# Soft Skills: The Invisible Engine of Professional and Organisational Success

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| KEYWORDS | ABSTRACT |
|---|---|
| *Soft Skills*<br>*Professional Performance*<br>*Employability*<br>*Personal Development*<br>*Professional Performance*<br>*Talent* | *The aim of this study is to explore the soft skills that are most closely related to the ability to respond to activities or tasks in the work environment. The sample is made up of 530 employees who are assessed on 11 competencies distributed over 24 differentiated dimensions. The results show that the sample can be grouped into three significantly differentiated clusters, one of which stands out because it is the one most valued by organisations. It also focuses on the areas of training for development, professional performance and employability. It highlights the competencies of empathy, involvement, commitment, responsibility and autonomy as the backbone of the three clusters. Finally, the results are interpreted, highlighting their applicability in the business market.* |

# 1. Introduction

I n a highly digital age, where technology seems to be the best positioned factor for business development and even as a competitor for workers' access to the professional market, given the ease of access to information, an almost inexhaustible source of resources and the possibility of quickly connecting with another person anywhere, the importance of understanding professional, personal and business development takes on particular relevance, with a focus on the development of workers' skills and abilities, the so-called soft skills.

Organisations are increasingly aware of which aspects should be performed by artificial intelligence and which aspects should be performed by humans. Those repetitive, low-value-added tasks that could be automated can indeed be relegated to technology, but the differentiating success and survival value of the company lies in combining this technology with the development and enhancement of soft skills. It has been shown that having a team of people with certain soft skills favours greater performance for the worker (Marrero et al. 2018; Rodríguez et al. 2019), as well as greater productivity for the organisation (Ibrahim et al. 2017). The business market evaluates constantly and without interruption, so it is essential to analyse, study, identify and develop the main skills and competences demanded by the market in order to relate them to personal development, professional performance, career advancement and employability.

## 1.1. Relevance of Soft Skills for Work and Personal Development

From the perspective of the workforce, it is imperative to ascertain the competencies that enterprises demand in order to accomplish their strategic objectives. A globally accepted differentiation is established between two types of professional skills: hard skills, also known as hard or technical skills, and soft skills, also known as transversal skills (Guerra et al., 2024).

Hard skills refer to the competencies required to perform the technical functions associated with a given position (Ashurova and Ashurov, 2023). Despite their high value, organisations predominantly impart and train new recruits in these skills during the on-boarding process. Examples of relevant skills include business analysis, accounting, proficiency in specific software, application design, video editing and production. It is important to note that these types of skills are more specific to the professional position, the company and the sector.

Conversely, soft skills encompass the abilities that are intricately linked to an individual's talents and characteristics, thereby distinguishing them from others and contributing a distinctive value to the organisation (Culcasi & Paz, 2023). Furthermore, these skills represent the foundation for securing employment and, consequently, contribute to professional development within the company, growth, and job loyalty. Examples of such skills include results orientation, frustration tolerance, problem-solving skills, flexibility and persuasive communication.

It is reasonable to conclude that the combination of both sets of skills in the same worker will contribute to the achievement of objectives at both the individual and group level, as well as strategic business objectives. However, organisations place a greater emphasis on the processes of attracting, recruiting and selecting talent, often termed 'soft skills', given that, although the company can and should develop actions to strengthen and develop these skills in its workers, it is complex and costly, both economically and temporally, to provide workers with complete and comprehensive training in certain soft skills. Furthermore, it is precisely the personal development of the employee and the combination of their different soft skills that makes them unique, particular and truly attractive to organisations. In regard to the so-called hard skills, companies generally have protocolised technical training procedures for the position, and these are easily transferable to workers. In recent decades, there has been a marked tendency among organisations to invest in the standardisation of these processes, with a view to facilitating fast, agile and efficient on-boarding.

In addition, this information necessitates an exercise in planning and strategic thinking on the part of the worker or the aspiring new entrant to the labour market. A wide array of soft skills is in demand, though not all of them are equally sought after across different sectors and roles. A brief global approximation suggests that, for instance, in the police force, empathy, interpersonal communication skills and emotional stability are the most in-demand soft skills (Bloksgaard & Prieur, 2021). In administrative roles, digital competence is the most sought-after skill, along with effective communication and interpretation (Krpálek et al. 2021), and in the field of education, teamwork and

lifelong learning skills, as well as management skills for learners, are particularly in demand (Tang, 2018). In the hospitality sector, effective communication and motivation are essential, while teamwork and problem solving are less significant (Escamilla et al. 2022).

One such option for the worker or candidate is to identify the skills demanded by the professional sector to which they must address, and to train and develop these skills in order to become a future worker in that sector. Alternatively, the individual may elect to undertake tasks focused on self-knowledge of soft skills. Following identification of these skills, the next step would be to explore sectors that are in demand of workers with the individual's profile.

## 1.2. Soft Skills and Professional Performance: An Inseparable Binomial

In the context of the business world, a significant challenge is often encountered in aligning the interests of the company and the employee, ensuring that both parties move in the same direction. This is a complex aspect to achieve and can be a difficult challenge in many instances. However, professional performance is a concept that clearly aligns both actors in the equation. Organisations use performance evaluations of their workers as an indicator of professional success, given the measurement and degree of achievement of objectives. In turn, workers perceive these performance evaluations as validation and recognition of their efforts over the course of a year.

As previously stated, organisations have dedicated significant time and resources to standardising procedures and identifying the essential hard skills required for specific roles. However, the scientific literature offers evidence that soft skills play a more substantial role in both the economic growth of the organisation and the professional development of the employee (Caputo et al., 2019; Purwanto, 2020).

As Ibrahim et al. (2017) have demonstrated, soft skills training, in addition to the development and enhancement of soft skills by organisations for their employees, is directly related to the individual professional performance of each employee. Consequently, this implies that it exerts a direct influence on the performance and fulfilment of the organisation's strategic objectives, given that the overarching objective of a company is comprised of the individual objectives of each of its employees. The findings of this study demonstrate that the implementation of appropriate soft skills training plans has the potential to enhance professional performance by up to 14.5%. Moreover, this enhancement can be further augmented to a maximum of 27.9% when the spatio-temporal methodology is employed. The spatio-temporal methodology involves the allocation of sufficient time for the internalisation, assimilation, and practical application of the acquired learning by the worker prior to progression to subsequent training phases.

## 1.3. The Significance of Soft Skills in Career Advancement

The labour market has evolved over time, as have the interests of employees themselves. The concept of career success has been redefined across generations. A growing tendency among employees is to perceive that their work and effort has a tangible impact on the organisation, and that this can be translated into recognition or career advancement, rather than other factors such as salary. In this regard, Klaus (2010) demonstrated that three-quarters of professional success is attributable to soft skills, while only a quarter is associated with the technical competencies of the position held. Years later, Sethi (2014) expanded upon this finding by demonstrating that, in his study, professional success derived 85% from workers' soft skills, thereby relegating hard skills, to which companies have invested so much for decades, to only 15%.

In addition, as previously stated, given the constant evolution of the labour market, particularly in light of the emergence of artificial intelligence, this evolution is exacerbated in terms of its pace. It is imperative for individuals to recognise the indispensable need for continuous training in soft skills, and for employers to perpetually ascertain the skills that the market demands (Martín Gómez et al., 2023).

It is therefore understandable that organisations should be proactive in their search for professionals and in designing plans to integrate soft skills, and it is also consistent that individuals and potential employees in companies should spend time and invest in training along these lines.

## 1.4. The Impact of Soft Skills on Employability

It has been demonstrated that, in order to access the professional market and maintain a job in a sustained manner over time, it is not sufficient to have certain hard skills; rather, it is the soft skills necessary for the sector, the company and the position for which one wishes to apply that make the fundamental difference (Ummatqul, 2020).

This may be one of the reasons why there has been a significant change in the curricula of universities around the world. In these institutions, soft skills training plans are being designed, integrated and implemented in their academic offerings, regardless of the theoretical and technical content taught in them. The aim is to provide better preparation for the professional market for their students (Cinque, 2016; González & Lluch (2024); Kechagias (2011)) also emphasise transversal skills that are acquired independently of the specific studies taken, such as critical thinking, leadership and conflict management.

2024). Consequently, there is an integration of hard and soft content in their undergraduate and postgraduate degrees.

In view of the information provided, the general objective of this study is to explore which soft skills are most closely related to the ability to respond to the activities or tasks of the work environment. In order to provide inferential value to this objective, the following hypotheses are proposed:

- Hypothesis 1: 3 distinct clusters will emerge in which workers can be grouped according to their soft skills.
- Hypothesis 2: Empathy and effective communication will be two soft skills present in all workers, regardless of the cluster in which they are found. However, they will not necessarily be the variables that show the greatest power when discriminating the profiles analysed in terms of their classification by cluster.

# 2. Methodology

## 2.1. Research Objective

The purpose of this research project is to analyse and anticipate the skills an individual possesses to respond to a task or activity within their work environment. These professional competencies encompass both previously acquired knowledge and other abilities and attitudes.

This analysis will facilitate prediction of the habitual behaviour of the individual being assessed in relation to a specific set of dimensions, as outlined in the following section. The study will also facilitate the determination of the level of congruence between these behaviours, thereby enabling the creation of a profile that is adapted to the job.

To this end, a Job Competences survey has been utilised as a data collection instrument, encompassing the job competencies of the participants. The survey has been designed to be applied to professional or technical profiles, either in the industrial or administrative field, regardless of whether or not they have experience in team management.

## 2.2. Sample and Data Collection

The Job Competencies survey is a tool designed to assess 11 core competencies across 24 distinct dimensions. These competencies are considered fundamental to ensure successful job performance in most organisations. The survey was designed and validated by the Institute of Knowledge Engineering (Autonomous University of Madrid) in collaboration with the company The Adecco Group, which was responsible for its implementation and subsequent data collection.

The survey is generated online through the AdeccoXpert platform or in person at Adecco's physical offices. The survey comprises a total of 186 items, which are designed to elicit information regarding common behaviours observed in the work environment. The candidate is required to indicate the extent to which these descriptions represent their skills and job performance, utilising a scale with four response options: "rarely" (only very rarely behaves like this), "sometimes" (does not usually behave like this), "frequently" (usually behaves in the indicated way) and "very frequently" (always acts as indicated in the sentence).

The database resulting from this questionnaire and utilised in this study comprises a comprehensive collection of data. The database contains a total of 530 responses. The 11 competences assessed have been broken down into 24 variables, all of which are shown below, with the 24 dimensions studied highlighted in italics:

- Planning and Organisation: *Planning and Organisational Capacity*, *Strategic Planning.*
- Action and performance at work*: Adaptation to change, Autonomy, Results orientation, Concern for quality.*
- *Involvement, commitment and responsibility.*
- Problem Solving*: Problem Solving and Analysis, Decision Making.*
- Teamwork*: Team vision, Conflict management, Active participation.*
- Dynamism*: Motivation, Optimism and Energy, Initiative.*
- Communication: *Effective Communication (Adequacy and Accuracy), Capacity for Persuasion, Empathy.*
- People Management*: People Development, People Management*
- Customer orientation*: Customer service, Development of business opportunities.*
- Stress Tolerance*: Working under Pressure, Frustration Tolerance.*
- Learning and innovation

The survey also incorporates a Social Desirability scale, which does not evaluate work behaviours, but rather gauges the extent to which the respondent's responses objectively reflect their typical behaviour. The scale's objective is to discern whether the subject has responded in a manner that consciously or unconsciously endeavours to project a more favourable image of themselves or that which they perceive to be expected in the assessment process. Consequently, this scale functions as an indicator of the validity of the responses, with particular attention paid to extreme scores, both excessively positive and negative (values above the 8 decile or below 3). In order to ensure the integrity and accuracy of the data, a data cleaning and validation process was carried out.

The results of the questionnaire are reflected in decatypes, on a scale of 1 to 10, which can be interpreted according to the following table (Table 1):

**Table 1.** Conversion table for scores to decatypes

| Decatype | Meaning | Percentile | Level of development |
|---|---|---|---|
| 1 | Well below average | 0-10 | Areas for improvement |
| 2-3 | Below average | 11-30 | Areas for improvement |
| 4-6 | Average | 31-70 | Developing areas |
| 7-8 | Above average | 71-90 | Developing strengths |
| 9-10 | Well above average | 91-100 | High potential strengths |

Source: The Adecco Group, 2023

In addition, based on the decatype, a classification of competences was made into four levels of development (Table 2):

**Table 2.** Conversion table of decatypes to development levels

| Areas | Decatypes | Description |
|---|---|---|
| **High potential strengths** | 9-10 | Refers to those competencies that the candidate has fully developed and that he/she usually shows in the performance of the job. |
| **Developing strengths** | 7-8 | Competences developed by the candidate, but not always shown in the development of the position. |
| **Developing areas** | 4-6 | Competences that may sometimes be displayed by the candidate, but are not always present. |

| Areas for improvement | 1-3 | Competencies that are never or only occasionally displayed by the candidate. In most cases, they will need training or development actions. |
|---|---|---|

Source: The Adecco Group, 2023

This database provides a solid basis for the quantitative statistical analysis carried out in this paper.

## 2.3. Data Analysis

Data analysis was carried out using SPSS, an advanced statistical analysis and exploration tool. The data, previously organised in Excel, were imported into SPSS, where the variables were defined and labelled according to their type. Descriptive, univariate and multivariate analysis was carried out to assess the significant differences between the variables studied.

# 3. Results

The analysis of results is divided into 3 sections:

## 3.1. Descriptive Statistics

The aim of this initial descriptive analysis is to provide an initial overview of the twenty-four competences reflected in the questionnaire. As can be seen in Table 3, the statistics show good homogeneity, as the sample means for each of the variables range from 5.37 to 7.14, while the dispersion of the data is also moderate, with a coefficient of variation (CV) in all cases of around 0.35-0.40.

**Table 3.** Descriptive statistics for each of the competences studied

| | N | Media | Standard deviation |
|---|---|---|---|
| **Planning and Organisational Capacity** | 530 | 5.49 | 2.321 |
| **Strategic Planning.** | 530 | 6.02 | 2.469 |
| **Adaptation to change** | 530 | 6.09 | 2.688 |
| **Autonomy** | 530 | 5.71 | 2.006 |
| **Results-oriented** | 530 | 6.37 | 2.496 |
| **Concern for quality** | 530 | 6.93 | 2.528 |
| **Involvement, commitment and responsibility** | 530 | 5.70 | 1.938 |
| **Problem Solving and Analysis** | 530 | 6.41 | 2.507 |
| **Decision-making** | 530 | 5.77 | 2.436 |
| **Team vision** | 530 | 7.14 | 2.381 |
| **Conflict management** | 530 | 5.62 | 2.389 |
| **Active Participation** | 530 | 6.38 | 2.394 |
| **Motivation, Optimism and Energy** | 530 | 6.13 | 2.466 |
| **Initiative** | 530 | 5.79 | 2.465 |
| **Effective Communication (Adequacy and Accuracy)** | 530 | 6.19 | 2.585 |
| **Capacity for Persuasion** | 530 | 5.26 | 2.454 |
| **Empathy** | 530 | 6.29 | 2.379 |
| **People Development** | 530 | 6.42 | 2.461 |
| **People Management** | 530 | 6.13 | 2.523 |

| | | | |
|---|---|---|---|
| **Customer service** | 530 | 5.88 | 2.346 |
| **Developing business opportunities** | 530 | 5.37 | 2.303 |
| **Working under Pressure** | 530 | 5.52 | 2.401 |
| **Frustration Tolerance** | 530 | 6.04 | 2.236 |
| **Learning and Innovation** | 530 | 6.00 | 2.517 |

Source: Own elaboration, 2024.

## 3.2. Runs Test

The runs test was used on the database to analyse the randomness of the responses and to check for bias. This was done by dividing the data into two groups using the median (Me). This dichotomisation method allows us to identify possible patterns or trends that may indicate a lack of randomness in the sample. As can be seen in Table 4, the p-values obtained are all above a significance level of 0.05, indicating that there is no significant pattern in the data. This means that there is insufficient evidence to reject the null hypothesis of randomness. In other words, the results suggest that the data are random, which means that there is no bias in the sample analysed and therefore supports the reliability of the data collected.

**Table 4.** Runs test as an analysis of data randomness

| | No. of Runs | p-values (bilateral) |
|---|---|---|
| **Planning and Organisational Capacity** | 225 | 0.062 |
| **Strategic Planning.** | 247 | 0.220 |
| **Adaptation to change** | 259 | 0.879 |
| **Autonomy** | 258 | 0.490 |
| **Results-oriented** | 251 | 0.199 |
| **Concern for quality** | 243 | 0.388 |
| **Involvement, commitment and responsibility** | 275 | 0.421 |
| **Problem Solving and Analysis** | 241 | 0.402 |
| **Decision-making** | 230 | 0.230 |
| **Team vision** | 262 | 0.769 |
| **Conflict management** | 261 | 0.670 |
| **Active Participation** | 265 | 0.933 |
| **Motivation, Optimism and Energy** | 261 | 0.683 |
| **Initiative** | 262 | 0.732 |
| **Effective Communication (Adequacy and Accuracy)** | 250 | 0.193 |
| **Capacity for Persuasion** | 252 | 0.341 |
| **Empathy** | 268 | 0.605 |
| **People Development** | 268 | 0.858 |
| **People Management** | 261 | 0.741 |

| | | |
|---|---|---|
| **Customer service** | 259 | 0.592 |
| **Developing business opportunities** | 250 | 0.660 |
| **Working under Pressure** | 252 | 0.530 |
| **Frustration Tolerance** | 265 | 0.426 |
| **Learning and Innovation** | 253 | 0.285 |

Source: Own elaboration, 2024.

## 3.3. Cluster Analysis and ANOVA

Multivariate analysis commences with a non-hierarchical cluster analysis employing the K-means algorithm. The K-means method permits the processing of an infinite number of cases; however, the number of clusters to be obtained must be specified in advance. Three pre-defined clusters will be considered, with values assigned to 24 variables. The number of iterations was set to 10.

The clustering of cases at the commencement of the cluster analysis is presented in Table 5, which provides essential information on the preliminary assignment based on Euclidean distances or similarities. Consequently, this table offers a preliminary overview of the distribution of cases and the manner in which variables influence the initial groupings. In the initial cluster analysis generated in SPSS (Table 5), three clusters with distinctly different characteristics have been identified:

1. *Cluster 1:* This cluster groups cases with predominantly low values, reflecting a profile that is completely opposite to the best performing cluster. It represents a profile of low performance and high potential for improvement in the variables analysed.
2. *Cluster 2:* This group brings together cases with consistently high values in the variables analysed. It represents an excellent profile in terms of performance or characteristics assessed.
3. *Cluster 3:* Cases in this group show results that vary significantly according to the variable considered, with high scores in some dimensions and low scores in others. This cluster is characterised by its heterogeneity.

This initial configuration of clusters underscores the heterogeneity inherent in the data, thereby establishing a substantial foundation for the subsequent exploration of varied patterns among distinct groups. These results corroborate Hypothesis 1, which postulated that three distinct clusters would emerge into which workers could be grouped according to their soft skills.

The subsequent analysis involves the number of iterations, which, within the framework of cluster analysis, reflects the quantity of steps required by the algorithm to adjust the allocation of cases to groups and to attain a stable solution. In this context, and as illustrated in Table 6, cluster 1 required a total of 6 iterations to create, which is equivalent to the number of iterations required by cluster 3. This finding indicates that the algorithm necessitated five adjustments to determine the final centroid positions and to stably assign the cases to these groups. This finding may suggest that the formation of these clusters was more complex due to greater variability in the data or less differentiated characteristics between participants. Conversely, cluster 2 emerged in a total of 5 iterations, likely attributable to the higher homogeneity of its constituent cases. Refer to Table 5 below for further insights:

**Table 5.** Initial cluster centres.

| | Clúster | | |
| --- | --- | --- | --- |
| | 1 | 2 | 3 |
| Capacidad de Planificación y Organización | 1 | 7 | 6 |
| Planificación Estratégica | 1 | 10 | 6 |
| Adaptación al cambio | 1 | 9 | 8 |
| Autonomía | 2 | 10 | 1 |
| Orientación a resultados | 2 | 10 | 9 |
| Preocupación por la calidad | 1 | 10 | 9 |
| Implicación, Compromiso y Responsabilidad | 2 | 8 | 5 |
| Solución y Análisis de Problemas | 1 | 10 | 6 |
| Toma de decisiones | 1 | 10 | 5 |
| Visión de equipo | 2 | 9 | 10 |
| Manejo de Conflictos | 1 | 10 | 1 |
| Participación Activa | 1 | 10 | 5 |
| Motivación, Optimismo y Energía | 1 | 9 | 9 |
| Iniciativa | 1 | 10 | 3 |
| Comunicación Efectiva (Adecuación y Precisión) | 1 | 9 | 2 |
| Capacidad de Persuasión | 1 | 10 | 1 |
| Empatía | 2 | 8 | 9 |
| Desarrollo de Personas | 2 | 10 | 7 |
| Dirección de Personas | 1 | 10 | 6 |
| Servicio al Cliente | 1 | 9 | 3 |
| Desarrollo de Oportunidades de Negocio | 1 | 9 | 4 |
| Trabajo bajo Presión | 3 | 9 | 5 |
| Tolerancia a la Frustración | 3 | 9 | 7 |
| Aprendizaje e Innovación | 1 | 10 | 5 |

Source: Own elaboration, 2024.

**Table 6.** Iteration history

| | Cambiar en centros de clústeres | | |
| --- | --- | --- | --- |
| Iteración | 1 | 2 | 3 |
| 1 | 9,641 | 7,302 | 11,135 |
| 2 | ,793 | ,328 | ,637 |
| 3 | ,312 | ,264 | ,401 |
| 4 | ,339 | ,206 | ,367 |
| 5 | ,099 | ,000 | ,069 |
| 6 | ,000 | ,000 | ,000 |

Source: Own elaboration, 2024.

An analysis of the final cluster centres, as presented in Table 7, reveals that profiles demonstrating superior competences (i.e. those that excel in the variables analysed) are predominantly concentrated in cluster 2, with clusters 3 and 1 exhibiting a comparatively lesser extent. In other words, cluster 2 contains the highest number of cases with excellent performance, while the other clusters have a lower representation of these profiles with superior competences. This finding suggests that Cluster 2 may be the most effective cluster in identifying the most competent individuals in the analysis.

**Table 7.** Final cluster centres.

| | Clúster | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Capacidad de Planificación y Organización | 4 | 8 | 5 |
| Planificación Estratégica | 4 | 8 | 6 |
| Adaptación al cambio | 3 | 9 | 6 |
| Autonomía | 4 | 7 | 6 |
| Orientación a resultados | 4 | 9 | 6 |
| Preocupación por la calidad | 4 | 9 | 7 |
| Implicación, Compromiso y Responsabilidad | 4 | 7 | 6 |
| Solución y Análisis de Problemas | 4 | 9 | 6 |
| Toma de decisiones | 3 | 8 | 5 |
| Visión de equipo | 5 | 9 | 7 |
| Manejo de Conflictos | 3 | 8 | 5 |
| Participación Activa | 4 | 8 | 6 |
| Motivación, Optimismo y Energía | 3 | 8 | 6 |
| Iniciativa | 3 | 8 | 5 |
| Comunicación Efectiva (Adecuación y Precisión) | 3 | 8 | 6 |
| Capacidad de Persuasión | 3 | 8 | 5 |
| Empatía | 4 | 8 | 6 |
| Desarrollo de Personas | 4 | 9 | 6 |
| Dirección de Personas | 3 | 9 | 6 |
| Servicio al Cliente | 3 | 8 | 6 |
| Desarrollo de Oportunidades de Negocio | 3 | 8 | 5 |
| Trabajo bajo Presión | 3 | 8 | 5 |
| Tolerancia a la Frustración | 4 | 8 | 6 |
| Aprendizaje e Innovación | 3 | 8 | 6 |

Source**:** Own elaboration, 2024.

The application of an analysis of variance (ANOVA) to the clusters obtained is proposed in order to examine in which competencies there are greater or lesser divergences between the different profiles. To achieve this objective, the F statistic is utilised. This value quantifies the relationship between the variability between the means of the groups and the variability within the groups. A high F-value is indicative of greater differences between the means than within the groups.

**Table 8.** ANOVA analysis

| | Clúster | | Error | | | |
|---|---|---|---|---|---|---|
| | Media cuadrática | gl | Media cuadrática | gl | F | Sig. |
| Capacidad de Planificación y Organización | 669,020 | 2 | 2,870 | 527 | 233,120 | <,001 |
| Planificación Estratégica | 988,353 | 2 | 2,366 | 527 | 417,684 | <,001 |
| Adaptación al cambio | 1235,285 | 2 | 2,564 | 527 | 481,706 | <,001 |
| Autonomía | 331,150 | 2 | 2,784 | 527 | 118,965 | <,001 |
| Orientación a resultados | 921,753 | 2 | 2,756 | 527 | 334,486 | <,001 |
| Preocupación por la calidad | 954,938 | 2 | 2,789 | 527 | 342,424 | <,001 |
| Implicación, Compromiso y Responsabilidad | 386,007 | 2 | 2,304 | 527 | 167,555 | <,001 |
| Solución y Análisis de Problemas | 1036,651 | 2 | 2,374 | 527 | 436,754 | <,001 |
| Toma de decisiones | 902,495 | 2 | 2,531 | 527 | 356,575 | <,001 |
| Visión de equipo | 695,690 | 2 | 3,051 | 527 | 228,042 | <,001 |
| Manejo de Conflictos | 776,450 | 2 | 2,784 | 527 | 278,857 | <,001 |
| Participación Activa | 855,153 | 2 | 2,507 | 527 | 341,110 | <,001 |
| Motivación, Optimismo y Energía | 997,443 | 2 | 2,320 | 527 | 429,946 | <,001 |
| Iniciativa | 1015,791 | 2 | 2,242 | 527 | 453,053 | <,001 |
| Comunicación Efectiva (Adecuación y Precisión) | 964,170 | 2 | 3,049 | 527 | 316,231 | <,001 |
| Capacidad de Persuasión | 882,820 | 2 | 2,696 | 527 | 327,430 | <,001 |
| Empatía | 608,159 | 2 | 3,373 | 527 | 180,283 | <,001 |
| Desarrollo de Personas | 1029,297 | 2 | 2,172 | 527 | 473,921 | <,001 |
| Dirección de Personas | 1116,636 | 2 | 2,152 | 527 | 518,930 | <,001 |
| Servicio al Cliente | 939,852 | 2 | 1,958 | 527 | 479,908 | <,001 |
| Desarrollo de Oportunidades de Negocio | 808,540 | 2 | 2,256 | 527 | 358,384 | <,001 |
| Trabajo bajo Presión | 821,168 | 2 | 2,672 | 527 | 307,352 | <,001 |
| Tolerancia a la Frustración | 799,098 | 2 | 1,988 | 527 | 401,910 | <,001 |
| Aprendizaje e Innovación | 1051,080 | 2 | 2,370 | 527 | 443,547 | <,001 |

Source: Own elaboration, 2024.

The F values obtained indicate that the competences «*Empathy», «Involvement, Commitment and Responsibility*», and above all «*Autonomy*», exhibit the lowest F values in relative terms. This finding suggests a notable homogeneity between the different candidate profiles. Conversely, the «*People Management*» variable has been identified as the competence that exhibits the greatest heterogeneity. These results partially corroborate Hypothesis 2, which postulated that empathy and effective communication would be two soft skills present in all workers, irrespective of their cluster. The initial hypotheses did not take into account the potential significance of skills such as involvement, commitment, responsibility, and autonomy. However, the analyses conducted have demonstrated their relevance and the substantial foundation that the profiles under consideration in this study possess. Additionally, the second part of Hypothesis 2 is corroborated, as both the "empathy" and "effective communication" variables do not exhibit the greatest discriminative power when differentiating the analysed profiles based on their cluster classification.

An additional pivotal table is Table 9, which records the distances between the centres of the final clusters generated. This table is instrumental in evaluating the quality of the final cluster analysis solution and comprehending the relationships between the identified groups. This table provides information on the separation or similarity between the groups formed. In the context of our study, the most differentiated clusters are observed to correspond to cluster 2 and cluster 1. This finding suggests that these two groups are the most divergent from each other, thereby indicating that the characteristics of the cases within each of these clusters are significantly different. In summary, clusters 2 and 1 represent divergent profiles or behaviours. Conversely, the distance between clusters 3 and 1 would be the smallest. This finding suggests that clusters 3 and 1 are more proximate to each other in the multidimensional space defined by the variables analysed. This finding suggests that cases within these two clusters share more similarities, potentially leading to the development of comparable profiles. In summary, cluster 3 is practically at the same distance as clusters 1 and 2, i.e. they form a practically isosceles triangle.

**Table 9.** Distances between final cluster centres.

| Clúster | 1 | 2 | 3 |
|---|---|---|---|
| 1 | | 22,804 | 11,186 |
| 2 | 22,804 | | 11,853 |
| 3 | 11,186 | 11,853 | |

Source: Own elaboration, 2024.

Conversely, the maximum number of profiles assigned to each cluster was observed in cluster 3, with a total of 211 participants. This was followed by clusters 2 and 1, which had 179 and 140 candidates, respectively (see Table 10).

**Table 10.** Number of cases in each cluster

| Number of cases in each cluster | |
|---|---|
| 1 | 140 |
| 2 | 179 |
| 3 | 211 |
| Valid | 530 |
| Lost | 0 |

Source(s): Own elaboration, 2024.

This finding suggests that cluster 2 corresponds to a significant proportion of survey participants, specifically those who have attained an average score between 8 and 9 in the various competencies.

## 4. Discussion and Conclusions

The present study has focused on analysing and forecasting the skills that an individual possesses or should acquire in order to respond to an activity or task in their work environment. The present study has been conducted utilising quantitative analysis and data visualisation techniques.

Initial descriptive analysis of the entire sample revealed remarkable homogeneity in the statistics, with the means of the variables falling within a relatively narrow range. This finding suggests that there are no substantial differences in the mean values across the different variables. Dispersion, a measure of data dispersion or clustering relative to the mean, is also examined. In this instance, it is deemed moderate due to its low Pearson's Coefficient of Variation. This finding suggests that the 11 competences analysed, evaluated across 24 distinct dimensions, exhibit a uniform level of relevance and interest when collectively assessed for the purpose of evaluating a worker's soft skills. This outcome is pertinent not only to the present study but also to potential future research that may involve the evaluation of these skills.

A further investigation into the study revealed that the analysis enabled the profiles to be categorised into diverse groups, while concurrently demonstrating internal homogeneity. This facilitated the establishment of a classification system based on the competencies of each individual. The findings of this study provide substantial evidence for the efficacy of cluster analysis (utilising the K-means method) in identifying and categorising respondents' competencies into homogeneous groups. This approach enables the grouping of individuals based on their skills, while concurrently identifying significant patterns and disparities among them. This information can then be used to design training programmes focused on improving the specific competences of each group. This is of crucial importance for both the organisations and the workers themselves.

In this data set, the number of profiles with "outstanding" or "superior" competences is highest in cluster 2, followed by clusters 3 and 1. Cluster 2 groups the highest number of "outstanding" performance cases, while the other clusters include a smaller proportion of profiles with "superior" competences. This finding suggests that cluster 2 may be the most effective identifier of highly competent individuals in the analysis conducted. However, clusters 3 and 1 are highlighted as those best suited to inform the development of future competencies and the training and development of current

competencies. Consequently, these profiles are deemed more appealing to organisations, as they can offer enhanced professional performance.

The objective of conducting an ANOVA analysis on the clusters obtained is to ascertain which competencies exhibit significant variations between the various profiles. To this end, the F statistic is utilised, which quantifies the relationship between the variability of the means between the groups and the variability within them. The F-values obtained indicate that the competences Empathy, Involvement, Commitment, Responsibility and, most notably, Autonomy exhibit relatively low values, thereby reflecting a substantial homogeneity between the diverse candidate profiles. Conversely, the competence that exhibited the most significant heterogeneity was People Management. A more in-depth analysis of this finding is warranted, but the preliminary results suggest a tendency among the majority of workers for whom leadership of teams is not a desired career trajectory, and who may not be interested in developing this skill. Conversely, competencies such as empathy, involvement and autonomy are considered soft skills that are relevant to all roles within an organisation, irrespective of position, rank or organisational chart position.

## 5. Acknowledgements

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