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Design and Validation of the Quality of Work Life Scale for Call Center Workers of a Private Company in Downtown of Lima, 2019

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ABSTRACT

Objective
The purpose of the research was to build a scale of quality of working life, in telemarketers of a call center company in Downtown of Lima, with a sample of 700 telemarketers.

Methods
The methodology was obtained through a non-probabilistic convenience sampling, the validity was carried out through the judgment of 10 experts and the indices were obtained using the V. of Aiken $p>0.80$ and the Binomial test $p<0.05$ in 29 questions. The construct validity was obtained through confirmatory factor analysis, to explain the quality of working life composed of five dimensions according to Maslow's theory.

Results
In the results, the Kaiser Meyer Olkin (KMO) measurement test yielded a value of 0.930, which means that it is greater than> 0.80 over the number of observations for the base of respondents (700), for the test of Bartlett's sphericity. is not significant ($p<0.05$), which means a correlation between the variables, in the total variance explained indicates that the instrument has five factors that explain 54.982% of the total variance, it tells us that the test is acceptable, whose factorial the loads ranged between 0.4 and 0.8 respectively. The reliability by internal consistency with a value of 0.919.

Conclusion
The relevance of the theoretical model to explain the quality of working life composed of five dimensions according to Maslow's theory was verified, showing adequate adjustment indices: $X^2/gl=4.920$ and 4.711, CFI=0.835 and 0.90, RMSEA=0.075 and 0.073, except TLI=0.805 and 0.815 that did not show an adequate value.

Keywords
Quality of work life; Quality-of-life; Design; Validation; Psychometry.

INTRODUCTION

The study of the quality of work life (CVL) is of gradual interest given the new structures of business and work organization that originate in individuals high-levels of pressure and work stress, which brings as a consequence difficulties at the level of productivity and performance within your work area. However, CVL humanizes the workplace, since it provides the basic needs to employees, seeking to provide an environment where they can develop for the benefit of their good performance.[1]

The International Labor Organization (ILO, 2012) defines work as "*the set of human activities, paid or not, that produce goods or services in an economy, or that satisfy the needs of a community or provide the means of sustenance for the individuals.*"

The first experience of Quality of Work Life was presented in the USA. General Motors was the first company to address this concept in 1971. Procter And Gamble, Exxon, Ford and Polaroid continued the studies and inquired more about the subject.[2]

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Asenjo[3] mentions the fulfillment of the position and the work environment represent valuable elements that will determine an adequate condition within the work. If the environment is inappropriate, it will affect the training of the employee, thus causing discomfort that will be reflected in their productivity and generating inappropriate behaviors (absenteeism, turnover, others).

An adequate quality of life leads to a good climate of trust and respect, which generates that workers generate their contributions and increase their chances of success in all areas, while management will emphasize reducing control mechanisms.

Cerdá[4], Meneses et al[5] carry out their investigation of a quantitative approach of a descriptive-instrumental type of CVL scale in the transportation sector, it was applied to 468 drivers of the SETP of the City of San Juan de Pasto (Colombia), with ages between 20-70-years old, incompleted primary and secondary education level. The psychometric properties of the scale were determined using the EFA procedure, we sought to know the grouping of the items. At the first moment, an analysis of the correlation matrix was carried out through Bartlett's sphericity test, obtaining a χ (Chi square) of 20417.726, which shows the existence of correlation between the items, a significance level of 0.000 indicating that the research hypothesis is accepted. In other words, there is a relationship between the results of the Scale, thus forming factors, and a Kayser Meyer Olkin index of 0.783, values that demonstrate the viability of using factor analysis.

Vega et al[6] in their, "*Empirical study of quality of working life, four indicators: job satisfaction, work conditions and environment, organization and global indicator, Private and Public sectors. Development, application and validation of the instrument*" the study aimed to develop an instrument to know the quality of working life of the company. The sample of this research has included 128 workers from the private and public sectors. The instrument that was applied to measure the quality of work life consists of 118 items that have been divided into 4 indicators: job satisfaction, work conditions and environment, organization and global indicators. It is concluded that the scales have been validated for the sample that can be used to measure the quality of working life of private companies in different sectors and public, and give a significant contribution to correct the strategies applied in companies by implementing an improvement strategy to all organizations with internal and external policies that are of great interest.

Peña[7], Quintero[8] posited needs at five levels; physiological, security, affiliation, recognition and self-actualization. Where the first four reflect the needs for deficit (primordial), the fifth need reflects the highest-level, growth motivation or need to be.

According to Maslow, needs are an individual's right. However, in order to satisfy them, you must work on them to achieve what is needed, to find solutions and be happy. These being divided into pleasure, charm, vigor, work, etc. When it fails to achieve the objectives of one of these, it can enter a state of shame, decay, among others. At the same time, when these needs are adequately satisfied, others are born that human beings will have to achieve.[9]

With regard to Maslow's theory of basic needs with quality of work life, it can be easily applied to the work environment. For a worker, the journey begins when lower-order needs (physiology and safety) are met. That is, when a person wants to work, they will be anxious about receiving a salary. Thus, not only will you need your organization to receive a salary; The company must provide a place where the worker can have minutes of relaxation and where he can satisfy his hunger, such as a dining room or recreation room (physiological needs).[7-9]

From the moment the first need is covered, the employee will dedicate himself to establishing and organizing his profession for some demands and a stable and safe work environment (security). Therefore, the worker will wish to have access to a healthy life; thus, for example, guarantees in risk prevention and occupational safety. Then, he will seek stability in the organization, heading for his professional development and preserving his interests.

When the basic levels are reached, the worker will want to satisfy their affiliation needs. Bearing in mind interpersonal relationships in the organization as they are necessary and effective. If the organization encourages collaboration between employees, performance will increase generating a good quality of work life. It is important that there is communication when carrying out any project of the organization; workers should consider promoting a sense of belonging.

Workers will previously develop new motivations and seek to be successful in their company, this means: seek to be recognized in their work. If the organization and their colleagues recognize the effort of their work, the worker will increase their confidence, at the same time they will reinforce their identity and move towards success.

With the aforementioned, we say that Maslow's theory has been successful in labor issues, that is why organizations will be able to implement an order of needs, being able to organize themselves in the best way and achieve the objectives in an immediate and appropriate way a good quality of working life.

Psychometric Aspect

It should be noted that psychometric tests allow an objective analysis of the quality of work life construct with a representative sample, corresponding to our reality. It is important to mention, examine the reliability of the instrument using other procedures such as temporal reliability or reliability by parallel forms.[10]

METHODS

Lawler[11] cataloged this research as instrumental studies since the purpose is to execute an instrument from the construction to the resolution of the psychometric properties. The research was of a non-experimental design, for Hernández et al[1] the variables are not altered, they are only examined and translated, they are also

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cross-sectional, since the data are collected in a single time. It was applied at the applied level, for Angarita[8], it takes the title of "*practical or empirical research*", it is distinguished by the search for the knowledge obtained, they acquire others, after implementing and structuring the practice dedicated to research. Therefore, the research was quantitative, Hernández et al[1] begins a conception that indicates and deduces objectives that studies various sources for the creation of the theoretical framework. In this way, the instrument is created, the psychometric properties being resolved.

Participants

For this research, a sample of 700 collaborators from 18-years-old to 55-years-old was used, all telemarketers from a call center of a private company in Downtown of Lima. Thus provide the following guide: 100=poor, 200=fair, 300=good, 500=very good, ≥ 1000=excellent.

It is worth mentioning that the sampling was non-probabilistic for convenience; used to prepare samples according to the possibility of access, the willingness of individuals to be part of the sample, in a given space of time.[12] In turn, they were informed of the procedure through informed consent so that they can participate voluntarily and anonymously.

Instrument

In the research carried out for data collection, the quality of work life scale was used, which in its preliminary version was composed of 30 items structured in 4 dimensions (Autonomy, Personal development, Work safety and Equity). It should be noted that, in the final version of the instrument, it is composed of 5 dimensions (Autonomy, Personal development, Job security, Equity, Fair salary) and 29 items with optimal values for adequate validity and reliability.[13]

Analysis of Data

In the first phase, a scale with 30 items were made and quantifications were carried out by judges' criteria through the Aiken's V coefficient. As a result, of the 30 items, none were removed and only ten were corrected for clarity. The pilot study consisted of 100 call center workers from a private company in Downtown of-Lima, and with the database obtained, the internal reliability of the instrument in question was carried out. Likewise, it was verified by statistical analysis of Cronbach's alpha data; The Guttman Coefficient halving method was also performed.

In the second phase, the instrument created with the items that were suitable was applied to a sample of 700 call center workers from a private company in Downtown ofLima, the analysis of items were used again considering descriptive statistics such as; the corrected test item, communalities; the standard deviation; Fisher's coefficient of skewness; Fisher's kurtosis coefficient; Since this analysis allows finding evidence for content validity.[14,15] Then, the data processing technique was used, as well as the data processing tables to tabulate and process results of the instrument using the Microsoft Excel 2013 program and the statistical software Statistical Package for Social Sciences (SPSS), version 25.0. The Analysis of Moment Structures program (AMOS), version 25.0 was used to perform the confirmatory analysis.

RESULTS

Exploratory Factor Analysis

In the EFA, the Kaiser Meyer Olkin (KMO) measurement test was performed for the quality of work life scale is 0.930, which means that it is > 0.80 on the number of observations for the base of respondents (700). Which is acceptable for testing. On the other hand, for Bartlett's sphericity test it is not significant (p <0.05). Which means a correlation between the variables.

On the other hand, in the total variance explained it indicates that the instrument has five factors that explain 54.982% of the total variance, it tells us that the test is acceptable since it is equivalent to greater than 50% of the scale in general (Table 1).

Finally, the rotated component matrix shows us that the test was organized into 5 factors whose factorial loads ranged between 0.4 and 0.8 respectively (Table 2).

Confirmatory Factor Analysis

In the confirmatory factor analysis model 1, the distribution of the 5 dimensions could be verified, obtaining some adequate values in their goodness of fit indices; in the following indices X^2/gl=4.920, indicating a good fit, the CFI value=0.835, indicating an inappropriate value (Schreider, Stage, Nora & Barlow, 2006). In the same way, the value of RMSEA=0.075, indicating a good fit. On the other hand, the TLI values=0.805 indicates an inappropriate value. Likewise, AIC=1,999,730 indicates an inappropriate value Hernández et al.[1] In model 2, making covariance in items (3 and 23) and (26 and 27), adequate values were obtained in their goodness of fit indices; in the following indices X^2/gl=4.711, indicating

Table 1. *Total Explained Variance of the Quality of Work Life Scale (n=700)*

Total	% Variance	% Accumulated	Total	% Variance	% Accumulated	Total	% Variance	% Accumulated
9.448	31.494	31.494	9.448	31.494	31.494	4.786	15.954	15.954
3.297	10.989	42.483	3.297	10.989	42.483	4.226	14.085	30.039
1.616	5.387	47.870	1.616	5.387	47.870	3.716	12.387	42.426
1.099	3.665	51.535	1.099	3.665	51.535	2.045	6.816	49.241
1.034	3.448	54.982	1.034	3.448	54.982	1.722	5.741	54.982

Table 2. *Distribution of the Items by Factors of the Quality of Work Life Scale*

Matriz de Componente Rotadoa					
	Componente				
	1	2	3	4	5
item21	0.821				
item17	0.760				
item20	0.759				
item22	0.742				
item18	0.739				
item15	0.622				
item16	0.522				
item14	0.480				
item19	0.460				
item2		0.665			
item1		0.659			
item7		0.657			
item6		0.633			
item8		0.581			
item5		0.555			
item4		0.547			
item10		0.546			
item30			0.735		
item25			0.709		
item29			0.678		
item24			0.664		
item28			0.547		
item9			0.475		
item27				0.598	
item3				0.526	
item26				0.517	
item23				0.497	
item13					0.693
item12					0.613

Extraction method: principal component analysis.
Rotation method:Varimax with Kaiser normalization.
a.The rotation has converged in 7 iterations.

Figure 1. *Confirmatory Factor Analysis of the Dimensions of Quality of Working Life*

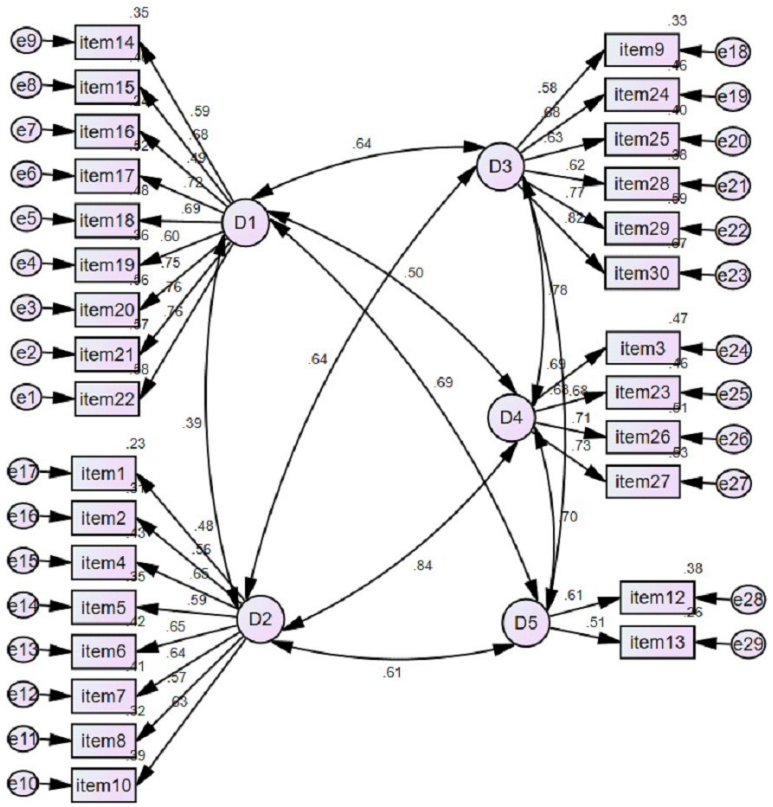
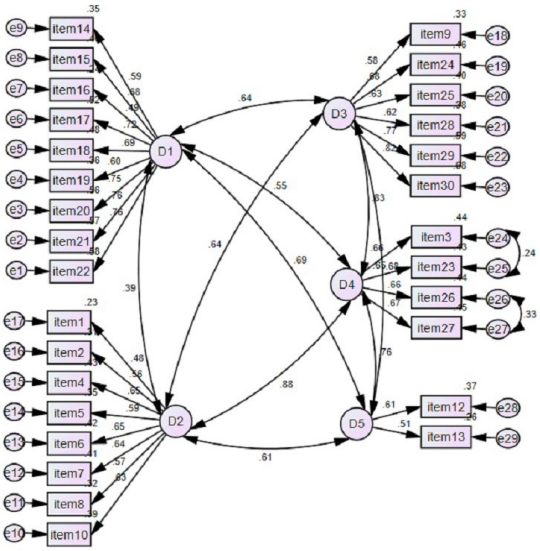


Figure 2. *Confirmatory Factor Analysis of the Dimensions of Quality of Working Life-ECVL. In Covariance (items 3 and 23) and (items 26 and 27)*



a good fit, the CFI value=0.90, indicating a good fit. In the same way, the value of RMSEA=0.073, indicating a suitable value. On the other hand, the TLI values=0.815 indicates an inappropriate value. Likewise, AIC=1,917,408 indicates an inappropriate value (Table 3) (Figures 1 and 2).[1]

Reliability Analysis

The internal consistency achieved in the Quality of Work Life Scale and its dimensions through Cronbach's Alpha method ranged between 0.458 and 0.876; since they present us with results with a high-level of reliability and reliability of 0.919 (Table 4).

Table 3. *Goodness-of-Fit Measures of the Confirmatory Factor Analysis of the Quality of Work Life Scale (n=700)*

Adjustment Indices		Model 1	Model 2	Optimal Indices
Absolute Fit				
X^2/gl	Chi square ratio/degrees of freedom	4.920	4.711	≤5.00 (Acceptable)
RMSEA	Adjusted goodness-of-fit index	0.075	0.073	≤0.08 (Acceptable)
Comparative Fit				
CFI	Comparative fit index	0.835	0.90	≥0.90 (Acceptable)
TLI	Tuker-Lewis index	0.805	0.815	≥0.90 (Not acceptable)
Parsimonious Adjustment				
AIC	Akaike information criteria	1.999.730	1.917.408	Close to 0 (Not acceptable)

Likewise, the Cronbach's alpha of the dimensions are as follows for the autonomy component a score of 0.876 was obtained, for the personal development component a 0.806 was obtained, for the equity component an 0.835 was obtained, for the security component Labor was obtained 0.791 and finally for fair salary a 0.458 was obtained. Which shows us that our scale is adequate and with acceptable reliability

Table 4. *Reliability by Cronbach's Alpha of the Dimensions of the Quality of Work Life Scale (n = 700)*

	α	N° Items
Autonomy	0.876	9
Personal development	0.806	8
Job security	0.835	6
Equity	0.791	4
Fair wage	0.458	2
Total	0.919	29

DISCUSSION

The purpose of this research was to construct a quality of work life scale for workers of a call center company in Downtown of Lima. The theoretical foundations are governed by the studies carried out of the basic needs of Maslow with quality of work life, which can be easily used in the work environment. When the basic levels are reached, the worker will want to satisfy new needs that change to satisfiers, sought-after objects, interests, and values.

When making the distribution of the items by factors, applied in the initial sample of (n=700), it was elaborated starting with 4 dimensions where each one of them consists of a number of items in the dimensions: autonomy (8 items), personal development (8 items), job security (7 items) and equity (7 items); in as much as it divides in an adequate way this theoretical approach based on the 4 dimensions. It should be noted that what was done through the exploratory factor analysis of the rotated component proposes a better structure leaving 5 dimensions, since it only rethinks some items and in the dimensions: autonomy (9 items), personal development (8 items), job security (9 items), equity (4 items) and fair salary (2 items).

Regarding the results found from the confirmatory factor analysis where the sample of (n=700) was used, the distribution of the 5 dimensions could be verified, obtaining in model 1 some adequate values in their goodness of fit indices; in the following indices X^2/gl=4.920, indicating a good fit, the CFI value=0.835, indicating an inappropriate value. In the same way, the value of RMSEA=0.075, indicating a good fit. On the other hand, the TLI values=0.805 indicates an inappropriate value. Likewise, AIC=1,999,730 indicates an inappropriate value.[1]

In model 2, making covariance in items (3 and 23) and (26 and 27), adequate values were obtained in their goodness of fit indices; in the following indices X^2/gl=4.711, indicating a good fit, the CFI value=0.90, indicating a good fit. In the same way, the value of RMSEA=0.073, indicating a suitable value. On the other hand, the TLI values=0.815 indicates an inappropriate value. Likewise, AIC=1,917,408 indicates an inappropriate value.[1]

The reliability analysis by dimensions was carried out where we used the initial sample of (n=700), it was evidenced that in the dimensions (autonomy, personal development, job security, equity and fair salary); that comprise the total variable of quality of working life, where the acceptable values in reliability are between 0.458 and 0.876; since they present us with results with a high-level of reliability and reliability of 0.919.

On the other hand, access to the established sample was with people with different academic degrees, it had some restrictions due to the time factor and there is little access to them in a set time. Meanwhile, it is recommended to continue with the study of the variable as it is the subject of various studies in our environment; Furthermore, in organizational practice its application is not valid with the Humanist approach that puts human labor relations as the main assumption and focus on the importance of understanding performance in the feelings, ideas and behaviors of collaborators in organizations.[16]

Finally, it could be inferred that Martínez's Quality of Work Life Scale (ECVL) has a total of 29 items, classified in 5 dimensions: autonomy, personal development, job security, equity and fair salary, which, in the Confirmatory factor analysis model 2 shows us a covariance that indicates the similarity between the items (3 and 23) and (26 and 27) of the same dimension (equity). Likewise, the ECVL demonstrated adequate levels of validity and reliability.

CONCLUSION

The content validity evidence was found through the 10-expert judgment method using Aiken's V. validity (p>80) and the Binomial test (p<0.05), which allowed maintaining the 30 items.

• The descriptive analysis of the items showed adequate indicators regarding: the corrected test item; communality; the standard deviation; Fisher's coefficient of skewness; Fisher's kurtosis coefficient; for the thirty items.
• Regarding the validity of the internal structure by means of the exploratory factor analysis, it was possible to establish the organization of the items in 5 factors, taking into account the Bartlett's sphericity test values (sig=0.000) and the adequacy index sample (KMO=0.930).
• Regarding the validity of the internal structure by means of the confirmatory factor analysis, model 1 and model 2, the relevance of the theoretical model was verified to explain the quality of working life composed of five dimensions according to Maslow's theory, showing adequate indices adjustment: X^2/gl=4.920 and 4.711, CFI=0.835 and 0.90, RMSEA=0.075 and 0.073, except TLI=0.805 and 0.815 which did not show an adequate value.

RECOMMENDATIONS

• It is recommended to use the instrument following the qualification criteria, because it has been shown that it has adequate levels of validity and reliability for a company in the call center field.
• It is recommended to apply other procedures, such as the joint relationship with other measures, such as convergent, divergent, predictive or other validity, which contribute to evidence the validity by criterion of the quality of work life scale.
• It is recommended to eliminate the equity dimension because it has a similarity between the items, according to model 2 of the confirmatory factor analysis.
• It is recommended to apply and measure in other samples in different professionals, on the quality of work life scale.

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