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Alignment between education and the labor market: what impact on youth employability

ERRASSAA Noureddine[1], EL ABDELLAOUI Latifa[2]

[1] Cadi Ayyad University Marrakesh, Morocco

[2] Cadi Ayyad University Marrakesh, Morocco

Abstract: This study analyzes the impact of the alignment between education and the labor market on the employability of young graduates in Morocco, in a context marked by an expansion of educational supply and the persistence of difficulties in labor market integration. Drawing on human capital theory, the research examines the extent to which different dimensions of skills acquired during educational pathways contribute to strengthening employability. The empirical analysis is based on a sample of 296 young graduates from higher education and vocational training, and mobilizes a Tobit model in order to account for the censored nature of the employability variable measured on a Likert scale. The results highlight a clear hierarchy of employability determinants, showing that skills that are directly usable and recognized by the labor market play a central role in professional insertion. By contrast, certain dimensions related to experience or adaptability do not produce immediate and statistically significant effects, suggesting that their benefits are more likely to materialize in the medium or long term. The study also reveals the persistence of gender-based differences, underscoring that employability depends not only on individual characteristics but also on institutional and social factors. Overall, the findings confirm that improving youth employability in Morocco requires strengthening the coherence between training content and the real needs of the labor market. This research thus provides useful insights to guide educational and employment policies toward a qualitative approach focused on the relevance of skills and the reduction of education–employment mismatches.

Keywords: Youth employability; education–employment alignment; human capital; labor market; Morocco.

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1 Introduction

The employability of young graduates has now emerged as a major issue in economic and social policies, particularly in countries facing a structural transition of their productive systems. In Morocco, this issue takes on particular importance in a context marked by the rapid expansion of higher education and vocational training, without this dynamic being accompanied by a proportional improvement in labor market integration conditions. Graduate unemployment, underemployment, and access to jobs that do not correspond to the level or field of training reflect a persistent mismatch between educational supply and economic demand. This situation raises fundamental questions about the ability of the education system to effectively prepare young people for the real requirements of the labor market. It also highlights the limitations of an approach to education based primarily on the accumulation of diplomas, to the detriment of the relevance and effective valorization of acquired skills. In an economic environment shaped by digitalization, skills upgrading in productive sectors, and gradual openness to

international markets, employability increasingly appears as the result of alignment between education, skills, and firms' needs, rather than as a simple extension of academic trajectories.

In this context, analyzing the alignment between education and the labor market constitutes a relevant framework for understanding the difficulties of labor market integration among young graduates in Morocco. The literature emphasizes that employability depends closely on the quality of human capital, individuals' ability to mobilize recognized skills, and the coherence between educational pathways and available professional opportunities. Technological and organizational transformations reinforce this requirement for alignment by valuing profiles capable of adapting to rapid changes in occupations and production modes. However, labor market outcomes in Morocco suggest that not all dimensions of education generate the same effects in terms of employability, and that certain educational investments yield lower-than-expected returns. It therefore becomes necessary to identify the most decisive skill levers for professional insertion, while taking into account the structural and institutional factors that influence access to employment. It is within this perspective that this work is situated, aiming to empirically analyze the mechanisms through which education–employment alignment shapes the employability of young graduates in Morocco.

2 Literature review

Altbach and Knight (2007) show that the internationalization of higher education modifies skill frameworks by integrating norms and practices derived from the global labor market, implying a possible improvement in the relevance of training with respect to contemporary professional requirements. This international openness suggests that graduates exposed to transnational standards possess profiles that are potentially better recognized by employers, while also revealing tensions when these skills do not fully correspond to local economic realities. Schneider and Stevenson (1999) extend this reflection by emphasizing that coherence between educational expectations and professional aspirations conditions the quality of the transition into employment. Their concept of alignment implies that young people whose educational projects correspond to the qualifications required by targeted occupations develop more stable trajectories. Gong et al. (2004) provide complementary insight by showing that the wage return to education varies according to the sector of insertion, with the wage premium in the formal sector increasing with skill level. This relationship implies that when training is aligned with the needs of the formal market, young people benefit from a more pronounced economic advantage, thereby strengthening the link between skill alignment, professional insertion, and sustainable employability.

Blossfeld (1991) highlights that the standardization of training programs and the existence of recognized professional norms facilitate the readability of skills for employers, implying a better conversion of educational credentials into employment opportunities. This institutional recognition suggests that alignment between education and the labor market does not rely solely on the level of education, but also on the clarity of the signals sent to recruiters. Sabates et al. (2011) deepen this logic by distinguishing different degrees of alignment between professional aspirations and educational expectations as early as adolescence. They show that uncertainty or mismatch at this stage is associated with more unstable professional trajectories and unfavorable labor market outcomes in adulthood. Mulder (2014) reinforces this perspective by arguing that competence constitutes the central foundation of the relevance of vocational and higher education. His approach implies that youth employability depends on the capacity of educational systems to translate training content into skills that are directly mobilizable in professional contexts. The articulation of these studies suggests that education–employment alignment acts simultaneously as a mechanism of institutional signaling, coherence of individual pathways, and effective valuation of skills in the labor market.

Elias and Purcell (2013) propose a classification of jobs held by graduates based on the skills mobilized, implying a more refined assessment of the correspondence between completed training and actual professional requirements. Their approach suggests that employability depends not only on access to employment, but on the quality of the match between the content of studies and the skills required. Biggs (1999), through the theory of constructive alignment, argues that coherence between learning objectives, teaching activities, and assessment methods conditions the effectiveness of training. Applied to vocational education, this logic implies that competency

frameworks must be explicitly linked to labor market expectations in order to strengthen the usefulness of qualifications. Abiodun-Oyebanji and Ojetunde (2016) extend this idea by showing that the direct integration of economic needs into the design of technical and vocational training programs facilitates graduate insertion. Their work suggests that when curricula are designed in interaction with market demands, young people acquire immediately usable skills, thereby reducing frictions at labor market entry.

Hamilton (1992) emphasizes that vocational training systems based on specific qualifications tend to strongly structure access to skilled jobs, implying that only individuals who have followed appropriate training pathways can cross certain occupational boundaries. This perspective suggests that employability depends closely on the correspondence between credentials held and formal job requirements. Van Noy and Cleary (2017) broaden this approach by defining education–labor market alignment as an institutional process aimed at producing graduates in sufficient numbers and with skills adapted to market needs, while respecting students' professional aspirations. Their framework implies that employability relies on continuous coordination between training institutions, employers, and public decision-makers. Arikawee et al. (2024) show that continuing education and professional development do not systematically lead to career advancement when acquired skills do not correspond to actual market expectations. Their results imply that the accumulation of training, in the absence of explicit alignment with economic needs, limits gains in employability.

Cappelli (2014) shows that mismatches between available and demanded skills result from the constant evolution of employer needs, implying that education–labor market alignment is a dynamic process rather than a stable state. This instability complicates the ability of educational institutions to accurately anticipate future needs. Carruthers et al. (2024) complement this reflection by distinguishing spatial alignment, linked to local labor market needs, and temporal alignment, related to the adaptation of programs to economic changes. Their framework suggests that youth employability depends on the ability of training programs to be embedded both in territorial realities and in long-term dynamics. Beduwe and Giret (2011) analyze the mismatch among vocational training graduates and show that horizontal mismatch remains high, while vertical mismatch leads to more limited penalties once job characteristics are taken into account. These results imply that not all forms of mismatch affect employability in the same way.

D'Amico et al. (2019) highlight the role of community colleges in preparing the local workforce, emphasizing the need to adjust programs to the specific needs of territorial labor markets. This adaptation implies a better transition of young people into employment when training is designed in close connection with local employers. Pagés and Stampini (2009) nevertheless show that education does not automatically guarantee access to better-quality formal jobs in developing countries, due to the persistence of labor market segmentation. Their analysis implies that even in the presence of a high level of education, employment opportunities remain constrained by structural barriers. Froeschle (2010) highlights methodological difficulties related to measuring education–employment alignment, due to limitations in available data on skill supply and demand. It follows that the evaluation of youth employability requires a cautious and multidimensional reading of labor market information.

Edwards-Fapohunda and Taqa (2024) show that adult education and lifelong learning contribute to strengthening alignment between skills and economic needs when coherent educational policies support collaboration among institutional actors. This coordination implies an improvement in employability through adjustable training pathways. Grosz (2022) highlights the limits of the institutional responsiveness of community colleges to rapid labor market changes, pointing to shortcomings in program and resource adaptation. This inertia implies that young people may be trained for skills that have become partially obsolete. Montt (2015) analyzes the consequences of mismatch between field of study and employment and shows that affected workers incur wage penalties, particularly when their level of education exceeds that required by the job held. These results imply that employability is not measured solely by access to employment, but also by the ability to occupy positions corresponding to the level and field of training.

Jacoby (2019) emphasizes that the recent orientation of vocational education in community colleges is guided by increased attention to student labor market outcomes, making alignment between programs and professional

opportunities an institutional priority. This evolution implies a redefinition of educational missions in favor of employability. Humphreys (2016), for his part, defends the value of liberal education by showing that it develops transferable skills adapted to a globalized and technological labor market. His approach suggests that alignment is not limited to specific technical skills, but includes general capacities that promote professional adaptability. Altbach and Knight (2007) complement this perspective by showing that the internationalization of higher education contributes to this adaptability by exposing students to diverse academic and professional environments. The articulation of these works implies that education–labor market alignment can take multiple forms, combining specialized skills and transversal skills, and that this complementarity strengthens youth employability in uncertain economic contexts.

3 Methods

3.1 Formulation of research hypotheses

Human capital theory developed by Becker (1964) considers education as a productive investment that increases individuals' economic value and facilitates their integration into the labor market. From this perspective, several levers can be highlighted to strengthen the alignment between education and employment. The acquisition of specialized technical skills makes it possible to directly respond to firms' needs by offering expertise that is immediately mobilizable. The development of digital skills has also become essential in a context where digitalization is transforming modes of production and management. The improvement of language skills plays a decisive role in an environment characterized by international openness and professional mobility. In addition, education fosters innovation and creativity skills, which are necessary to face competition and adapt to rapid sectoral changes. The consolidation of social and relational skills facilitates cooperation, team management, and integration into complex environments. Finally, education strengthens the capacity for lifelong learning, enabling individuals to update their knowledge and remain competitive in the face of constant occupational change. This reading of human capital theory thus opens the way to presenting the key levers that structure the analysis of alignment between education and the labor market:

- **Technical, digital, and language skills:** An individual's employability is strongly conditioned by the solidity of their technical and cognitive human capital. The acquisition of specialized skills, such as accounting, programming, or industrial design, provides know-how that is immediately mobilizable and valued in the labor market. This is complemented by mastery of digital tools, which has become indispensable in a context where digitalization is transforming modes of production and communication. Finally, language skills, particularly in English, expand access to international opportunities, strengthen professional mobility, and increase the overall competitiveness of individual profiles.
- **Interpersonal skills and practical experience:** Beyond technical knowledge, employers place growing importance on interpersonal skills, or soft skills. Communication, leadership, conflict management, and teamwork represent essential qualities for success in complex and collaborative environments. At the same time, professional experience acquired through internships, freelance assignments, or work-study programs constitutes a strong signal of credibility. It provides individuals with hybrid capital that combines theoretical and practical knowledge, thereby facilitating labor market entry and adaptability to professional requirements.
- **Adaptability and lifelong learning:** In a labor market characterized by uncertainty and rapid innovation, the ability to continuously learn becomes a central lever of employability. Individuals who are able to update their knowledge and develop new skills significantly improve their value in the eyes of employers. Adaptability is not merely an individual disposition, but a strategic competence that makes it possible to respond to technological and organizational changes. Lifelong learning thus ensures sustainable employability by strengthening resilience and preparing individuals to meet future labor market challenges.

The analysis of employability through the lens of human capital theory highlights that education is not limited to the acquisition of theoretical knowledge, but constitutes a strategic investment that shapes individual

competitiveness in the labor market. Technical, digital, and language skills provide a foundation that immediately enhances human capital and opens access to new opportunities. These are complemented by interpersonal skills and practical experience, which strengthen profile credibility and facilitate integration into complex professional environments. Finally, adaptability and lifelong learning represent an essential resource for ensuring sustainable employability in a context marked by innovation and uncertainty. On this basis, the hypotheses are formulated as follows:

- ***H1: The acquisition of specialized technical skills has a positive impact on the employability of young graduates.***
- ***H2: The development of digital skills has a positive effect on the employability of young graduates.***
- ***H3: Improvement in language skills contributes positively to the employability of young graduates.***
- ***H4: Strengthening interpersonal skills (soft skills) has a positive impact on the employability of young graduates.***
- ***H5: Practical experience acquired through internships and work-study programs positively influences the employability of young graduates.***
- ***H6: Adaptability and engagement in lifelong learning have a positive effect on the employability of young graduates.***

3.2 The model

The proposed research model aims to empirically analyze the effect of the different human capital levers on individuals' employability. The main explanatory variables capture technical, digital, and language skills, as well as interpersonal abilities, practical experience, and adaptability through lifelong learning. The model is therefore specified as follows:

$$EMPL = \beta 0 + \beta 1\, COMP + \beta 2\, NUME + \beta 3\, LANG + \beta 4\, SOFT + \beta 5\, EXPR + \beta 6\, ADAP + \gamma 1\, AGEE + \gamma 2\, GENR + \varepsilon$$

The dependent variable retained in this model is the employability of young graduates (EMPL). It is measured on a Likert scale ranging from 1, corresponding to very low employability, to 5, indicating very high employability. Among the explanatory variables, COMP denotes specialized technical skills. It integrates dimensions such as mastery of practical know-how, use of technical tools, understanding of standards and procedures, ability to solve complex cases, professional autonomy, and the quality of outputs produced. NUME refers to digital skills, assessed through the ability to use office software, data management, use of collaborative platforms, mastery of job-related digital tools, basic programming, and digital security. LANG represents language skills. Its indicator is based on oral and written fluency, comprehension of technical documents, communication in multilingual contexts, report writing, presentation delivery, and negotiation skills. SOFT refers to interpersonal skills, constructed around six items: interpersonal communication, teamwork, time management, behavioral flexibility, problem-solving, and leadership or initiative-taking.

EXPR measures professional experience through completed internships, work-study programs, projects carried out with firms, freelance assignments, responsibilities assumed, and the diversity of professional environments. ADAP captures adaptability and lifelong learning, assessed through the ability to engage in self-directed training, reactions to change, versatility, openness to new skills, professional monitoring, and the transfer of acquired knowledge. All these explanatory variables, inspired by human capital theory, are measured by six items each, rated on a Likert scale from 1 to 5, with the mean serving as the indicator. Finally, two control variables are included: age (AGEE), measured in years as a continuous variable, and gender (GENR), coded in binary form, for example 0 for female and 1 for male.

3.3 Choice of empirical method

The choice of a Tobit model in this study is justified by the nature of the dependent variable, namely the employability of young graduates (EMPL), measured on a Likert scale ranging from 1 to 5. This variable is censored in nature, as it is bounded by minimum and maximum values that constrain its distribution. The use of

ordinary least squares (OLS) regression would lead to biased and inefficient estimates, since it assumes an unconstrained continuous variable and could predict values outside the defined interval. The Tobit model, introduced by Tobin (1958), precisely addresses this issue by accounting for the censoring of observations, thereby providing coefficients that are more consistent and interpretable in the context of bounded dependent variables. In the context of employability, this methodological choice is relevant because it reflects the statistical reality that some young graduates necessarily lie at the lower bound (very low employability) or the upper bound (very high employability), with no possibility of values beyond these limits.

3.4 Presentation of the sample

The empirical analysis is based on a sample of 296 Moroccan young graduates, constructed through a questionnaire survey aimed at assessing the impact of the alignment between education and the labor market on employability. The respondents are individuals who are recently integrated or in the process of integration into the Moroccan labor market, holding a degree from higher education or vocational training. This choice makes it possible to capture the initial phases of the transition between the national education system and employment, in a context marked by persistent challenges related to youth labor market integration. The diversity of the selected profiles offers a varied representation of professional situations, ranging from trajectories characterized by rapid integration to more discontinuous paths marked by periods of unemployment or precarious employment. Employability is assessed through an ordered scale with five levels, ranging from a very low perception to a very high perception, allowing for the capture of gradual differences in young graduates' ability to access employment, remain employed, and envisage career progression.

The sample includes individuals belonging to different age groups, reflecting heterogeneous levels of professional experience, as well as men and women, which makes it possible to take into account potential gender-related disparities in access to employment conditions in Morocco. The respondents come from diversified socio-economic backgrounds and varied educational tracks, covering several fields of study and training streams, thereby allowing for an analysis of employability from a broad and non-sectoral perspective. In addition, the information collected covers several dimensions of education and professional experience, assessed through perception-based items measured on a Likert scale. The mean scores derived from these items are used as synthetic indicators, ensuring a homogeneous measurement of skills, experience, and adaptability among Moroccan young graduates.

4 Results

4.1 Robustness analysis

Table 1 presents the results of the Ramsey RESET specification test applied to the model. The values obtained for the t-statistic (0.5188), the F-statistic (0.2691), and the likelihood ratio (0.2784) are associated with respective probabilities of 0.6043 and 0.5977. These probabilities, all above the usual significance thresholds, indicate that the inclusion of the squared fitted values does not produce any notable variation in the estimated equation. The table also reports the SSR Test value (0.0209), as well as the restricted and unrestricted SSR, equal to 22.29744 and 22.27648, respectively. In terms of specification, the results imply that the test does not provide evidence suggesting systematic omission of variables or functional misspecification according to the adopted criteria.

Table 1. Results of the Ramsey RESET specification test

Specification: EMPL C COMP NUME LANG SOFT EXPR ADAP AGEE GENR			
Omitted Variables: Squares of fitted values			
	Value	df	Probability
t-statistic	0.518813	286	0.6043
F-statistic	0.269166	(1, 286)	0.6043
Likelihood ratio	0.278447	1	0.5977
F-test summary:			
	Sum of Sq.	df	Mean Squares
Test SSR	0.020965	1	0.020965
Restricted SSR	22.29744	287	0.077691
Unrestricted SSR	22.27648	286	0.077890

Source: authors;

Table 2 presents the Variance Inflation Factors (VIF) calculated for all the explanatory variables in the model. The centered VIF values reported for COMP (1.0330), NUME (1.0224), LANG (1.0171), SOFT (1.0226), EXPR (1.0313), ADAP (1.0054), AGEE (1.0223), and GENR (1.0189) are all well below the usual thresholds associated with the presence of multicollinearity. The uncentered VIF values, which are higher, reflect the inclusion of the constant term and do not constitute a direct indicator for interpreting collinearity among variables. Taken together, these results indicate, in statistical terms, that according to these indicators, the model shows no signs of marked linear dependence among the explanatory variables.

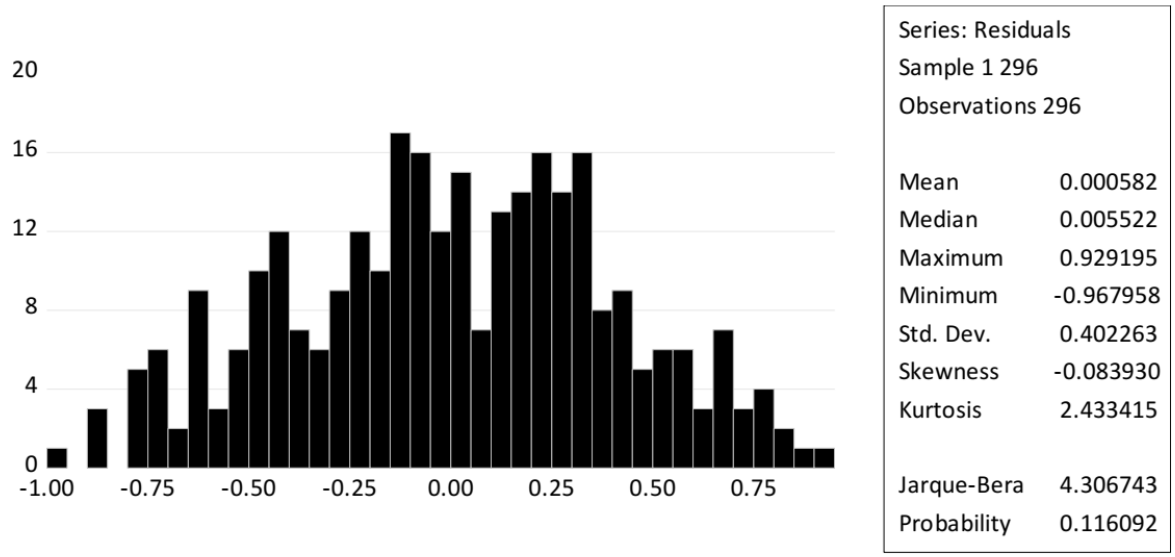
Table 2. Variance inflation factors (VIF)

Variance Inflation Factors Sample: 1 296 Included observations: 296			
Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.006930	26.40142	NA
COMP	0.003334	4.322492	1.033056
NUME	0.003244	4.133530	1.022416
LANG	0.003312	4.299261	1.017088
SOFT	0.003463	4.093401	1.022550
EXPR	0.003181	3.993031	1.031302
ADAP	0.003134	4.071322	1.005409
AGEE	0.003179	4.253991	1.022332
GENR	0.003443	4.283380	1.018909

Source: authors;

Figure 1 illustrates the distribution of the model's residuals as well as the results of the Jarque–Bera normality test. The histogram highlights a distribution that is generally centered around zero, with a mean of 0.000582 and a median of 0.005522. The observed extreme values range from −0.967958 to 0.929195. The standard deviation is 0.402663, while the skewness (−0.083930) and kurtosis (2.433415) remain close to the values associated with a normal distribution. The Jarque–Bera test yields a statistic of 4.306743 with a probability of 0.116092, which is above the usual significance thresholds. These results indicate that the distribution of the residuals does not deviate significantly from normality.

Figure 1. Distribution of residuals and normality test (Jarque–Bera)



Source: authors;

Table 3 reports three statistics that make it possible to assess the stability of the residual variance in the estimated model. The F-statistic takes a value of 0.731818 with a probability of 0.6634, indicating that the variations in the errors do not exhibit any particular structure associated with the explanatory variables. The Obs*R-squared statistic, equal to 5.917423 and accompanied by a probability of 0.6565, leads to the same interpretation by indicating that the residuals do not display abnormal dispersion likely to affect the estimates. The Scaled explained SS, with a value of 2.454217 and a probability of 0.9638, confirms this reading. Taken together, these results indicate that, according to this test, the variance of the residuals appears stable within the framework of this study.

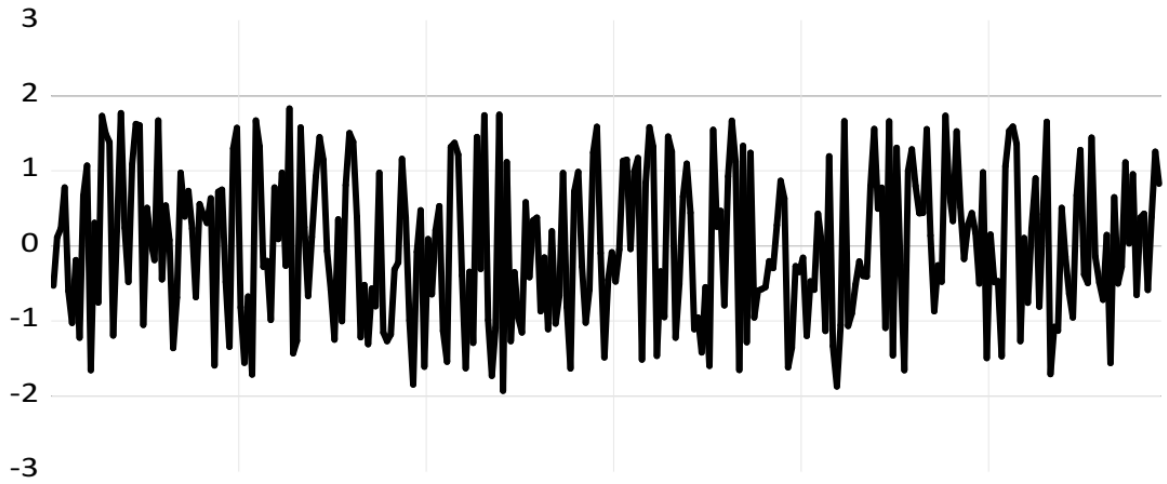
Table 3. Breusch–Pagan–Godfrey heteroscedasticity test

Statistic	Value	Associated Test	Probability
F-statistic	0.731818	F(8, 287)	0.6634
Obs*R-squared	5.917423	Chi-Square(8)	0.6565
Scaled explained SS	2.454217	Chi-Square(8)	0.9638

Source: authors;

Figure 2 presents the RStudent values associated with the model's observations, making it possible to visualize the standardized deviation between the residuals and the fitted values. The distribution generally oscillates between −3 and +3, which constitutes a range within which observations do not exceed the thresholds usually associated with strongly atypical points. The irregular alternation between positive and negative values, without a marked trend or abnormal clustering, indicates that the contribution of observations remains relatively homogeneous. Within the framework of this study, this configuration suggests that the model does not appear to be affected by outliers likely to alter the estimates. The observed dispersion also reflects overall model stability, with no observation standing out as particularly influential with respect to the displayed RStudent values.

Figure 2. Influence statistics: RStudent values



Source: authors;

The Ramsey RESET specification test yields probabilities above conventional thresholds, suggesting the absence of functional form misspecification. The variance inflation factors display centered values close to 1, indicating that the explanatory variables do not exhibit linear dependence likely to affect the estimated coefficients. The distribution of the residuals, examined through the histogram and the Jarque–Bera test, does not show any significant deviation from normality. The Breusch–Pagan–Godfrey test indicates that the variance of the residuals remains stable, with no evidence of heteroskedasticity. Finally, the analysis of the RStudent values does not reveal any outliers influencing the estimation. Taken together, these results suggest that the model exhibits satisfactory robustness according to the statistical criteria applied.

4.2 Tobit regression results

Table 4 presents the estimation of the censored Tobit model applied to the dependent variable EMPL. The table indicates that the estimation was carried out using the maximum likelihood method under a normally censored distribution, employing the Newton–Raphson and Marquardt algorithms. The sample includes 296 observations, with left censoring set at the value 1 and right censoring set at the value 5, corresponding to the bounds of the employability measurement scale. The model reached convergence after six iterations, indicating the stabilization of the parameters during the optimization process. Finally, the variance–covariance matrix of the coefficients was obtained from the observed Hessian, providing the necessary basis for statistical inference related to the model parameters.

Table 4. Results of the censored Tobit model (EMPL) estimated by maximum likelihood

Dependent Variable: EMPL
Method: ML - Censored Normal (TOBIT) (Newton-Raphson / Marquardt steps)
Sample: 1 296
Included observations: 296
Left censoring (value) series: 1
Right censoring (value) series: 5
Convergence achieved after 6 iterations
Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	9.310493	2.399317	3.880477	***0.0001
COMP	1.402709	0.452393	3.100641	***0.0021
NUME	14.326736	4.387299	3.265503	***0.0012
LANG	12.056807	4.493272	2.683302	***0.0077
SOFT	0.847698	0.466005	1.819077	*0.0699
EXPR	-2.147816	2.107615	-1.019074	0.3090
ADAP	0.402274	4.292582	0.093714	0.9254
AGEE	-5.163485	4.342781	-1.188981	0.2354
GENR	1.628331	0.548353	2.969492	***0.0032

Source: authors; *** significant at 1%; ** significant at 5%; * significant at 10%.

COMP shows a positive sign and a statistically significant effect at the 1% level (p = 0.0021), indicating that an increase in this lever is associated with an improvement in measured employability. This result leads to the acceptance of H1, implying that strengthening specialized technical skills directly enhances young graduates' ability to access and remain in employment by reinforcing the match between acquired know-how and professional requirements. NUME also displays a positive sign with significance at the 1% level (p = 0.0012). This result allows for the acceptance of H2 and suggests that mastery of digital tools and uses constitutes a central determinant of employability. The implication is that, in a context of increasing digitalization of economic activities, profiles endowed with digital skills benefit from a comparative advantage in the labor market.

LANG exhibits a positive sign and a significant effect at the 1% level (p = 0.0077). Hypothesis H3 is therefore accepted, implying that improvements in language skills contribute to strengthening employability. This result suggests that the ability to communicate in multilingual environments expands access to professional opportunities and improves mobility in the labor market. SOFT is associated with a positive sign and reaches significance at the 10% level (p = 0.0699). This result leads to the acceptance of H4 at a marginal level, indicating that interpersonal skills play a favorable, albeit more moderate, role in employability. The implication is that these skills complement technical knowledge by facilitating integration and performance in collaborative professional environments. EXPR shows a negative sign and a non-significant effect (p = 0.3090). This result leads to the rejection of H5, suggesting that practical experience, as measured here, does not exert a statistically demonstrated effect on employability. The implication is that the accumulation of experiences does not automatically translate into better labor market insertion when these experiences are not fully aligned with labor market expectations.

ADAP displays a positive sign, but its effect is statistically non-significant (p = 0.9254). Hypothesis H6 is therefore rejected, indicating that adaptability and lifelong learning do not translate, in this model, into a measurable impact on employability. This implies that these dimensions may produce indirect or long-term effects that are not immediately captured by the estimation. AGEE shows a negative sign and a non-significant effect (p = 0.2354), indicating that age does not exert a statistically established influence on employability in this sample. The implication is that observed differences in employability are better explained by human capital characteristics than by age per se. GENR displays a positive sign with significance at the 1% level (p = 0.0032), suggesting the existence of an employability differential by gender. This result implies that structural or institutional factors related to gender continue to influence access to employment independently of observed skills, highlighting the importance of integrating this dimension into the analysis of young graduates' professional trajectories.

5 Discussion

The results highlight a clear hierarchy among the determinants of young graduates' employability, confirming the central role of certain components of human capital. The positive and statistically significant effects observed for directly mobilizable skills indicate that employability primarily relies on knowledge and abilities recognized by the labor market. This configuration aligns with the idea that employers favor immediately operational profiles capable of meeting the technical, digital, and communication requirements of organizations. In a context such as Morocco's, characterized by a gradual transformation of the productive system and a growing digitalization of economic activities, these results suggest that the match between education and employment is built around skills with high economic value and immediate usefulness. The positive but more moderate effect of interpersonal skills confirms that they play a complementary role by facilitating professional integration, coordination, and efficiency in collaborative work environments, without substituting for technical and cognitive skills. By contrast, the absence of a significant effect of practical experience underscores that the accumulation of experiences does not automatically guarantee better employability, particularly when internships or professional pathways are weakly structured or insufficiently aligned with firms' real needs. This observation is consistent with the existence of insertion mechanisms that are sometimes formal but weakly integrative, limiting the transformation of experience into a competitive advantage in the labor market.

The results also reveal important insights regarding more transversal dimensions and individual factors. The absence of a significant effect of adaptability and lifelong learning suggests that these dimensions, although conceptually essential in an unstable and rapidly changing labor market, do not necessarily produce immediate and observable effects on perceived employability. This situation can be explained by the latent and long-term nature of these skills, whose benefits often emerge over the course of professional trajectories rather than at the moment of initial labor market entry. The lack of a statistically established influence of age indicates that, among young graduates, differences in employability are not explained by seniority or time elapsed since leaving the education system, but rather by the quality and relevance of the human capital held. By contrast, the existence of a differentiated effect by gender highlights the persistence of institutional, social, and cultural mechanisms that structure access to employment in Morocco. These results thus confirm that the alignment between education and the labor market is based on a combination of targeted skills and structural factors, calling for education and labor market insertion policies that are more closely connected to economic and social realities.

6 Conclusion

This study highlights that the employability of young graduates primarily results from the quality and nature of the human capital mobilized, rather than from the mere level of education attained. The results confirm that the alignment between education and the labor market is mainly based on skills with high economic use value, particularly technical, digital, and linguistic skills, which emerge as central levers of professional insertion. These dimensions reflect the ability of education systems to produce immediately operational profiles capable of meeting firms' productive and organizational requirements. In the Moroccan context, characterized by a gradual transformation of economic structures and a growing importance of skill-intensive activities, these findings underscore the limits of an education approach focused solely on the accumulation of diplomas. The relative importance of interpersonal skills, although more moderate, confirms their complementary role in stabilizing professional trajectories by facilitating integration and adaptation to work environments. By contrast, the absence of a significant effect of practical experience and lifelong learning invites a critical reflection on the quality, structuring, and institutional recognition of these dimensions within education and insertion pathways. These elements suggest that employability is not built mechanically, but rather depends on an effective alignment between training content, insertion mechanisms, and the real needs of the labor market.

At a more general level, the results show that employability cannot be understood as a strictly individual phenomenon based solely on the efforts or choices of young graduates. The significant effect of gender highlights the persistence of structural mechanisms that influence access to employment independently of observed skills, thereby underscoring the existence of institutional and social barriers in the Moroccan labor market. Moreover,

the absence of an age effect confirms that, in the early stages of professional life, differences in employability are more closely related to the composition of human capital than to seniority or accumulated experience. These conclusions argue for coordinated action among the Moroccan education system, economic actors, and public authorities in order to strengthen coherence between training programs and actual employment opportunities. They also call for a rethinking of guidance, internship, and apprenticeship schemes in order to improve their relevance and signaling value in the labor market. Ultimately, this research emphasizes that the sustainable improvement of youth employability in Morocco requires an integrated strategy combining skill quality, equity of opportunities, and continuous adaptation of training systems to economic change.

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