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ASSESSMENT OF EMPLOYMENT COMPETENCIES FROM THE PERSPECTIVE OF UNIVERSITY GRADUATES
Using a Reflective Structural Equation Model

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KEYWORDS

Graduates
Soft skills
Employability
Job quality
Job satisfaction
Structural equations

ABSTRACT

The main objective of this research is to analyze whether the competency training of graduates of a Spanish university facilitates quality employability and student satisfaction.
For this purpose, a total of 1,383 interviews were carried out between December 2023 and April 2024. This sample was evaluated using a reflexive structural equation model with Smart PLS 4, enabling the analysis of the reliability and validity of the relationships between causal variables among latent and manifest variables, as initially hypothesised.
Finally, the model confirms the strength of the relationship between the dependent variable and the independent variables, settling the direct effect of employability competencies on employability, quality of employment and student satisfaction.

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1. Introduction

The debate on the training-employment nexus is intensifying in the current educational and economic policies of the European Union. In today's dynamic work environment, employability has become a key objective for professionals and recent graduates. In this study, we will explore how skills training not only increases employment opportunities but also contributes to the personal and professional satisfaction of graduates by improving the quality of the jobs they find.

The CYD Foundation's Employability Report (2022) highlights that in Spain, the number of university graduates has been stable for the past two decades, averaging around 200,000 annually. However, the employment landscape has shifted. The unemployment rate for graduates from the years 2013-2014 saw a decline by 2019. Moreover, those employed in 2019 faced less stable job conditions, with a significant number holding part-time or low-skilled positions, often unrelated to their field of study, and typically earning below €1,500 net per month. This trend was particularly noticeable among arts and humanities graduates. The disparity in job quality across different fields of study was more pronounced than the overall employment rate.

In this context, the study of competencies in relation to educational mismatch is a crucial issue (Michavila et al, 2016). Although the European Higher Education Area recognises the relevance of training in these competencies, most universities still need specific subjects for their development. Moving from curricula based on the state of the art of academic knowledge (Yáñiz, 2008) to curricula focused on the competencies specific to a given field of professional activity is not simple. It will be necessary to redefine the curricula in order to have more cross-cutting content in the degrees. Although complex, it is vital for universities to make curricular changes and updates to position the educational programs of the different institutions at the level of international universities, offering as a competitive advantage the comprehensive training of their graduates.

The University must not only respond to the demands of the current labour market but must also be proactive, anticipating the new demands of existing jobs and emerging employment sources (Pagés Serra & Ripani, 2017). To achieve this, it will be necessary to invest in the development of better training systems that allow professionals to continuously update their skills, with employers collaborating in the identification of these skills as they are aware of the skill demands of the labour environment (Martín Gómez et al, 2023).

Despite all the problems raised and the fact that the very concept of competencies is diffuse, most of the studies and analyses on the work of the future and on higher education deal with the competencies required in the new scenarios. In this study, since it is easy to get lost among the numerous typologies and classifications available, reference will be made to the competencies needed by university graduates or those in the early stages of their professional careers. Therefore, the model to be analysed synthesises the main competency dimensions that reinforce the employability of graduates, based on: knowledge of the discipline and its application, generic and transferable skills, emotional self-regulation, skills related to career development, self-management and self-assessment of performance, and self-esteem and motivation (Römgern et al., 2020).

Competencies, understood as the set of skills, knowledge and attitudes that a person possesses, play a crucial role in job search and retention. Throughout these pages, we will analyse how technical competencies, interpersonal skills and adaptability directly impact the employability and quality of life of graduates.

In addition, we will examine how competencies not only open doors to employment but also influence long-term career paths. From problem-solving to effective communication, these skills are essential to meet the changing challenges of the job market and to achieve a successful career.

In summary, this article will demonstrate that investing in skills development not only improves employment prospects but also contributes to the personal fulfilment and professional success of graduates.

To this end, this research attempts to answer the following questions: (1) Do skills improve the employability of graduates? (2) Does skills training lead to higher-quality jobs? (3) Does this quality employment lead to more competent and satisfied students?

To this end, the study is organised with the development of the theoretical framework, analysing the importance of employability competencies and setting out the hypotheses of the model

established. Next, the methodology is described, and the data obtained through structural equations are analysed, followed by an analysis of the results obtained and the most relevant conclusions. Finally, the limitations of the study and future lines of research are established.

2. Theoretical Framework

The main objective of this study is to analyse the labour market insertion process of recent graduates of a Spanish university, where there is a specific training plan in transversal skills; there are several specific objectives, among which the following stand out: to characterise labour market insertion, both in current employment and in the company in which they work; to collect the evaluation of the current job, as well as its suitability to the training received; to collect the evaluation of the training received during the degree and to determine the level of self-attribution of a series of competencies by the graduates.

Therefore, the critical role of transversal competencies in enabling "employability" is discussed, as traditional occupations reconfigure, change and new roles rapidly emerge. Although definitions and classifications vary, it is agreed that transversal competencies are those that a person can apply in all job roles and life situations, being a platform for flexibility, adaptability and advancement.

In a review of the scientific literature, for a large majority of authors (Weinberg (2004); Alles (2007); García Manjón (2009); Moreno (2012)) employability is closely related to the employee's possession of skills, abilities or competencies that allow easier access to the labour market.

Within the framework of the Tuning Project, created for Latin America in 2004, with the purpose of improving learning conditions through the creation and classification of graduate profiles, the definition of competencies is framed under the denomination of "university competencies"; which represent the focus on actionable practical skills in instrumental, interpersonal and systematic areas, which students should develop during professional training in their careers; transversally and independently of those specific to the profession or subject they are studying (Del Alcázar, 2020).

The development of society and knowledge depends on the production of new knowledge and its transmission through education, training and the dissemination of its use through the university, whose fundamental mission is to provide sufficient training and qualifications to enable the employability and competitiveness of its graduates (Martín Del Peso et al., 2013).

Along the same lines are other authors, such as Cejas et al. (2019), Casanova et al. (2018); and Jiménez-Silva et al. (2019) for whom competency training should be part of any university curriculum.

Despite the widespread scientific opinion that competency training should be generated at university, as stated by Llinares (2020), there is no agreement on what the basic employability competencies are. A small number of competencies can be extracted that appear in 50% or more of the models studied in the scientific literature which are: lifelong learning, communication, teamwork, flexibility/adaptation to change, work organisation and time management, problem-solving, decision-making, ability to relate to other people, initiative, information and knowledge management, which coincide with the top ten skills listed by the World Economic Forum (2023).

2.1 Skills and Employability

Although it is common to directly link competencies and employability, it is currently recommended to use a broader view of the concept (Llinares et al., 2016; Prieto et al, 2017) that incorporates a diversity of personal and contextual factors.

The development of graduates' personal and social skills will enable them to enter the workforce in an environment marked by increasing complexity in their entry into the labour market, but also employers who invest in employee development are closing growing skills gaps, increasing employee engagement and retaining their best workers. Workers see learning new skills as a way to boost their well-being.

The report, "Human Workplace Index: Transforming Culture in the Season of Giving," found that learning a new skill was the top action (42.9%) employees planned to take to boost their well-being in 2024.

When companies assess the demand and need for specific skills in the future, design initiatives to close skills gaps and have an organisational structure dedicated to learning, a competitive strategy for the future is guaranteed.

In this regard, the McKinsey survey, "Beyond Hiring: How Companies are Reskilling to Address Talent Gaps"(2021), found that nine in ten executives and managers say their organisations already face skills gaps or expect them to develop over the next five years.

The survey suggests that the need to address skills gaps is more urgent than ever. The majority of respondents (58%) say that closing skills gaps in their companies' workforces have become a higher priority since the pandemic began. Of the five key actions to close these gaps: hiring, outsourcing, reassigning or releasing employees, and developing skills within the current workforce, skills development is more prevalent now than in the pre-pandemic period. Sixty-nine percent of respondents say their organisations develop more skills now than before the COVID-19 crisis.

Adequate higher education also influences the time to first employment, with 97.9% of graduates having had a job since completing their studies. More than half of them were working three months later, 28.1% did so while studying and continued more than six months in that job and 22.9% took less than three months to find their first job (INE, 2019). Similar figures to those of the university under study in this study, where 42% had found their first job three months later and 15% took between 3 and 6 months to find it

In conclusion, employability has gone from being considered a simple regulatory mechanism of labour supply and demand to being conceived as a skill or personal capacity strictly linked to obtaining a job or avoiding job loss. Although employability was considered a personal skill, it has finally been conceived as a personal competence of social responsibility, not only personal, hence our first working hypothesis.

Hypothesis 1. Skills training improves employability.

2.2. Skills, Employability and Quality Employment

The future work environment will face a major transformation, new values, new opportunities and new business challenges. We envision jobs with higher intellectual capacities necessarily combined with skills related to the three transitions (technological-digital, energy-climatic and health and social), where lifelong learning will be a permanent challenge for individuals and companies.

In this sense, employment, specifically quality employment, must be one of the main elements for achieving greater social cohesion today.

The definition of a quality job depends on the perspective of analysis adopted; thus, a high-quality job would allow people to work in accordance with their qualifications while favouring social cohesion. For the company, the quality of employment would correspond to trained and efficient human resources. Finally, from the perspective of the worker, he/she would consider a quality job to be one that meets certain requirements such as being well-paid and working in a safe place, among others.

According to the CYD 2023 Report, the higher the level of education, the better the activity and employment rates, and the lower the unemployment rate. However, Spanish graduates are worse off than their European counterparts, with the second-lowest employment rate in 2022 (83% compared to 87.4% in the EU) and the second-highest unemployment rate (7.1% compared to 3.5%).

In Spain, as the level of education increases, the percentage of part-time employees and those with temporary contracts decreases, as well as that of the long-term unemployed. The income they receive for their work also rises: in 2021 the net disposable income of Spanish higher education graduates was 64.1% higher than that of those with at most compulsory studies, and 34.8% higher than that of graduates with post-compulsory non-tertiary studies. The average equivalent income increased in nominal terms by 14.9% in the last decade for higher graduates.

Based on all these aspects, two research hypotheses are launched.

Hypothesis 2a. Skills training leads to better quality jobs.
Hypothesis 2b. Employability derived from competency training is of quality.

2.3. Job quality promotes satisfaction

In contrast to the objective indicators of quality in employment, in this section, we focus on a subjective dimension: graduate satisfaction. The profusion of literature shows that this is one of the ongoing concerns of universities.

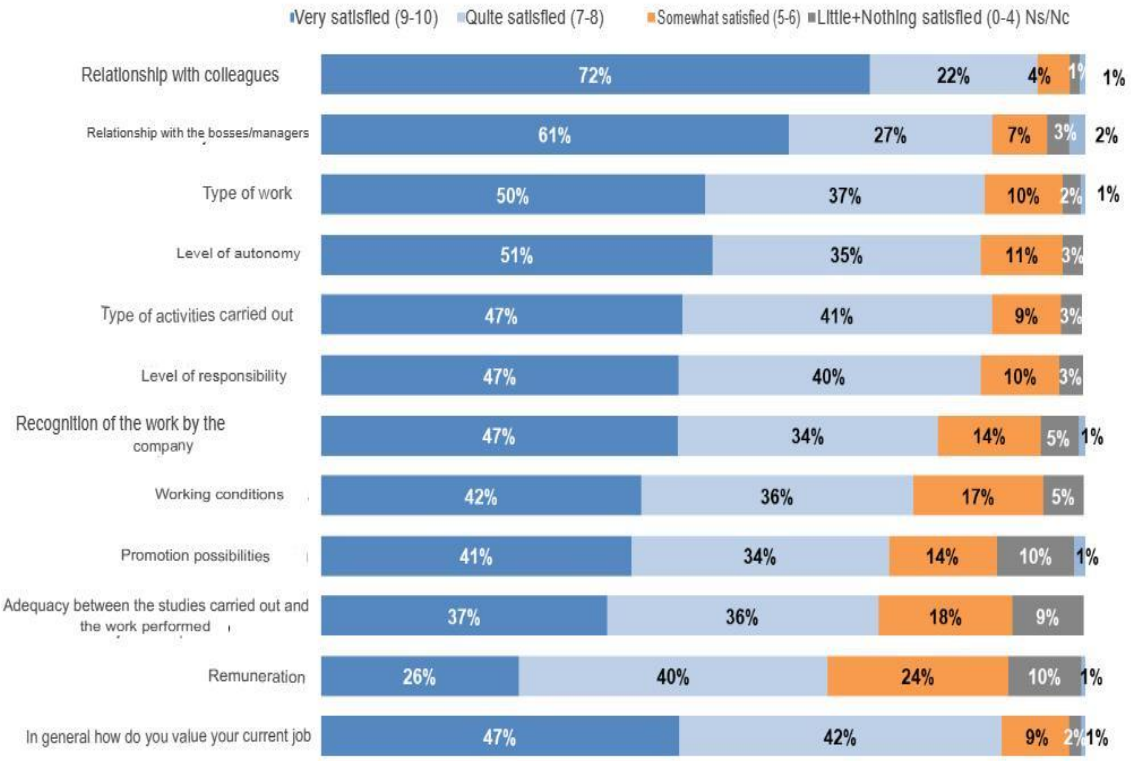
The evaluation of the University from the perspective of satisfaction and the quality perceived by the graduate allows us to obtain very relevant information for the improvement and achievement of both the objectives proposed by the institution itself and the demands of society. This information includes 1) users' expectations of the university; 2) their level of satisfaction; 3) the perceived quality of teaching and other services; 4) the perceived value of studies; 5) institutional reputation; and 6) the attitudes, behaviour and opinions of graduates towards the institution.

The quality of educational institutions encompasses a multitude of aspects and is not only linked to the teaching-learning experiences but also to the general experience with the educational institution, however, it is necessary to question the student, since he/she is the one who receives the education and the consequences of its quality (Salinas Gutiérrez et al., 2008).

In this case, the research focuses on the satisfaction provided by the skills training received, which favours employability and quality employment. Many authors have investigated this binomial. Thus, Lenton (2015) relates, among other factors, satisfaction with employability; Torres (2010), analyses the assessment of students at a Spanish university for various elements of teaching (theoretical and practical content, tutorials, continuous evaluation of the student's personal work) found that the best predictor of satisfaction with learning is the contribution that the skills developed in the subjects make to professional development; for Singh, 2010, satisfaction will allow understanding the impact of the training provided by the university on the student's personal and professional development.

In the case of the university under study, student satisfaction was measured with twelve items, highlighting aspects such as remuneration and the adequacy between studies and the job. Figure 1 shows the results obtained, where it is worth noting that three out of four (74%) of the people interviewed consider that their job is adequate to their training. Sixteen percent (16%), however, indicate that it is inferior to the degree studied.

Figure 1. Satisfaction with current job



Source: Own elaboration based on data provided by the university, 2024.

Hypothesis 3 of this research arises from the analysis carried out:

H3: Quality employment leads to more satisfied students.

3. Methodology and results

3.1. Population, sample and measurement instrument.

This study focuses on labour market insertion from the point of view of students graduating from a Spanish university in recent years, leaving aside the opinion of employers and the university itself (Martín Del Peso et al., 2013; Raihan & Azad, 2023), which will be the subject of study in further research, which will allow a comparison to be made within these three stakeholders that are so important in employability processes.

To this end, a quantitative study began with online interviews using a structured questionnaire, supported by telephone interviews (CATI). The universe of analysis was the student body of the undergraduate group of the San Pablo CEU University of the last four promotions 2019-20, 2020-21, 2021-22, and 2022-2023. The selection of the participants followed randomization criteria, based on the fulfilment of the aforementioned characteristics.

A total of 1,383 interviews were carried out from a database of 5,186 graduates, which represents a sampling error of ±2.3% for a confidence level of 95.5%, 2. The initial approach was to conduct a number of interviews that would guarantee a maximum sampling error of ±10% per degree.

The study was conducted between December 2023 and April 2024 and Table 1 shows the distribution of interviews by academic year and faculty.

Table 1. Distribution of the sample

Course	No. of interviews	Sampling error
2019-2020	332	±4’68%
2020-2021	330	±4,60%
2021-2022	227	±6’04%
2022-2023	494	±3’67%
TOTAL	**1.383**	**±2’30%**

Faculty		No. of interviews	Sampling error
Faculty	**of Economics and Business Administration**	207	±5’99%
Faculty of Law		148	±7’36%
Polytechnic School		140	±6’59%
School of Pharmacy		237	±5’23%
Faculty of Humanities and Communication Sciences		334	±4’55%
Faculty of Medicine		317	±4’97%

Source: Own elaboration based on data provided by the university, 2024.

On a Likert-type satisfaction scale from 1 to 5, participants rated on a questionnaire 21 indicators 10 related to employability skills, 4 to employability, 3 to job quality and 4 to student satisfaction as shown in Table 2.The scale sought to measure the level of agreement that the graduates have with a series of statements or questions asked, with the respondent able to state how much he/she agrees with these statements.

The questionnaire was designed by selecting indicators and variables based on scientific literature and bibliometric reviews related to these concepts (Martin & Bartolomé, 2023), which allows conclusions to be drawn from the sample.

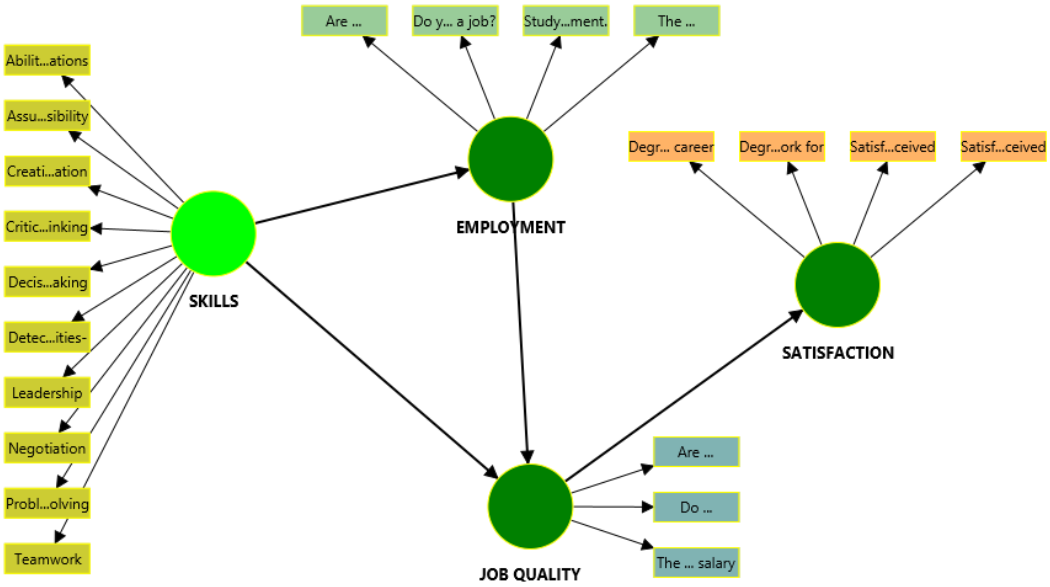
Table 2. Constructs: latent variables and indicators.

Llatent Variables	Indicators
Skills	Teamwork
	Problem-solving
	Leadership
	Ability to adapt to new situations
	Negotiation
	Assuming responsibility
	Decision-making
	Creativity and Innovation
	Critical thinking
	Detecting new ideas and opportunities-
Employment	The better the training, the better the employability
	Studying for a degree increases the possibility of promotion and salary improvement.
	Do you think that the technical contents of your degree have helped you to find a job?
	Are you applying the soft skills acquired in the degree?
Job quality	The work performed is commensurate with the salary
	Are you carrying out functions at your level of training?
	Do you have a permanent contract?
Satisfaction	Degree of satisfaction with chosen career
	Degree of satisfaction with the company you work for
	Satisfaction with the humanistic training received
	Satisfaction with the technical training received

Source: Own elaboration, 2024.

Although the choice between the most appropriate measurement models (formative or reflective) is complex (Coltman et al., 2008; Jarvis et al., 2003), in this study, we will opt for a reflective model, where the latent variable causes the observed variables. The dimensions are a reflection of skills, employability, job quality and satisfaction. Figure 2 shows the relationships between all these variables.

Figure 2. Relationships between variables in a reflective model.



Source: Own elaboration, 2024.

3.2. Data processing

A structural equation model (Cupani, 2012), exactly the Smart PLS, version 4 (Ringle et al., 2024), was used for the analysis of this study.

Before analyzing the results, it is necessary to check whether the algorithm converged, i.e., whether the stopping criterion of the algorithm was reached and the maximum number of iterations was not reached. In this case, as shown in Figure 3, the algorithm reached convergence after the 12th iteration, a figure that should always be less than the maximum number of iterations allowed by the software: 3000.

Figure 3. Algorithm Stopping Criteria.

	Ability	Are yo	Are yo	Assum	Creativ	Critica	Decisio	Degree	Degree	Detect	Do you	Doyou	Leade	Negoti	Proble	Satisfa	Satisfa	Studyi	The be	The wo	Teamw
Iteración0	0,15	0,36	0,45	0,15	0,15	0,15	0,15	0,43	0,43	0,15	0,45	0,36	0,15	0,15	0,15	0,43	0,43	0,36	0,36	0,45	0,15
Iteración1	0,15	0,38	0,51	0,14	0,14	0,12	0,15	0,33	- 0,04	0,15	0,44	0,24	0,11	0,17	0,16	0,58	0,48	0,41	0,39	0,39	0,15
Iteración2	0,15	0,38	0,50	0,14	0,14	0,12	0,15	0,32	- 0,03	0,15	0,46	0,24	0,11	0,17	0,16	0,58	0,48	0,42	0,39	0,38	0,15
Iteración3	0,15	0,38	0,50	0,14	0,14	0,12	0,15	0,31	- 0,03	0,15	0,46	0,24	0,12	0,17	0,16	0,58	0,49	0,42	0,39	0,38	0,15
Iteración4	0,15	0,38	0,50	0,14	0,14	0,12	0,15	0,31	- 0,03	0,15	0,46	0,24	0,12	0,17	0,16	0,58	0,49	0,42	0,39	0,38	0,15
Iteración5	0,15	0,38	0,50	0,14	0,14	0,12	0,15	0,31	- 0,03	0,15	0,46	0,24	0,12	0,17	0,16	0,58	0,49	0,42	0,39	0,38	0,15
Iteración6	0,15	0,38	0,50	0,14	0,14	0,12	0,15	0,31	- 0,03	0,15	0,46	0,24	0,12	0,17	0,16	0,58	0,49	0,42	0,39	0,38	0,15
Iteración7	0,15	0,38	0,50	0,14	0,14	0,12	0,15	0,31	- 0,03	0,15	0,46	0,24	0,12	0,17	0,16	0,58	0,49	0,42	0,39	0,38	0,15
Iteración8	0,15	0,38	0,50	0,14	0,14	0,12	0,15	0,31	- 0,03	0,15	0,46	0,24	0,12	0,17	0,16	0,58	0,49	0,42	0,39	0,38	0,15
Iteración9	0,15	0,38	0,50	0,14	0,14	0,12	0,15	0,31	- 0,03	0,15	0,46	0,24	0,12	0,17	0,16	0,58	0,49	0,42	0,39	0,38	0,15
Iteración10	0,15	0,38	0,50	0,14	0,14	0,12	0,15	0,31	- 0,03	0,15	0,46	0,24	0,12	0,17	0,16	0,58	0,49	0,42	0,39	0,38	0,15
Iteración11	0,15	0,38	0,50	0,14	0,14	0,12	0,15	0,31	- 0,03	0,15	0,46	0,24	0,12	0,17	0,16	0,58	0,49	0,42	0,39	0,38	0,15
Iteración12	0,15	0,38	0,50	0,14	0,14	0,12	0,15	0,31	- 0,03	0,15	0,46	0,24	0,12	0,17	0,16	0,58	0,49	0,42	0,39	0,38	0,15

Source: Own elaboration based on Smart PLS, 2024.

When the PLS model estimation converges, we proceed to the evaluation of the reflective measurement model, i.e., to the analysis of the results derived from it.

3.3. Evaluation of the reflective measurement model

The analysis and interpretation of the model results is carried out in two stages based on the results obtained with the SmartPLS program:

1. Reliability and validity of the measurement model.
2. Assessment of the structural model

3.3.1. Reliability and validity of the measurement model

At this stage, the analysis of the individual reliability of each item, internal consistency and convergent validity must be carried out.

For reflective measurement models, item reliability is established through simple correlations between indicators with their respective construct (external loadings), as shown in figure 4 and assessed by examining factor loadings or weights (λ).

Carmines and Zeller (1979) consider factor loadings greater than 0.707 to be adequate and it is suggested that indicators with loadings below this range be dropped (Hair et al., 2011) and the results be re-estimated (Urbach and Ahlemann, 2010).

Figure 4. External Loads (>0.7)

	EMPLOYMENT	JOB QUALITY	SATISFACTION	SKILLS
Ability to adapt to new situations				0,756
Are you applying the soft skills acqu	0,728			
Are you carrying out functions at yo		0,836		
Assuming responsibility				0,803
Creativity and Innovation				0,696
Critical thinking				0,702
Decision-making				0,688
Degree of satisfaction with chosen			0,737	
Degree of satisfaction with the com			0,689	
Detecting new ideas and opportuni				0,738
Do you have a permanent contract?		0,729		
Do you think that the technical cont	0,693			
Leadership				0,773
Negotiation				0,743
Problem-solving				0,769
Satisfaction with the humanistic tra			0,805	
Satisfaction with the technical train			0,740	
Studying for a degree increases the	0,711			
The better the training, the better t	0,739			
The work performed is commensur		0,844		
Teamwork				0,772

Source: Own elaboration based on Smart PLS, 2024.

The loading of each factor with respect to the construct is important since it is an indicator of how much it contributes to defining the construct; in our case, the factor loadings that are below the set value are only below it by small differences, so it was decided to maintain these indicators since they are necessary constructs.

Likewise, reliability evaluates the internal consistency of latent variables from their indicators and can be determined by Cronbach's Alpha and Composite Construct Reliability, with the measurement criterion for both being around 0.70 (Hair et al., 2014), considered a modest level mainly for exploratory research, and values of 0.8 or 0.9 for more advanced stages of the 17research. Values lower than 0.70 indicate a lack of reliability (Henseler et al., 2009). It is important to mention that this type of reliability analysis applies only to latent variables with reflective indicators.

In this case, both Cronbach's Alpha and Composite Reliability are greater than 0.7 for all indicators, thus demonstrating the internal consistency of the model studied.

Convergent validity indicates that a set of indicators, items or items represent a single underlying construct (Henseler et al., 2009); which is validated with AVE, which measures that the variance of the construct can be explained by the chosen indicators (Fornell & Larcker, 1981).

The AVE should be greater than or equal to 0.50 and provide the amount of variance that a construct obtains from its indicators in relation to the amount of variance due to measurement error; this means that each construct or variable explains at least 50% of the variance of the indicators. For Henseler et al. (2009), only values below 0.60 indicate unreliability.

In the model investigated, convergent validity is also verified as all its values are above 0.5. All these data are shown in Figure 5.

Figure 5. Internal consistency and convergent validity

	Internal consistency		Convergent validity	
	Cronbach's Alpha (0.7-0.9)	Reliability composed (rho_a) (0.7-0.9)	Reliability composed (rho_c) (>0.5)	Variance average extracted (AVE) (>0.5)
EMPLOYMENT	0,749	0,759	0,788	0,583
JOB QUALITY	0,783	0,803	0,782	0,648
SATISFACTION	0,754	0,734	0,625	0,571
SKILLS	0,873	0,877	0,898	0,670

Source: Own elaboration based on Smart PLS

Therefore, the measures of the four reflective constructs present acceptable levels of internal consistency and convergent validity.

As regards discriminant validity, it indicates the extent to which a given construct is different from other constructs. To assess discriminant validity it is necessary to evaluate three criteria: 1) the Fornell-Larcker criterion, 2) cross-loadings between indicators and latent variables, and 3) the HTMT matrix.

The Fornell-Larcker criterion considers the amount of variance that a construct captures from its indicators (AVE), which must be greater than the variance that the construct shares with other constructs.

Thus, the square root of the AVE of each latent variable should be greater than the correlations it has with the rest of the variables; therefore, to achieve discriminant validity, the square root of the AVE of a construct should be greater than the correlation it has with any other construct, as shown in Figure 6, where the square roots of the AVE value of the reflective constructs and the correlations between the different constructs outside the diagonal appear in white on the diagonal. A. Thus, for example, the reflective construct Employment has a value of 0.760 for the square root of its AVE, which has to be compared with all the correlations in the Employment column.

The square roots of the AVE values for the remaining constructs are also higher than the correlations of these constructs with any of the other latent variables present in the model, indicating that all constructs are valid measures of single concepts.

Figure 6. Fornell-Larcker Criterion

	EMPLOYMENT	JOB QUALITY	SATISFACTION	SKILLS
EMPLOYMENT	0,760			
JOB QUALITY	0,572	0,800		
SATISFACTION	0,439	0,477	0,750	
SKILLS	0,103	0,188	0,084	0,810

Source: Own elaboration based on Smart PLS, 2024

On the other hand, it is also necessary to compare the cross-factor loadings of the indicators of a latent variable with the loadings of the indicators of the other latent variables (Figure 7). The factor loadings should have a higher value with their own variable than with the others being evaluated in the model (Barclay et al., 1995). The check is performed by row and identifies whether its weight is loading on the construct to which it belongs, as shown in the following calculations.

Figure 7. Cross loads

	EMPLOYMENT	JOB QUALITY	SATISFACTION	SKILLS
Ability to adapt to new situations	0,07	0,13	0,05	0,76
Are you applying the soft skills acquired in the degree?	0,73	0,41	0,30	0,06
Are you carrying out functions at your level of training?	0,46	0,84	0,42	0,14
Assuming responsibility	0,07	0,12	0,06	0,60
Creativity and innovation	0,06	0,13	0,08	0,70
Critical thinking	0,03	0,12	0,03	0,70
Decision-making	0,05	0,14	0,06	0,68
Degree of satisfaction with chosen career	0,19	0,22	0,54	0,08
Degree of satisfaction with the company you work for	0,03	0,02	0,65	0,02
Detecting new ideas and opportunities	0,06	0,14	0,05	0,74
Do you have a permanent contract?	0,48	0,73	0,31	0,10
Do you think that the technical contents of your degree have helped you to find a job?	0,59	0,26	0,22	0,05
Leadership	0,09	0,08	0,04	0,57
Negotiation	0,09	0,15	0,05	0,74
Problem solving	0,10	0,13	0,08	0,67
Satisfaction with the humanistic training received	0,39	0,41	0,80	0,06
Satisfaction with the technical training received	0,32	0,34	0,74	0,05
Studying for a degree increases the possibility of promotion and salary improvement.	0,71	0,46	0,29	0,08
The better the training, the better the employability	0,74	0,42	0,39	0,09
The work performed is commensurate with the salary	0,31	0,64	0,32	0,19
Teamwork	0,08	0,13	0,07	0,67

Source: Own elaboration based on Smart PLS, 2024.

Finally, for Henseler et al. (2016) the most reliable criterion for discriminant validity assessment is the Heterotrait-monotrait ratio (HTMT). If the monotrait-heterotrait-heteromethod correlations (correlations between indicators measuring the same construct) are higher than the heterotrait-heteromethod correlations (correlations between indicators measuring different constructs) there will be discriminant validity. Thus, the HTMT ratio should be below one.

In our study, the HTMT was less than one, and as there is only one value (SATISFACTION-JOB QUALITY) amounting to 0.934, it is also consistent with the study of Gold et al (2001), which would even consider a value of 0.90 for this ratio. Therefore, the proposed constructs are fully compatible, as shown in Figure 8.

Figure 8. Heterotrait-monotrait ratio (HTMT)

	Ratio Heterotrait-Monotrait (HTMT)
JOB QUALITY <-> EMPLOYM	0,896
SATISFACTION <-> EMPLOY	0,765
SATISFACTION <-> JOB QU	0,934
SKILLS <-> EMPLOYMENT	0,635
SKILLS <-> JOB QUALITY	0,670
SKILLS <-> SATISFACTION	0,761

Source: Own elaboration based on Smart PLS, 2024.

In conclusion, all the evaluation criteria of the model are met, providing evidence of the reliability and validity of the measures.

3.3.2. Assessment of the structural model

We need to check, first of all, for possible collinearity problems in the structural model (Hair et al., 2014; Henseler et al., 2009). To assess the level of collinearity there are several statistical tests.

The most usual is the variance inflation factor (VIF), whose value should ideally be greater than five. Another statistic is the tolerance, which represents the amount of variance of a formative indicator not explained by the other indicator in the same block, both statistics carry the same information. In the context of structural equations, a tolerance value below 0.20 and a VIF above five of the predictor constructs imply critical levels of collinearity. The VIF calculations are shown in Figure 9.

Figure 9. Variance inflation factor (VIF),

	EMPLOYMENT	JOB QUALITY	SATISFACTION	SKILLS
EMPLOYMENT		1,01		
JOB QUALITY			1,00	
SATISFACTION				
SKILLS	1,00	1,01		

Source: Own elaboration based on Smart PLS, 2024.

We conclude that collinearity between the predictor constructs is not a critical problem in the structural model, and we can continue to examine the report of results.

The second step of the structural model assessment procedure involves evaluating the significance and relevance of the model relationships. For this purpose, the standardized regression coefficients (path coefficients) β, which show the relationships of the hypotheses of the research model, are used. This coefficient should have a minimum value of 0.2 and ideally be above 0.3.

Looking at the relative importance of the exogenous constructs that explain having a quality job (Figure 10), in the first place is training in soft skills (Skills) and then employability, understood as the graduate's ease of obtaining employment, both of which allow him/her to obtain a quality job.

The relationships between constructs are strong in these two cases and moderate for the other two: quality employment-satisfaction and skills-employment, the latter aspect on whose improvement the university should focus in order to make students aware of the importance of training in skills to obtain employment.

To analyze the degree of significance and importance of the distribution of values, we also use the t Student value derived from the resampling or bootstrapping process, which is a nonparametric technique that tests whether the paths between variables are feasible. In this case, a bootstrapping procedure with 5,000 subsamples and a significance level of 5% was used to test the hypotheses (Chin et al., 2003).

As for the p-value, it is related to the reliability of the study, the lower the p-value, the more reliable the result.

As shown in Figure 10, the empirical results confirm all the hypotheses, with a significance level of p=0.000 for all of them. In statistical terms, for example, the direct effect of skills on employability is 0.4, and the employability mediator is 0.23, so the total effect is 0.63.

Figure 10. Significance and relevance of the model's relationships

	Coeficientes path	Estadísticos t (|O/STDEV|)	Valores p
EMPLOYMENT -> JOB QUALITY	0,56	27,28	0,00
JOB QUALITY -> SATISFACTION	0,48	21,32	0,00
SKILLS -> EMPLOYMENT	0,40	3,68	0,00
SKILLS -> JOB QUALITY	0,63	5,49	0,00

Source: Own elaboration based on Smart PLS, 2024.

3.4. Predictive relevance of the model

To evaluate the explanatory power of the model we will first analyze R^2, which indicates how strong the relationship of the dependent variable with the independent variable(s) is. Thus, the closer it is to 1, the stronger the relationship, while if it is close to 0, the relationship will be weak or practically null.

Subsequently, the values for f^2 are obtained for all the relationships in the model, which allows the relative importance of a predictor construct on an endogenous variable to be assessed.

As shown in Figure 11, according to the results obtained in R^2, the predictive power of satisfaction is moderate (53%), where the latent variable quality work explains 53% of the variability. As for quality work, its predictive power is high (74%) and its variability is explained by the latent variable skills and employment, respectively. Finally, the predictive power of employability is also strong (61%) and its variability depends on skills.

Figure 11. Calculation of R^2

	R2
EMPLOYMENT	0,61
JOB QUALITY	0,74
SATISFACTION	0,53
SKILLS	

Source: Own elaboration based on Smart PLS, 2024.

The size of f^2 measures the effects of an exogenous construct on an endogenous one by the change in R^2 of the endogenous construct when excluding the exogenous one. Cohen (1998) specifies the following values for evaluating f^2: 0.02 is a small effect, 0.15 is a medium effect, and 0.35 is a large effect. As can be seen in Figure 12, the effect of skills on quality work and on employability is high (f^2 = 0.73 and 0.61, respectively) and the effect of employment on quality work (f^2 =0.47) and on satisfaction (f^2 = 0.49) is considered medium.

Figure 12. Calculation of f^2

	f2
EMPLOYMENT -> JOB QUALITY	0,47
JOB QUALITY -> SATISFACTION	0,49
SKILLS -> EMPLOYMENT	0,61
SKILLS -> JOB QUALITY	0,73

Source: Own elaboration based on Smart PLS, 2024.

The previous PLSpredict procedure and the cross-validated predictive power test (CVPAT) provide the necessary results for an assessment of out-of-sample predictive power (Hair et. al, 2022).

4. Discussion and conclusions

The University is a fundamental pillar in any society given the great importance of education to improve employability and make any community prosper. Thus, in the Preamble of Royal Decree 822/2021, which reorganizes university education, it is stated that it "aims to strengthen the employability capabilities conferred by the training received in different degrees, based on the skills and knowledge acquired, as well as through a wide range of academic options, with the aim of providing university graduates with a decent and quality job placement".

This has led all Spanish universities to have as a reference in their different strategic lines the improvement of the labour market insertion of their graduates, carrying out their own surveys whose results are usually published on their web pages as an advertising claim.

In addition, since 2023, university institutions have a tool called U-Ranking, developed by the BBVA Foundation and the IVIE (Valencian Institute of Economic Research) which, among other aspects, provides information on the labour market outcomes of the different studies and universities, constructing a synthetic index of labour market outcomes of graduates based on four variables: employment rate, % of employed with a salary above 1,500 euros, % of highly qualified occupations and % working in their area of study.

To improve employability, universities must try to reduce the training gap with the labour market, assuming that graduates have certain specific and generic skills associated with each degree, but that employers also demand so-called soft skills that must be acquired in a cross-cutting manner regardless of the studies undertaken. It is necessary to teach students to think well or better, with a critical sense in their analysis, to enhance their capacity for innovation, as well as to adapt to new situations, know how to lead, work in teams and manage possible conflicts.

This research allows us to know to what extent companies demand the knowledge and skills acquired by graduates through university education, thus improving the labour market insertion rates of universities, with quality jobs and, therefore, achieving the satisfaction of their graduates.

As an added value, the study also includes in the questionnaire conducted with 1.383 graduates the evaluation of the main generic competencies from three perspectives: the level possessed by the graduates (interviewing them about 10 skills), the level provided by the university (asking them directly if the skills learned are put into practice in their workplace and about satisfaction with the humanistic training), and the level required in employment (asking if it is the technical knowledge that has allowed them to find their first job, or if they think that more complete training will allow them to find a better job). Comparing these perspectives shows the gap in skills training between universities and companies.

Another significant contribution of the research is that it only captures the point of view of the graduate, leaving the university and employers out of the picture. The scientific literature relating university and employability is abundant from the point of view of the institutions and recruiters themselves (Caballero Fernández et al., 2014; Nahum Lajud et al., 2021; Ugarte-Artal et al. 2021) but scarce when referring to the student (Martínez Clares and González-Lorente, 2021).

In this case, it is the graduate himself/herself who assesses whether or not he/she is in a position appropriate to his/her studies, thus making a "horizontal adjustment", which deals with the relationship between the area of studies and the field or sector of activity of the work performed by the graduates. In this case, the fit is considered to be high since, according to the purely statistical study of this question of the survey, the mean is 377, the median is 400 and the asymmetry coefficient is 0.14, so that the functions of the position are associated with the studies carried out. The "vertical adjustment", is the degree of adequacy between the level of knowledge and skills obtained at the university and that required for the job, causing overqualification or underqualification. The survey conducted for this item yields a mean of 367, the median is 300 and the asymmetry coefficient is 0.30, showing that there is little overqualification and that, in addition, the distribution is skewed to the left (positive orientation).

The research has been carried out using a reflective model to which structural equations, exactly Smart PLS 4, have been applied for its analysis. In this study, the latent variable (skills) causes the observed variables (employability, job quality and satisfaction). The analysis of the reliability and

validity of the model has been carried out with the calculation of external or factor loadings to analyze reliability; Cronbach's Alpha and composite reliability for the study of internal consistency and mean extreme variance for convergent validity, understood as a measure in which the indicators are positively correlated with alternative measures in the same construct. All indicators are within their parameters considered normal, thus verifying the consistency of the model under study.

Convergent validity tests that construct that are expected to be related are in fact related. Discriminant validity (or divergent validity) tests that construct that should not be related in fact, are not. The discriminant validity of this study is measured with the Fornell-Lacker criterion or the heterotrait-monotrait ratio, HTMT also meets the pre-established criteria, therefore, the proposed constructs are fully compatible.

Subsequently, an evaluation of the model was carried out, studying the collinearity with the variance inflation factor and the relevance of the relationships of the model with the path coefficients, the Student's t and the p-value, derived from the bootstrapping process, using a subsample of 5,000 data to test hypotheses when these do not follow a known distribution.

Finally, the explanatory power is analyzed by calculating R^2 and f^2, which indicate that in this model the relationship of the dependent variable with the independent variables can be considered moderate to strong depending on the variables.

In conclusion, all these indices confirm the direct effect of employability skills on employability, employability quality and student satisfaction, and are significant according to the results achieved.

Therefore, it is important that university institutions focus on how to include competency training in the study plans, since training in specific competencies has been assumed by the different subjects of each degree, but this is not the case with transversal competencies (also known as soft competencies), which are developed indirectly through various free-choice subjects or complementary training activities that, in many cases, do not cease to involve an additional teaching load for the student and cause inconsistencies between what is proposed by the EHEA and the work environment in relation to the reality of current university study plans, In many cases, these do not cease to represent an additional teaching load for the student, causing inconsistencies between what is proposed by the EHEA and the work environment in relation to the reality of current university curricula.

Companies also need to commit to *lifelong learning* during the professional development of their employees, which allows the growth of not only the company itself but also the growth of its human resources personnel. Once the graduate leaves the university, it will be the company itself that will have to take care of the competency training throughout his or her working life.

Unemployment is one of the biggest problems of our economy and the main concern of our society and although graduates present better employment data than the rest of the population, their indicators show signs of concern that university institutions and recruiters must address this in order to reach figures of other European Union countries.

5. Limitations and future lines of research

The model has been evaluated using a total of ten transversal competencies that the authors consider to be the main ones for the study after an exhaustive review of the scientific literature, but given the great difficulty in classifying these competencies and reaching an agreement on the most relevant ones, the findings obtained should be compared with other models where the competencies chosen are different.

It would also be interesting to check whether the results of this model coincide with those obtained from the same survey of students in other Spanish universities. This would allow us to ratify the starting hypotheses of this research.

Finally, studying the point of view of university institutions and recruiters on the relationship between competency training and job placement and employee satisfaction would allow comparison with the vision of graduates and help reduce the capability gap between universities and companies.

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