to stable employment, defined as holding a permanent contract (PC), as opposed to temporary contracts or other forms of employment. Among the respondents, 68.5% reported being employed, 30% were unemployed, and 1.5% were inactive at the time of the survey.

The analytical strategy follows a two-step approach. First, a bivariate analysis was conducted to examine the relationship between each explanatory variable and employment stability. Second, a binary logistic regression model was estimated to assess the simultaneous effect of individual, educational, and social characteristics on the probability of holding a stable job. This model is appropriate given the binary nature of the dependent variable and is widely used in labour market studies (Benbouzid, 2023).

The logistic regression model is specified as follows:

$$y_i = \alpha + \Sigma\beta X_i + \mu_i.$$

Where:

$\mathbf{y_i}$**:** The binary dependent variable that takes two values (PC, FTC or other);

$\mathbf{X_i}$**:** Represents the explanatory variables grouped under five main categories: human capital, social capital, soft skills, and socio-demographic factors. All explanatory variables were operationalised based on theoretical literature and previous empirical research. A summary of the variables included in the model is presented in Table 1.

Overall, this methodological framework ensures a consistent and robust empirical strategy for analysing the determinants of access to stable employment among graduates in the Algerian context.

Results

As we have detailed in the methodology section, this research is based on a two-step analysis. First, we present the bivariate analysis of each independent variable in relation to the type of contract. Then, we present the results of the binary logit model, which takes into account multiple explanatory variables simultaneously.

Table 1. **Characteristics of the study variables**

Category	Variable name	Variable Type	Coefficient
Human Capital	Additional Diploma	Dummy	0= No, 1= Yes
	Field of studies	Categorical	0 = Finance and actuarial science, 1 = Applied statistics, 2 = Applied economics and prospective
Social Capital	Latent social capital: Work experience while studying		0 = No, 1 = Yes, weak relationship 2 = Yes, strong relationship
	Social capital mobilized		0 = Strong ties[1], 1 = weak ties type 12 2 = weak ties type 23
Soft skills	Proficiency in foreign languages	Ordinal	0 = Low level, 1 = Medium level, 3 = High level
	Other Soft skills[4]		0 = Low level, 1 = Medium level, 3 = High level
Socio-demographic characte-ristics	Sex		0 = Female, 1 = Male
	Year of graduation	Ordinal	0 = 2017, 1 = 2018, 2 = 2019
	Father's level of education		0 = Low level, 1 = Medium level, 3 = High level
	Mother's level of education		0 = Low level, 1 = Medium level, 3 = High level
	Father's profession	Ordinal	0 = Employee, 1 = Self-employed 2 = Other
	Mother's profession	Ordinal	0 = Employee, 1 = Self-employed 2 = Other

Source: prepared by the authors.

Notes:

[1] Household contacts, personal contacts and teachers.

[2] Unsolicited application: direct contact with the employer, through internships / on-the-job training during my studies.

[3] Job fairs, through private placement agencies, through social networks: Facebook, Instagram, LinkedIn, etc. Through one of these employment assistance schemes (ANEM, ADS, ANSEJ, ANGEM). Respond to advertisements or job advertisements (newspapers, notifications).

[4] Including the level of mastery of the computer tool or communication.

Bivariate analysis

The results of the bivariate analysis show that, on average, 60.9% of graduates are employed under a permanent contract (PC), while 39.1% hold fixed-term or other forms of employment contracts (see Table 2). This difference can be explained by variations in human capital, social capital, soft skills, as well as the sociodemographic characteristics of the graduates.

As illustrated in Table 2, there is a statistically significant relationship between obtaining an additional diploma and the type of employment contract (Chi-square = 0.002, Cramér's V = 0.270). These results suggest that graduates with an additional degree are more likely to obtain a permanent position. For instance, a higher proportion of PC holders (38.6%) possess an additional qualification, whereas only 22.7% of PC holders do not. Conversely, only 13.6%

of graduates with an additional degree are employed under fixed-term or other contracts, compared to 25% among those without such credentials. This finding supports Spence's signalling theory, which posits that higher educational attainment serves as a positive signal to employers (Spence,1973).

However, the analysis reveals no significant effect of the field of specialisation on the type of employment contract (Chi-square = 0.954). In other words, holding a degree in a specific major does not significantly increase the probability of obtaining a permanent job.

The results also show a statistically significant difference in outcomes based on the type of social capital mobilised during the job search process (Chi-square = 0.005, Cramér's V = 0.280).

In general, relying on strong ties (family, friends, faculty) appears to be less effective in securing a PC, with only 9.8% of graduates using strong ties obtaining a permanent job. In contrast, mobilising second-type weak ties significantly increases the probability of accessing a PC, with 36.4% of such graduates in stable employment. Conversely, only 8.3% of those using weak ties are in fixed-term or other forms of employment, underscoring the importance of extended and diverse networks.

Regarding latent social capital, the analysis does not reveal a statistically significant link between working in a job related to one's field of study and the type of contract (Chi-square = 0.511). This finding is somewhat unexpected and will be further examined in the multivariate analysis to assess whether additional variables may alter this outcome.

Turning to soft skills, we observe a significant relationship between foreign language proficiency and the type of employment contract (Chi-square = 0.001, Cramér's V = 0.326). A strong command of foreign languages correlates with more stable employment: 40.2% of those with a high level of language proficiency hold a PC. Conversely, graduates with low language proficiency are more likely to be in fixed-term or other employment (20.5%). Thus, proficiency in foreign languages appears to be a key determinant of employment stability.

On the other hand, no significant relationship is observed between the type of contract and other soft skills, including the level of mastery of the computer tool or communication (Chi-square = 0.785). This suggests that the probability of obtaining a PC, a FTC, or another type of contract does not vary with the graduate's proficiency in these areas. In other words, competence in ICT or communication skills does not appear to influence employment stability in this specific sample. This result may reflect the relatively low weight attributed to these soft skills by employers in the Algerian context, particularly when recruiting graduates from quantitative or technical fields such as those taught at ENSSEA.

Finally, when examining the sociodemographic characteristics of graduates, the analysis reveals that variables such as graduation cohort, parental education level, and parental occupation do not significantly influence the type of employment contract. Only sex shows a statistically significant effect at the 10% level (Chi-square = 0.062), with female graduates being slightly more represented in fixed-term contracts.

Table 2. **Distribution of graduates by type of employment contract and independent variables**

	PC	FTC or other	N
Human Capital			
Additional Diploma Chi-square = 0.002 V Cramer= 0.270			
Yes	38.6%	13.6%	71
No	22.7%	25%	66
Field of studies Chi-square = 0.954			
Finance and actuarial science	27.3%	16.7%	70
Applied statistics	21.2%	14.4%	42
Applied economics and prospective	12.1%	8.3%	25
Social Capital			
Social capital mobilized Chi-square = 0.005 V Cramer = 0.280			
Strong ties	9.8%	15.9%	38
Weak ties type 1	15.2%	7.6%	30
Weak ties type 2	36.4%	15.2%	69
Latent social capital: Work experience while studying Chi-square = 0.511			
Yes, strong relation	30.1%	23.3%	76
Yes, weak relationship	16.5%	8.3%	33
No	14.3%	7.5%	28
Soft skills			
Proficiency in foreign languages Chi-square = 0.001 V Cramer = 0.326			
Low level	13.6%	20.5%	47
Medium level	6.8%	5.3%	17
High level	40.2%	13.6%	73
Other Soft skills Chi-square = 0.785			
Low level	6.1%	5.3%	17
Medium level	17.6%	11.5%	38
High level	37.4%	22.1%	82
Socio-demographic characteristics			
Sex Chi-square = 0.062			
Female	39.4%	18.9%	64
Male	22%	19.7%	73
Year of graduation Chi-square = 0.111			
2017	28%	10.6%	52
2018	17.4%	14.4%	47
2019	15.9%	13.6%	38
Father's level of education Chi-square = 0.147			
Low level	8.3%	7.6%	24
Medium level	22%	18.2%	52
High level	31.1%	12.9%	61

continuation of Table 2

	PC	FTC or other	N
Mother's level of education Chi-square = 0.108			
Low level	12%	13.5%	34
Medium level	24.8%	10.5%	49
High level	24.1%	15%	54
Father's profession Chi-square = 0.352			
Employee	46.6%	27.8%	101
Self-employed	9.8%	9.8%	27
Other	4.5%	1.5%	9
Mother's profession Chi-square = 0.593			
Employee	18.7%	11.9%	42
Self-employed	3%	3.7%	9
Other	38.8%	23.9%	86
Total	**60.9%**	**39.1%**	**137**

Source: calculated by the authors with SPSS.

Binary logistic regression

To determine which factor (CH, CS, SS) best predicts the type of contract, we performed a binary logistic regression.

Interpretation of the binary logit model results

In Model (1), we examine the influence of human capital on the type of contract. According to the results presented in Table 3, there is a significant correlation between obtaining an additional diploma and the type of contract. The results indicate that the probability of accessing a permanent job tends to increase with obtaining an additional diploma (OR=3.218). It seems that the knowledge and skills acquired during further training appear to contribute to employment stability. However, regarding the field of study, the results of the logistic regression confirm what was observed in the bivariate analysis, demonstrating that for ENSSEA graduates, the training speciality is not a determining factor for the type of work contract.

In Model (2), in addition to human capital, we examine the impact of social capital on the type of contract. By analysing the results, we find that the strength of the social ties mobilised to find a job has a significant influence on the probability of accessing a permanent contract. The results indicate that graduates who have obtained a job thanks to information from an employment agency, on the Internet or in a newspaper (weak ties type 2) are 3.9 times more likely to have access to a permanent contract. Regarding work experience during studies (latent social capital), the logistic regression results align with bivariate outcomes, indicating that such experience, even when related to the type of studies, does not have a significant effect on the type of contract.

Overall, the results indicate that the impact of social capital on the type of contract is rather limited. Adding social capital variables to Model (1) produced only a modest effect on the results. Although the likelihood ratio of model-explained deviance (LR) showed a statistically significant increase, this rise is relatively small. The R^2 increased from 0.0612 to 0.1225, a rise of just 6 percentage points.

In Model (3), we introduced variables related to soft skills. The results indicate that the type of contract is influenced by the level of foreign language proficiency (French and/or English). Graduates with a high level of mastery are 6 times more likely to obtain a permanent contract. On the other hand, the other soft skills, including the level of mastery of the computer tool or communication, don't seem to be correlated to the type of employment contract.

In general, the results reveal that the inclusion of soft skills variables in the model resulted in a relatively modest increase (9%) in the explained variance and had only a minimal effect on the coefficients associated with human and social capital, which indicates that their impact on the type of contract is rather small.

In Model (4), we take into account variables associated with the sociodemographic characteristics of graduates (control variables). It appears that only the year of graduation and the mother's level of education have a significant but relatively modest influence. Indeed, graduates in 2017 have a higher probability of having a stable job. In addition, we observed that graduates whose mothers have a medium level of education are approximately three times more likely to obtain a permanent contract compared to those whose mothers have a low level of education.

The presence of these sociodemographic variables does not substantially alter the effects associated with human capital, social capital, and soft skills. However, despite this limited change, the pseudo-R^2 value increases by 9 percentage points, rising from 0.2116 to 0.3265. Consequently, econometric Model (4) appears to be the most suitable for predicting the type of employment contract.

The addition of these variables does not seem to significantly change the effect associated with human capital, social capital and soft skills. However, despite this slight change, pseudo-R^2 increased by 9 percentage points, from 0.2116 to 0.3265. Therefore, it is obvious that the econometric Model (4) is the most appropriate for predicting the type of contract.

Validation of the econometric model

Based on the results, Model (4) is overall significant at the level of 5%, with a probability associated with the overall significance test equal to 0%. In other words, this means that at least one coefficient in the specified model is significant, with a 5% risk of error. Moreover, the pseudo-R^2 is 0.3265, which means that the model explains 32.65% of the variation in access to employment. This indicates that the model provides average information about the relationship between the explanatory variables and the dependent variable (Table 3).

Table 3. **The results of the binary logit model for access to permanent employment**

Variables	Model (1)		Model (2)		Model (3)		Model (4)	
	Coefficients	OR	Coefficients	OR	Coefficients	OR	Coefficients	OR
Human capital								
Additional Diploma [a]:								
Yes	1.17***	3.218***	0.99***	2.7***	0.63***	1.873***	0.68***	1.982***
Training speciality [b]:								
Applied statistics	-0.01	.986	-0.02	.977	0.09	1.094	0.26	1.292
Economics and foresight	-0.19	.824	0.06	1.059	0.03	1.03	0.34	1.402
Social capital								
Social capital mobilised [g]:								
Weak ties type1	-	-	1.25**	3.503**	1.33**	3.763***	2.07***	7.936***
Weak ties type2	-	-	1.37***	3.942***	1.83***	6.251***	2.48***	11.936***
Capital social latent [b] *:*								
Yes, a weak relationship	-	-	0.28	1.324	0.12	1.129	0.36	1.438
No, no relationship	-	-	0.51	1.664	0.86	2.354	0.90	2.468
Soft skills								
Mastery of foreign languages [e]:								
Medium level	-	-	-	-	1.37*	3.94*	1.37*	3.953*
High level	-	-	-	-	1.90***	6.68***	1.84***	6.294***
Other soft skills [e]:								
Medium level	-	-	-	-	0.70	2.013	0.44	1.557
High level	-	-	-	-	0.31	1.359	0.07	1.077
Socio-demographic characteristics								
Sex [c]:								
Male	-	-	-	-	-	-	-0.26	.768
Year of graduation [d]*:*								
2018	-	-	-	-	-	-	-1.11*	.331*
2019	-	-	-	-	-	-	-1.60**	.203**
Father's level of education [e]*:*								
Medium level	-	-	-	-	-	-	0.37	1.453
High level	-	-	-	-	-	-	1.21	3.353
Mother's level of education [e]*:*								
Medium level	-	-	-	-	-	-	1.22*	3.38*
High level	-	-	-	-	-	-	0.29	1.333
Profession of father [f]*:*								
Unemployed	-	-	-	-	-	-	-0.47	.627
Other	-	-	-	-	-	-	0.52	1.689

continuation of Table 3

Variables	Model (1)		Model (2)		Model (3)		Model (4)	
	Coefficients	OR	Coefficients	OR	Coefficients	OR	Coefficients	OR
Mother's occupation:								
Unemployed	-	-	-	-	-	-	-1.48	.228
Other	-	-	-	-	-	-	0.71	2.031
Constant	-0.13	.876	-1.21**	.299**	-2.86***	.058***	-3.77***	.023***
Hosmer-Lemeshow, DL(8)	-		-		-		***Khi²: 4.83 Depth > Chi² :0.7755***	
Area Below ROC	-		-		-		**0.8559**	
LR chi-two	**11.30**		**22.61**		**39.05**		**60.27**	
Prob > khi deux	**0.0102**		**0.0020**		**0.0001**		**0.0000**	
DL	**3**		**7**		**11**		**22**	
Pseudo R2	**0.0612**		**0.1225**		**0.2116**		**0.3265**	
N	**137**		**137**		**137**		**137**	

Legend:

• Reference category: a: No, b: Finance and actuarial science, c: Female, d: 2017, e: Low level, f: Employee, g: Strong ties

• p < 0.01, ** p < 0.05, * p < 0.1

Source: compiled from field results under STATA.

In order to assess the quality of the estimated model (model 4), we used the Hosmer-Lemeshow test. Noting that this test allows us to compare the estimated and observed frequencies using a chi-square statistic. The null hypothesis of this test is the equality of these two proportions. Thus, the specified model is considered to be well calibrated when the two frequencies are close. The results reveal that the probability associated with this test is 0.7755> 0.05, indicating that the model chosen is well calibrated to this threshold (Table 3).

To evaluate the suitability of the model, we use the ROC (Receiver Operating Characteristic) curve. The area under this curve, as shown in the table, is estimated at 0.8559, which shows good discriminating power. In other words, the specified model is able to accurately predict the probability of accessing a permanent job.

Discussion of the Results

Contrary to widely documented inequalities in labour market access based on gender, field of study, or prior work experience during studies (Wapoh, 2013; Gblokpor-Koffi, 2020), our findings suggest a more nuanced reality in the Algerian context. Using a binary logistic regression model applied to a sample of 335 graduates from ENSSEA, we show that employment stability as measured by access to a permanent contract (PC) is primarily influenced by individual-level factors, particularly the accumulation of human capital and the nature of social capital mobilised.

One of the most consistent results concerns the role of academic capital. Holding an additional degree significantly increases the likelihood of securing a permanent contract, while the field of

specialisation does not appear to play a differentiating role. This outcome contradicts earlier findings that associate technological disciplines, especially ICT and engineering, with more favourable labour market outcomes (Gblokpor-Koffi, 2020). A plausible explanation lies in the relative homogeneity of our sample, where most graduates come from economics-related programs within the same institution. Consequently, employers may perceive candidates as substitutable, reducing the informational value of disciplinary specialisation in the hiring process. In line with the cumulative advantage hypothesis (Merton, 1968), continued investment in formal education appears to function as a protective mechanism against contractual insecurity.

In terms of social capital, the findings offer empirical support to the theoretical propositions advanced by Granovetter (1973) and Lin (1999). Weak ties (understood as occasional or institutional relationships) are positively associated with stable employment. Respondents who mobilised connections with public employment services, former instructors, or university career centres were more likely to secure permanent jobs. This confirms prior research showing that weak ties provide access to more diverse and non-redundant sources of information (Burt, 1992), particularly in labour markets where formal hiring channels remain underdeveloped.

In contrast, reliance on strong ties (family or close acquaintances) was not significantly associated with employment stability, suggesting that such networks may reinforce pre-existing constraints rather than open new opportunities. These findings mirror Gblokpor-Koffi's (2020) results in West Africa and raise questions about the effectiveness of familial intermediation in saturated or segmented labour markets.

Interestingly, and in contrast with much of the existing literature, prior work experience during university studies does not have a statistically significant effect on employment stability. Although prior research has emphasised the signalling role of student jobs and internships in demonstrating employability (Albandea, Giret, 2018), this result may reflect the low institutionalisation of professional pathways within Algerian higher education. Internships remain short, often unstructured, and weakly integrated into academic curricula, which may limit their impact on job placement outcomes. Alternatively, employers may not systematically value informal or part-time student employment in their hiring criteria.

Turning to soft skills, our findings partially confirm their strategic importance in graduate employability. While digital literacy was not found to influence access to permanent contracts, mastery of foreign languages, particularly French and English, was significantly associated with employment stability. This corroborates the growing body of research highlighting the value of linguistic skills in accessing formal employment, particularly in contexts marked by globalisation and a strong public–private divide (Salleh et al., 2015; Joanna, Azlina, 2020).

The apparent disconnect between digital skills and stable employment may reflect a misalignment between university training and employer expectations, or the absence of effective certification and assessment mechanisms for digital competencies.

From a socio-demographic perspective, graduation year and parental education were found to influence job stability. Graduates from earlier cohorts (particularly 2017) were more likely to hold a permanent position, confirming the positive relationship between time since graduation and employment quality (Ayadi, 2023). Furthermore, the mother's level of education had a significant and positive effect on employment stability, suggesting that intergenerational transmission of cultural capital continues to shape labour market trajectories in the region.

In contrast, gender did not emerge as a significant predictor of employment type. Both male and female graduates showed similar probabilities of accessing a permanent contract, contradicting findings from neighbouring countries that point to persistent gender disparities (Wapoh, 2013). This result may reflect the relatively egalitarian recruitment practices within Algerian public administration and national companies, which absorb a large share of graduates from elite institutions like ENSSEA.

Taken together, these results suggest that graduate access to stable employment is driven by a combination of educational investment, informational capital, and socio-cultural background.

However, the absence of effects for some expected variables, such as disciplinary specialisation, gender, and student employment, calls for deeper investigation into institutional dynamics and labour market segmentation in Algeria. In particular, the role of public recruitment systems, wage compression, and credential inflation may warrant closer attention.

Future research could benefit from a mixed-methods approach, combining statistical modelling with qualitative interviews to capture employer rationales, job matching mechanisms, and institutional path dependencies.

Conclusion

The purpose of this paper was to explore the determinants of graduate job stability in Algeria, with a particular focus on the transition from fixed-term to permanent contracts. More specifically, the study aimed to examine the role of human and social capital and soft skills in shaping access to stable employment among higher education graduates in Algeria. Algeria serves here as a representative case for many countries in the Global South where youth employment is marked by high uncertainty and limited access to decent work. The findings show that while formal education remains a key determinant, particularly through the attainment of additional academic qualifications, other dimensions such as weak social ties and transversal competencies, notably foreign language proficiency, also play an important role in improving access to stable employment.

Limited support is found for the influence of commonly emphasised factors such as gender, field of study, or student employment. This result aligns with the objective of evaluating the relative importance of human, social, and skills-based resources and indicates that educational attainment alone does not fully account for labour market integration. It also suggests that assumptions derived from Global North contexts may not be fully transferable to environments where recruitment practices and social reproduction shape career trajectories.

The analysis further reveals the persistent influence of family background, particularly maternal education, on employment outcomes, pointing to deeper structural inequalities that extend beyond individual merit.

These findings carry several implications for policymakers and higher education institutions. Educational policies should encourage not only formal credential accumulation but also the diversification of professional networks and the acquisition of transversal competencies. Universities could better integrate institutionalised career services and employer partnerships to support graduates in their job search, especially for those lacking strong social capital. In addition, labour market policies should address segmentation in the labour market by ensuring that public recruitment systems are transparent and performance-based, rather than reliant on informal referrals or social origin.

This study has some limitations. The use of self-reported data from a single institution may affect the generalizability of the results. Future research should expand to include longitudinal and multi-institutional datasets to strengthen external validity. Furthermore, while our model captures several key variables, others (such as employer perceptions, labour market dynamics, and institutional gatekeeping) remain underexplored and merit further investigation. Finally, a broader assessment of job quality beyond contract type (e.g., salary, social protection, career progression) would enrich the analysis of employment stability.

Despite these limitations, this study contributes to the literature on graduate employability in the MENA and African regions by providing empirical evidence on the combined influence of educational, relational, and skill-based factors in shaping access to stable employment.

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