

# ARTICLES

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## HAPPINESS AT WORK: MEASUREMENT SCALE VALIDATION

*Felicidade no trabalho: Validação de uma escala de medição*

*La felicidad en el trabajo: Validación de una escala de medida*

### ABSTRACT

Workers' happiness is a determining factor for both their short- and long-term efficiency. While several scholars have attempted to develop happiness measurement frameworks, this study analyzes the validity of a scale proposed by Del Junco, Espasandín, Dutschke, and Palacios (2013) in which factors determining worker happiness are elucidated and examined. The study offers a guide for validating scales using a structural and confirmatory approach on the basis of data derived from 262 companies in the Spanish province of Seville. The scale examines two dimensions—factors related to the job and to the worker—that confirm the need to combine both individual and environmental perspectives when analyzing worker happiness.

**KEYWORDS** | Happiness at work, scale validation, exploratory factor analysis, confirmatory factor analysis, structural equations

### RESUMO

*A felicidade do trabalhador é um fator determinante de sua eficiência em curto e longo prazos. Na literatura, encontramos tentativas de medir a felicidade. O presente trabalho faz a análise da validade de uma escala proposta por Del Junco, Espasandín, Dutschke e Palacios (2013) na qual fatores que determinam a felicidade do trabalhador estão expostos. O trabalho fornece um guia para a validação de escalas com uma abordagem estrutural e confirmatória, com base em dados de 262 empresas na província de Sevilha (Espanha). Da mesma forma, a escala mostra duas dimensões (fatores relacionados ao trabalho e fatores relacionados ao trabalhador) que confirmam a necessidade de combinar a perspectiva do indivíduo e do ambiente ao analisar a felicidade no trabalho.*

**PALAVRAS-CHAVE** | Felicidade no trabalho, validação de escalas, análise fatorial exploratória, análise fatorial confirmatória, equações estruturais.

### RESUMEN

*La felicidad del trabajador es un factor determinante de su eficiencia a corto y a largo plazo. En la literatura encontramos intentos de medir dicha felicidad directamente, y otros centrados en conocer cuáles son los elementos que generan esta felicidad. El presente trabajo realiza el análisis de validez de una escala propuesta por Del Junco, Espasandín, Dutschke y Palacios (2013) en la que se exponen factores determinantes de la felicidad del trabajador. El trabajo aporta una guía para la validación de escalas con un enfoque estructural y confirmatorio, basada en los datos de 262 empresas de la provincia de Sevilla (España). Asimismo, la escala muestra dos dimensiones (factores relacionados con el puesto de trabajo y factores relacionados con el trabajador) que confirman la necesidad de combinar la perspectiva del individuo y del entorno a la hora de analizar la felicidad laboral.*

**PALABRAS CLAVE** | Felicidad en el trabajo, validación de escalas, análisis factorial exploratorio, análisis factorial confirmatorio, ecuaciones estructurales.

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**CAROLINA RAMIREZ-GARCIA**<sup>1</sup>

[cramgar@upo.es](mailto:cramgar@upo.es)

ORCID: 0000-0002-7831-5139

**JUAN GARCÍA-ÁLVAREZ DE PEREA**<sup>1</sup>

[jgaralv@upo.es](mailto:jgaralv@upo.es)

ORCID: 0000-0001-6432-0204

**JULIO GARCIA-DEL JUNCO**<sup>2</sup>

[deljunco@us.es](mailto:deljunco@us.es)

ORCID: 0000-0003-0338-150X

<sup>1</sup>Universidad Pablo de Olavide, Departamento de Economía Financiera y Contabilidad, Seville, Spain

<sup>2</sup>Universidad de Sevilla, Departamento de Administración de Empresas y Marketing, Seville, Spain

## INTRODUCTION

What makes workers happy? This issue has been approached by researchers from a diverse number of fields, including philosophy, literature, psychology, sociology, and anthropology. However, the question has only recently arisen as a topic of research in the field of business administration. We are discussing a concept that cannot be uniquely defined: there is no universally agreed cause for it, since it results from a combination of multiple factors, such as genetics, personal traits, gender, and education level. (Heller, Judge, & Watson, 2002; Peterson, Park, Hall & Seligman, 2009).

The multidimensional nature of happiness has been established clearly in prior literature on the subject, such as in the work of Fisher (2014) and Rothmann (2013). While the hedonic and eudaimonic visions have mainly been used in initial studies of happiness across different spheres, the concept of *flourishment* (Diener et al., 2010) is currently being used to search for the origin of the inner well-being and mental health that serves as a base for happiness. Defining and influencing the perception of happiness represents a complex task. Alongside works dedicated to measuring happiness, further studies have also focused on analyzing the antecedents of happiness. These are factors that lead a worker into a situation requiring welfare.

Given the vast amount of time dedicated to work, job happiness constitutes a fundamental component for developing personal well-being and happiness (Fisher, 2014; Paschoal & Tamayo, 2008). Prior studies have recognized that work contributes less to a person's overall happiness compared with other factors, such as an individual's life partner, family, leisure, or friends. However, it does hold a proven amount of potential for increasing unhappiness (Argyle, 1992). Thus, positive psychology, centered on the study of well-being and personal happiness as positive emotions, has experienced an explosion in the field of happiness at work (Fisher, 2010, Luthans, 2002, Seligman & Csikszentmihalyi, 2000).

After conducting a series of interviews with Spanish and Portuguese workers, Del Junco Espasandín, Dutschke, and Palacios (2013) developed a scale of measurement in the field of happiness at work. Echoing the lack of studies on happiness at work in the field of management, the authors sought to propose an accessible and useful instrument for a manager to implement in his/her day-to-day management. This study provides this questionnaire to 262 companies and describes the processes of validation and data cleansing, while also using factor analysis to determine the underlying dimensions of scale and quality of fit of the measure concerning the real data of the construct requiring assessment.

The remainder of the paper is structured as follows: First, the process of the conceptualization of the term happiness in this work is described, revising models suggested by both previous studies and antecedents of happiness at work. Following this, different pieces of validity evidence from the questionnaire proposed by Del Junco et al. (2013) are analyzed. After describing the methodology, the main results of the analysis will then be shown and discussed. Finally, the main conclusions and the limitations and avenues for potential future research are presented.

## Literature review

Since the definition of happiness depends on the approach taken by authors in their work (Kiesebir & Diener, 2008; Veenhoven, 1991), several researchers use the term "subjective well-being" (Zelenski, Murphy, & Jenkins, 2008). However, this "well-being" has also been recognized as a component of happiness, which encompasses a richer, broader, and more complex set of ideas (Diener, 2000; Diener, Suh, Lucas & Smith, 1999; Massaro, 2013). Abundant works have concluded that happiness arises from a subjective measure made by each individual regarding their life's achievements (Diener, Sandvik, & Pavot, 1991).

Happiness is conceived from a double perspective: (a) the hedonic vision, according to which happiness will be determined by pleasure, the accumulated experience of affections obtained, which is centered mainly on what the person is feeling; and (b) the eudaimonic perspective, according to which happiness represents the degree to which internal coherence and personal fulfillment are achieved, an expression of an individual's potential capacity (Daniels, 2000; Ferreira, Silva, Fernandes, & Almeida, 2008; Fisher, 2014; Van Horn, Taris, Schaufeli, & Scheurs, 2004; Ryan & Deci, 2001). While, from a hedonistic point of view, happiness is compatible with a life of superficial values, greed, and the exploitation of others, the eudaimonic perspective focuses on the content of one's life and the processes involved in "functioning well" rather than "feeling good" (Rothmann, 2013). The distinction between these two ideas is such that it has been argued that hedonistic happiness is unsustainable in the long term in the absence of eudaimonic well-being (Fisher, 2010).

The hedonistic and eudaimonic duality is complemented by social welfare (Fisher, 2014). In addition, the concept of flourishing, understood as the experience of a life that "goes well", has been developed to describe a combination of feeling good and functioning effectively (Huppert and So, 2013). According to Diener, the flourishing approach involves having a purpose in life,

positive relationships, engagement, competence, self-esteem, optimism, and a feeling that an individual is contributing towards the well-being of others (Diener et al. 2010). It has been argued that if a continuum in mental health was established spanning both complete health (flourishing) and a lack of mental health (languishing), the position of people on that continuum could be determined using their scores regarding three types of well-being (emotional, psychological, and social) (Keyes, 2000). To achieve this flourishing, Huppert and So (2013) have differentiated ten individual characteristics (competence, emotional stability, engagement, meaning, optimism, positive emotion, positive relationships, resilience, self-esteem, and vitality), to aggregate both the hedonic and eudaimonic aspects. Finally, Keyes (2002) has also concretized this concept of mental health into a set of symptoms of positive feelings and positive functioning in life.

Happiness at work represents an issue of great importance because most human beings work out of both necessity and desire: It is a source of income and also offers an opportunity to implement personal abilities and skills, face challenges, and achieve personal fulfillment (Moyano Díaz, Castillo Guevara, & Lizana Lizana, 2008). This is true to such an extent that people who like their jobs would choose not leave them, even if they no longer needed the money (Argyle, 1992). According to Suh and Koo (2008), labor happiness can be analyzed at a number of levels, including the level of the global scope of the worker, the organizational or business level, and at work level. In this context, most existing studies have focused on the perspective of the worker (Groot & Maassen van den Brink, 1999), especially the group or environment in which they operate (Baker, Greenberg & Hemingway, 2006). Likewise, this analysis can also be performed considering the worker as an individual who supports mental processes (Judge et al., 2002), or by focusing on the weight of the “environment” on the level of happiness experienced by the worker (Warr, 2013). Finally, a third differentiated approach has also distinguished studies that measure the happiness/well-being of the workers themselves, from those who analyze the factors that lead to that perception of happiness.

There are a variety of constructs among the different measures of happiness at work. Job satisfaction is the most common one, although we can find others, such as individual commitment, organizational commitment, work involvement, intrinsic motivation, drive and value, work affection, and resilience (Fisher, 2010). However, none of these factors hold the ability to individually measure happiness levels at work alone. Consequently, a more suitable approach involves taking all of these factors into account to approximate a final concept of happiness at work (Fisher, 2010).

The multidimensional nature of happiness is clear and has been described explicitly in the work of Fisher (2014), Rothmann (2013) and Van Horn et al. (2004), among others. Warr (1994) distinguishes four primary dimensions (affective well-being, aspiration, autonomy, and competence), and a fifth, secondary dimension (integrated functioning) that comprises the four primary ones to reflect the person's overall status. Van Horn et al. (2004) propose five dimensions, three of which are in line with Warr's (affective, social, and professional well-being), while also including two additional measures (cognitive and psychosomatic well-being). Paschoal and Tamayo (2008) suggest a scale of well-being at work with both an affective dimension (emotions and moods at work) and a cognitive dimension (perception of expressiveness and personal fulfillment at work). According to these authors, there is a clear distinction between subjective well-being and psychological well-being: The former adopts a hedonic vision, based on the experience of pleasure in the face of suffering, while the latter adopts a eudaimonic approach to happiness. Singh and Aggarwal (2018) recently proposed four dimensions, two at the organizational level (supportive and unsupportive organizational experiences), and two dimensions of the worker (flow and intrinsic motivation, work repulsive feelings).

In an attempt to unify the different perspectives of happiness, Fisher (2014) proposes a model that focuses on an individual's core well-being at work, mood experience, and pleasant emotions while working. Subsequently, they also include moods and negative emotions at work, satisfaction judgments at work, and similar attitudes. Finally, this model is completed using the conceptions of general well-being at work, the eudaimonic components, and social welfare.

In terms of studies that examine factors giving rise to happiness at work, it can be said that this is explained by a sum of: (1) job characteristics, such as the salary, promotion opportunities, schedule, the level of danger of the job, its monotony, etc.; (2) work environment characteristics, such as the environment of the company, the average salary compared to their own, the size of the company and its potential, etc.; and (3) worker features, such as age, gender, educational level, relationship status, etc. (Linz & Semykina, 2010). Likewise, Parker and Hyett (2011) have identified organizational respect for the employee, employee care, and the intrusion of work into an individual's private life as positive and negative antecedents of well-being (Fisher, 2014).

One variable that has frequently been analyzed as a source of job happiness is wages. While some authors argue that high incomes contribute to an increase in individual happiness (Clark, Kristensen, & Westergård-Nielsen, 2009), others have shown that this relationship depends on the perception of workers regarding

the fairness of the rewards they receive for their work (Sloan & Williams, 2000). In isolation, Judge, Piccolo, Podsakoff, Shaw, and Rich (2010) did not find that salary effected job satisfaction, but the researchers did observe that employees with higher wages were slightly more satisfied than those who earned less. For Warr (2013), meanwhile, salaries have a positive influence on low-income workers, before then behaving neutrally after reaching a certain level of income. In line with this, we have identified another stream of studies that also consider intrinsic gains, such as the ability to acquire new skills and the positive effect of this in a generating well-being and increasing the level of happiness achieved (Origo & Pagani, 2009).

Professional stability, reflected in the quality of the employment contract, such as whether an agreement is fixed term or open-ended, has also been frequently analyzed as an antecedent of happiness. Both Sanín, López, and Gómez (2015) and Useche and Parra (2002) have found that job security has a remarkable influence on a worker's happiness, while Hosie and Sevastos (2009) and Sanín and Restrepo (2009) have observed that the lack of guarantee of a permanent job triggers negative feelings that limit the happiness of the worker. Thus, people in an organization will show greater satisfaction to the extent that they feel professionally safe (Wright, Larwood, & Denney, 2002), while employment using the most precarious contracts is negatively related with worker happiness levels (Gamero, 2007). However, it is a professional stability that influences the level of happiness of the worker, since “emotional stability” affects happiness both in the workplace and in other areas of personal life (Judge et al., 2002).

Finally, we have found other studies that seem to place an emphasis on the degree to which an individual has independence and freedom at work that extends beyond earnings or the contractual form. Thus, Benz and Frei (2004) observe a higher degree of happiness in workers who opt for self-employment, because the feeling of freedom they experience – but don't necessarily have - is greater. As was the case regarding the impact of salary levels, Warr (2013) has again found that this autonomy positively affects happiness at lower levels of independence before then achieving neutrally after a certain level. However, if freedom grows excessively, the value of the happiness achieved may decrease.

Regarding the history of antecedents in relation to flourishing, Warr's model (1987) recognizes nine environmental conditions responsible for psychological well-being (opportunity for control, skill use, interpersonal contact, external goal and task demands, variety, environmental clarity, availability of money, physical security, and valued social position). Similarly, the Job

Characteristics Model (Hackman & Oldham, 1980) specifies five dimensions of a task (skill variety, task identity, task significance, autonomy, and feedback) that may affect job satisfaction, work commitment, and other aspects of flourishing. Smith, Kendall, and Hulin (1969) have also proposed five facets of job satisfaction: work, supervision, co-workers, wage, and promotion.

## Description of the scale and data collection

Del Junco et al. (2013) propose building a scale for measuring happiness using responses to three questions:

- What is your definition of happiness?
- What do you understand by happiness in an organization?
- What is happiness at work? (Del Junco et al., 2013, p. 10).

These questions were asked in open interviews with Portuguese and Spanish workers, whose transcriptions were then analyzed using the ATLAS / TI V6.0 tool to carry out content analysis designed to extract the most relevant factors. These factors gave rise to 15 items, structured into a questionnaire (see Exhibit 1), that were proposed to measure organizational happiness (Del Junco et al., 2013, p. 15). Prior to these questions, two control questions concerning age and gender are also included, which correspond to individual variables that the literature considers may affect an individual's level of happiness.

### Exhibit 1. Questionnaire proposed by Del Junco et al. (2013)

Rate From 1 to 7 (Strongly agree) the following statements	
1	I enjoy my work
2	The family brings me happiness
3	I have good health
4	In my life, love plays an important role
5	I have internal stability
6	I am feeling objectively well
7	I have professional stability
8	At work, I get fair rewards
9	The company's organizational climate is good
10	Bosses manage well
11	I enjoy doing my job well
12	The organizational climate at my work unit is good
13	The internal motivation for my job is high
14	My tasks at the company are well designed
15	I'm an extrovert

Representative companies of varying sizes and from different sectors of activity within the province of Seville were chosen, each of which was selected from the list of companies provided by “*einforma.com*” (See Survey data collection characteristics in Exhibit 2), to validate the scale for this study.

### Exhibit 2. Survey data collection characteristics

Data Collection Methods	Direct, face-to-face in participating companies
Geographical scope	Seville
Universe	Micro-, small-, medium- and large-sized enterprises
Number of surveys	262

The questionnaires were made by visiting companies to maximize the number of responses. The first contact was made with the head of the company, preferably in the human resources department, highlighting our desire for them to participate in our research. The characteristics of the individuals surveyed are as follows:

Table 1. Sample composition

Gender	
Women	39.40%
Men	60.60%
Age	
20-29	12.40%
30-39	35.30%
40-49	24.70%
50-59	22.90%
60-69	4.70%
Older than 70	0%

### Analysis of the evidence of the scale validity

The validity of measuring an instrument for a specific use is defined as the degree to which the evidence and theory support the interpretation of the research instrument regarding that particular use (AERA, APA, NCME, 2014). In this sense, validation will consist of obtaining empirical evidence, examining relevant literature, and conducting logical analysis to evaluate each proposition. Unlike the traditional distinction offered by Content, Construct, and Criterion Validity, in the 2014 updated edition of the Standards of the American Education Research Association

(AERA), the American Psychological Association (APA), and the National Council on Measurement in Education, the concept of validity is proposed as unique and manifested by examples of validity (AERA, APA, NCME, 2014, pp. 14). These forms of evidence of validity can be specified as follows:

- **Evidence based on test content:** This is evidence obtained from the analysis of the relationship between the content of the questionnaire and the theoretical construct to be measured.
- **Evidence based on the response process:** A theoretical and empirical analysis of the response process that can provide evidence regarding the fit of the construct and the response given to the test.
- **Evidence based on the internal structure:** This shows the degree to which the relationships between the test items and the test components make up the construct to be interpreted.
- **Evidence based on relations to other variables:** The interpretation of a given use of the test implies that the construct must be related to other variables.
- **Convergent and discriminant evidence:** In the first case, we refer to the relationship between test scores and other measures that attempt to evaluate the same construct or similar constructs. The relationship between the test scores and measures with different purposes provides the discriminant evidence.

Next, we analyze these types of evidence regarding the scale proposed by Del Junco et al. (2013).

### Evidence based on test content

To obtain these pieces of evidence, it is first necessary to define the theoretical construct that is intended to be measured, and to gain an understanding of the construct in terms of the concept or characteristics that are to be assessed using the designed test (AERA, APA, NCME, 2014). The detailed description of this construct provides a conceptual framework for the measuring instrument. In the case of the scale proposed by Del Junco et al. (2013), the extent to which the items reflect the theoretical aspects of the concept of happiness, as described in the theoretical section of this work, was analyzed first. Towards this purpose, we have

classified the items in the questionnaire that reflect the hedonic side of happiness as “Hed”, while those reflecting the eudaimonic side of happiness are classified as “Eud” (Fisher, 2010). Likewise, given that the factors that influence worker happiness consist of a combination of individual and environmental aspects (Warr, 2013), the second column of Exhibit 3 classifies the statements according to these aspects.

### Exhibit 3. Content validity analysis

	Rate From 1 to 7 (Strongly agree) the following statements	Hed/Eud <sup>1</sup>	Ind/Ent <sup>2</sup>
1	I enjoy my work	Eud	Ind
2	The family brings me happiness	Hed	Ent
3	I have good health	Hed	Ind
4	In my life, love plays an important role	Hed	Ind
5	I have internal stability	Hed	Ind
6	I am feeling objectively well	Hed	Ind
7	I have professional stability	Hed	Ent
8	At work, I get fair rewards	Eud	Ent
9	The company's organizational climate is good	Eud	Ent
10	Bosses manage well	Eud	Ent
11	I enjoy doing my job well	Eud	Ind
12	The organizational climate at my work unit is good	Eud	Ent
13	The internal motivation for my job is high	Eud	Ind
14	My tasks at the company are well designed	Eud	Ent
15	I'm an extrovert	Hed	Ind

Notes: <sup>1</sup>Item that addresses the Hedonic or Eudemonic component. <sup>2</sup>Item that addresses an Individual or Environmental factor.

The items extracted from the content analysis reflect both factors related to the worker (Groot & Maassen van den Brink, 1999) and the groups in which they carry out their tasks (Baker et al., 2006; Suh & Koo, 2008). As the questionnaire has been extracted from an exploratory study, these items do not strictly reflect variables previously delimited by the researcher, but instead highlight the variables that interviewees perceive as being relevant to the questions regarding the field of happiness at work. By observing these variables, we can then state that

the content of these items is framed within the array of works that deal with happiness antecedents, not with direct measures regarding happiness.

## Evidence of validity in the response process

The questionnaires have certain limitations. However, the researcher can control for these if the fundamental principles of the design and administration of the surveys (Dillman, 2000) are followed. This category includes the pre-test, the follow-up procedures, and the non-response bias analysis. Regarding the scale proposed by Del Junco et al. (2013), the non-response bias was analyzed in terms of both the sector and size of the company to check if the sample could generate errors when validating the scale. The nonparametric Chi-square test showed that the sample composition reflected the population composition.

## Evidence based on the internal structure

To analyze the consistency of the items of the scale regarding one or more of the factors, the normality of the data was assessed and an Exploratory Factor Analysis (EFA) conducted using SPSS 22 statistical package (George & Mallery, 2003). This was done to contrast its multidimensionality and reliability level (Hair, Anderson, Tatham, & Black, 1999). The interquartile range method was used, replacing outliers with means of the values of the variable once the outlier was eliminated, to detect atypical cases or outliers that may affect the validity conclusions. An example of a study variable can be seen in Table 2.

Table 2. Calculations of the outliers' detection interval

Variable 1	I enjoy my work
Median (Q2)	0.365
IQ Range	1.349
Q1	-0.309
Q3	1.04
Lower Limit <sup>1</sup>	-4.358
Upper Limit <sup>1</sup>	5.089

Note: <sup>1</sup>Interval limits for not considering data as outliers.

The normality of the data was analyzed using the Kolmogorov-Smirnoff test, which showed that the data did not follow a normal distribution. Using asymptotically robust

statistics, however, meant that the study was unaffected by the non-normality of the data. In the EFA, a Cronbach's Alpha that exceeds 0.7 is required as a criterion of reliability for the different dimensions (Hair et al., 1999). Regarding the measures of both Extracted Variance (variance that is able to explain the latent factor or variable) and Composite Reliability (internal consistency of the indicators), 0.5 and 0.7 have traditionally been established as the respective cut-off points (Hair et al., 1999). However, Valentini and Damásio (2017) state that a strict threshold cannot be set for these measures because they can suffer alterations depending on the number of items and the homogeneity of the factor loads. These could then limit the interpretation of the results (Valentini & Damásio, 2017), meaning these values are analyzed with caution. The EFA was performed using the maximum likelihood extraction method. This approach offers results close to those generated by Confirmatory Factor Analysis (AFC) and varimax rotation, due to the ease they offer when interpreting factor loads (Hair et al., 1999). The significance of the model is analyzed with the KMO coefficient (Kaiser-Meyer-Olkin), whose values have to be close to 1, and the Barlett sphericity test, the results of which must be significant (Hair et al., 1999).

The first EFA results are shown in Table 3, where the value of the KMO measure, 0.876, indicates a high correlation regarding the variables. This means the test can be considered good (it is considered to be excellent when  $KMO > 0.9$ ), with the results also deemed significant using the Barlett sphericity test, thus justifying the factor analysis. The results also show that two factors on the scale can be distinguished, which jointly explain 45.53% of the variance. In this context, the initial factor loadings are as follows:

Table 3. Results of the initial model factor analysis (15 items)

	Item	Factor 1	Factor 2
1	I enjoy my work	0.616	0.288
2	The family brings me happiness	0.09	0.508
3	I have good health	0.03	0.504
4	In my life, love plays an important role	0.06	0.398
5	I have internal stability	0.19	0.756
6	I am feeling objectively well	0.397	0.58
7	I have professional stability	0.459	0.322
8	At work, I get fair rewards	0.748	0.085
9	The company's organizational climate is good	0.834	-0.018
10	Bosses manage well	0.892	0.091

(continue)

(continuation)

Table 3. Results of the initial model factor analysis (15 items)

	Item	Factor 1	Factor 2
11	I enjoy doing my job well	0.292	0.58
12	The organizational climate at my work unit is good	0.668	0.229
13	The internal motivation for my job is high	0.664	0.35
14	My tasks at the company are well designed	0.708	0.214
15	I'm an extrovert	0.327	0.257

In Table 3, we can also see that variable number 4 (“In my life love plays an important role”) has factor loadings that are significantly less than 0.5, indicating reliability problems. Likewise, if this variable is eliminated, Cronbach's Alpha of the scale changes from 0.884 to 0.888. We therefore consider it relevant to remove the variable from the final scale. This process also applies regarding the variables “I have good health,” “The family brings me happiness,” and “I am an extrovert.” Table 4 shows the results of the final model after these four factors have been eliminated:

Table 4. Results of the final model factor analysis (11 items)

Item	Factor 1	Factor 2
At work, I get fair rewards	<b>0.699</b>	0.262
The company's organizational climate is good	<b>0.856</b>	0.085
Bosses manage well	<b>0.871</b>	0.24
The organizational climate at my work unit is good	<b>0.613</b>	0.349
The internal motivation for my job is high	<b>0.555</b>	0.539
My tasks at the company are well designed	<b>0.649</b>	0.35
I enjoy my work	<b>0.504</b>	0.502
I have internal stability	0.106	<b>0.627</b>
I am feeling objectively well	0.308	<b>0.574</b>
I have professional stability	0.353	<b>0.476</b>
I enjoy doing my job well	0.138	<b>0.716</b>

From the perspective of construct analysis, eliminating these items offers a response to the fact that they deal with factors theoretically related to happiness (love, health, family, extroverted character), yet lack a clear relationship with the concept of happiness as defined by this study. Given the results, and when analyzing the content of the items of each dimension, we can distinguish two dimensions: the first concerns factors related to the job environment (Cronbach's Alpha = 0.91) and the second includes worker factors (Cronbach's Alpha = 0.72).

These scales are useful for managerial practice, where the score is used to provide an idea of the happiness of employees in their working environments. However, using a more academic approach to deploy the scale in more complex study models, Confirmatory Factor Analysis (CFA) is carried out using Structural Equation Models (Bagozzi, Yi, & Phillips, 1991). These are used to determine which variables should form the definitive measurement scale.

Using a structural equations approach introduces an estimation regarding the measurement error of the factors. It also introduces measures regarding the goodness of fit by examining the validity of the regression equations and the proximity of the theoretical model to reality (Byrne, 2006). These latter measures are based on a comparison of the covariance matrix of the sample with that of the population, using the Chi-Square statistic and its associated p-value. As this statistic is sensitive to sample size, while also being based on the distribution centrality, numerous alternative adjustment indexes have emerged in recent decades offering a more pragmatic view (Byrne, 2006). Regarding the non-normality of the data, asymptotically robust indicators are used, from which the Satorra-Bentler Chi-Square (Satorra, 1993) emerges as the most reliable statistic through which to evaluate the structure of means and covariances under various sample distributions and sizes (Hu, Bentler, & Kano, 1992; Curran, West, & Finch, 1996). Table 5 summarizes the most frequent Fit indexes to be analyzed, along with the Chi-Square SB and its p-value.

Table 5. Goodness of fit indexes

Fit Index		Cut-off point	Comments
Most widely accepted Index	Comparative Fit Index (CFI)	>0.95	Created by Bentler (1990). It avoids problems regarding small samples and, although a CFI value greater than 0.9 has formerly been considered acceptable (Bentler, 1992), a cut-off value has been established of around 0.95 (Hu and Bentler, 1999). The CFI is regarded as the most widely accepted goodness of fit index (Byrne, 2006).
Absolute Fit Indexes	Goodness of Fit Index (GFI)	>0.9	Considered analogous to the value of the R square of the multiple regression models (Tanaka, 1993).
	Adjusted Goodness of fit Index (AGFI)	>0.9	Adjusted for the degrees of freedom of the model, penalizing the incorporation of additional parameters.
	McDonald Fit Index (MFI)	>0.89	Hu and Bentler (1999) specified the cut-off value for MFI other than that of GFI and AGFI
Absolute Misfit Index	Root Mean Square Error of Approximation (RMSEA)	<0.6	One of the best information-provider indexes in the covariance structure model (Byrne, 2006). It is sensitive to model specification errors, as it can be used as an interpretive guide regarding the quality of the model and for allowing confidence intervals to be built around the RMSEA values



In terms of the dimension referring to the characteristics of the job environment, the first analysis, as shown by the results in Table 6, suggests acceptable measures regarding the goodness of fit for some indicators do not meet the required limits:

**Table 6. Goodness of fit indexes of the initial model of Factor 1**

	Cut-off point	Characteristics of the job environment
$X^2_{SB}$ (g.l.)		39.67 (9)
P-Value	>0.05	0
GFI	>0.9	0.932
AGFI	>0.9	0.841
RMSEA <sub>robust</sub>	<0.6	0.114
CFI <sub>robust</sub>	>0.95	0.941
MFI	>0.89	0.943
Cronbach's Alpha	>0.7	0.893
Composite Reliability	>0.7	0.894
Extracted Variance	>0.5	0.588

Starting from the fact that both the Chi-Square BS and its p-value are not significant, we must identify the variable(s) motivating this lack of adjustment of the model. This is based on the Lagrange Multiplier Test (LM Test), which indicates which relationships can be included to improve the fit of the model. According to the test, when correlating the variable "My tasks in the company are well designed" with "At work I get fair rewards", and "The internal motivation for my job is high", a better fit is achieved, as shown in Table 7:

**Table 7. Goodness of fit indexes of the model of Factor 1 with correlated factors**

	Cut-off point	Characteristics of the job environment
$X^2_{SB}$ (g.l.)		6.95 (6)
P-Value	>0.05	0.325
GFI	>0.9	0.987
AGFI	>0.9	0.956
RMSEA <sub>robust</sub>	<0.6	0.025
CFI <sub>robust</sub>	>0.95	0.998
MFI	>0.89	0.998
Cronbach's Alpha	>0.7	0.893
Composite Reliability	>0.7	0.901
Extracted Variance	>0.5	0.606

This correlation between items can give rise to multicollinearity problems in complex models. This means it may be advisable to eliminate the item that is the source of this problem (in this case, variable 14), thus achieving a better fit of the model. This is shown in Table 8:

**Table 8. Goodness of fit indexes of Factor 1 after variable 14's elimination**

	Cut-off point	Characteristics of the job environment
$X^2_{SB}$ (g.l.)		6.84 (5)
P-Value	>0.05	0.23
GFI	>0.9	0.986
AGFI	>0.9	0.959
RMSEA <sub>robust</sub>	<0.6	0.038
CFI <sub>robust</sub>	>0.95	0.995
MFI	>0.89	0.996
Cronbach's Alpha	>0.7	0.876
Composite Reliability	>0.7	0.879
Extracted Variance	>0.5	0.597

The model's initial goodness of fit results for the scale, concerning the worker-related factors, are presented in Table 9:

**Table 9. Goodness of fit indexes of the initial model of Factor 2**

	Cut-off point	Characteristics of the job environment
$X^2_{SB}$ (g.l.)		30.65 (5)
P-Value	>0.05	0
GFI	>0.9	0.933
AGFI	>0.9	0.799
RMSEA <sub>robust</sub>	<0.6	0.14
CFI <sub>robust</sub>	>0.95	0.869
MFI	>0.89	0.952
Cronbach's Alpha	>0.7	0.761
Composite Reliability	>0.7	0.749
Extracted Variance	>0.5	0.429

In this case, while the goodness-of-fit measures do not fall within the ideal intervals, the decision was taken not to continue adjusting this dimension. This was because the four starting items available make it very likely to encounter model specification problems if these variables are discarded.

## Convergent and discriminant evidence

Here, we attempt to confirm that each factor extracted from the CFA measures a single construct while also confirming that the construct referred to is significantly different from the rest of the factors included in the questionnaire. We attempt to identify whether the scales measure only their objective construct or, on the contrary, if they get mixed up with other factors contained in the study. To provide evidence of this type, we follow the procedure proposed by Fornell and Larcker (1981), who argue that there is discriminant validity evidence so long as the variance extracted is higher than the squared correlation between the two constructs. This assessment is usually developed using a matrix in which the correlation between factors for each pairwise are compared with the variance extracted from each factor. In our case, the matrix is extremely simple, but it can still be used to show the procedure for illustrative purposes. In Table 10, the squared correlation of the two factors ( $0.644^2$ ) is lower than the variance extracted from both factors, meaning that factors 1 and 2 are measuring different constructs.

Table 10. Discriminant evidence

	Factor 1	Factor 2
Factor 1	0.597	
Factor 2	0.414	0.409

The second piece of evidence argues that the value of the correlation, plus and minus 1.96 times the standard deviation of the covariance of the indicator, should form an interval in which 1 is not included between the extremes (Hair et al., 1999). In our case, if we add and subtract the product of 1.96 by 0.08 from the correlation score of 0.644, we obtain the interval [0.47-0.81], where 1 is not between the extremes. This means that the second criterion is also met in the case of both dimensions.

## DISCUSSION

Based on exploratory content analysis, Del Junco et al. (2013) propose a scale that is initially considered by the authors as an instrument of organizational happiness. By carefully analyzing the content of the scale, it is observed that it represents antecedents of happiness at work, rather than measuring happiness itself. Validity analysis of the proposed items reflects the fact that two dimensions underlie the scale-job environment and worker-related factors, both of which are added to the hedonic balance between accumulated positive and negative life experiences and the achievement of personal goals reached at work (Origo &

Pagani, 2009). At the same time, the items of this instrument also consider both the individual characteristics and the effect of the organizational factors, following a number of studies concerning how to manage the whole worker-environment relationship (Fisher, 2010; Warr, 2013). This combination of internal and external factors has enriched studies analyzing the sources of happiness. This is because, as Pan and Zhou (2013) have described, most studies on happiness have focused primarily on the income-happiness relationship, neglecting other variables. Likewise, Seibert, Crant, and Kraimer (1999) have highlighted the interest in studying the relationship between the internal and external environments of the individual to gauge their impact on the happiness of the organization; this refers to those areas collected in the scale that have been revealed to comprise two different dimensions. These dimensions are consistent with Singh and Aggarwal's (2018) approach, in which happiness at work implies an interaction between the experiences of an individual employee and organizational experiences.

The items in the questionnaire include several relevant aspects considered in the existing literature on happiness at work. In this sense, job satisfaction (Fisher, 2003) constitutes a relevant factor in terms of its impact on positive psychology (Proudfoot, Corr, Guest, & Dunn, 2009; Bakker & Oerlemans, 2011). Additionally, job motivation also has a positive influence on individual well-being within a company (López & Fierro, 2015). Furthermore, the organizational climate within both the work unit and the organization has been confirmed in the literature as a relevant factor regarding happiness (Chimento, 2007; Gutierrez, 1988; López, Chambel, Muñoz, & Silva da Cunha, 2018). Similarly, salary also emerges as a relevant item among the sources of happiness in the questionnaire (Diener & Biswas-Diener, 2002; Frey & Stutzer, 2000; Fuentes & Rojas, 2001; Hagerty & Veenhoven, 2003; Schyns, 2002; Kenny, 2005; Zuzanek, 2013). The ways tasks are designed is also considered by Fisher (2010) as a characteristic that contributes toward improving happiness at work, while Likert (1979; 1986) has shown the influence of sound management on the happiness of people within an organization.

## CONCLUSIONS

If only individual factors were weighed to gauge worker happiness, such as genetics or hereditary factors, little could be done to increase and manage the level of happiness (Arvey, Boucharda, Segal, & Abraham, 1989; Haybron, 2000). This work has developed the validity analysis of the scale previously proposed by Del Junco et al. (2013) to measure factors of happiness at work. Based on the

results obtained, conclusions can be drawn at both the theoretical and methodological levels, and for professional practice.

On a theoretical level, and in line with Linz and Semykina (2012), the validity analysis of the scale has revealed two dimensions. The first is related to the job environment, which, judging by their validity and reliability values, are highly relevant. The second concerns intrinsic worker factors. Much like Fisher (2010), who specifies the measurement of happiness at work using three levels (the work itself, the contextual characteristics of the job, and the organization as a whole), the scale presented here differentiates between aspects involving the job environment (which includes both work, context, and organization), and those involving the worker as an individual.

From a methodological standpoint, this work provides a possible guide through which it is possible to validate scales following a confirmatory approach. This study therefore aims to offer a tool for researchers who validate scales both designed by themselves and those which are the results of the application of scales based on existing studies. Additionally, Fisher (2010) has called for the need to improve the measurement of happiness at work, since existing measures have only collected variables related to it in general terms. This paper attempts to contribute to overcoming this limitation by employing a more concrete scale that has been shown to meet the requirements of reliability and validity. Interestingly, while Ones and Viswesvaran (1996) have suggested that the higher the number of variables, the better predictions are achieved, in our case, the statistical analysis shows that a large number of items is not necessary.

Finally, from a managerial perspective, of the 15 items proposed by Del Junco et al. (2013), this work presents 11 questions that are deemed as reliable and valid in obtaining a practical approximation of the sources of employee's happiness at work. The 11 questions are shown in Exhibit 4.

#### Exhibit 4. Questionnaire to be used in a managerial environment to measure happiness at work

Rate From 1 to 7 (Strongly agree) the following statements
At work, I get fair rewards
The company's organizational climate is good
Bosses manage well
The organizational climate at my work unit is good
The internal motivation for my job is high
My tasks at the company are well designed
I enjoy my work
I have internal stability
I am feeling objectively well
I have professional stability
I enjoy doing my job well

This simple scale is useful in that it enables managers to obtain an approximation of the level of happiness of their workers and take action according to the results of the survey without having to invest in consultants or specialized companies. The measures proposed here are considered active and direct measures as they require a source of information external to the company. In addition, passive or indirect measures, such as staff retention, turnover, and absenteeism, may also be attractive to companies. This is because they use easily accessible internal sources of information, resulting in both immediacy and low cost.

In Spain, most companies that form part of the country's industrial and commercial networks cannot carry out in-depth research to determine the happiness levels of their employees. In this regard, it is useful for managers to use questionnaires, such as the one proposed by Del Junco et al. (2013), which can combine both some of the constructs cited and offer insights into the happiness levels of the workers within their organizations.

#### Limitations and recommendations for future research

The term "happiness at work" can itself be considered as the source of some study limitations. This is due to the absence of a unique definition and its differentiation concerning other similar terms. While we have attempted to show the fundamental problems that arise due to the study being based on previous contributions from a diverse range of authors, to provide a fuller understanding it would be necessary to extract new factors from both the environment and the workers themselves across various disciplines to enrich and complete the scale presented here. Regarding the validation of the scale, this work does not offer evidence based on the relationship with other variables. Consequently, it would be convenient for this scale to be used in conjunction with measures of happiness at work that act as a criterion variable for validating the use of this scale.

Regarding the elimination of items from the questionnaire, this process does not imply that the items in question fail to reflect relevant factors for happiness at work. On the contrary, their elimination may be due to the omission of items that form a new dimension related to the content of the items removed. That it is what has happened regarding issues related to health, love, or family, which, according to the literature, are relevant, highly complex constructs. Instead, these have been collected in a single item, while it has been statistically necessary to omit them from the final scale as they do not have any correlation with others. Therefore, a future line of work would consist of enlarging

the number of issues related to these factors to reflect more dimensions of a concept as complex as happiness at work. This would include factors that positively and negatively determine the level of happiness of the worker (Ferreira et al., 2008).

Finally, it is worth noting that the geographical location of the sample (limited to the province of Seville) may represent another limitation regarding this study's conclusions. Although geographical and cultural factors are not likely to invalidate the objective of the study, future research conducted in a wider geographical environment may yield more data regarding the reliability and validity of the scale.

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