Perception of cultural values in employees and their importance in performance in the maquiladora industry

Percepción de valores culturales en trabajadores y su importancia en el desempeño en la industria maquiladora

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Abstract

The objective of this research is to understand the significance between organizational behavior dimensions from a perspective of cultural values and the perception of job performance in the worker. To achieve this goal, it was used a quantitative analysis for structural equations in a case study with a sample of 194 people working on firms from manufacturing medical products. For this study we defined and stratified the cultural values on three sections: family, religion and spirituality. The main findings indicate that spirituality is significant in the perception of the worker's own performance.

JEL Classification: D23, J24, L60, M54.
Keywords: Cultural values, Performance, Structural equational modeling.

Resumen

El objetivo de esta investigación es conocer la significancia que existe entre dimensiones pertenecientes al comportamiento organizacional desde una perspectiva de valores culturales y la percepción de éstos con respecto al desempeño laboral del trabajador. Para estos efectos se utilizó un análisis de ecuaciones estructurales tipo cuantitativo en un estudio de caso con una muestra de 194 personas que laboran en dos empresas del sector de manufactura de productos médicos. Para este estudio se definieron y estratificaron los valores culturales en tres partes: se consideró la familia, religión y espiritualidad. Los hallazgos principales indican que la espiritualidad es significativa en la percepción del propio desempeño del trabajador.

Códigos JEL: D23, J24, L60, M54.
Palabras clave: Valores culturales, Desempeño, Modelado de ecuaciones estructurales.

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Introduction

The development of the maquiladora industry of the medical sector in Mexico has caused companies to seek alternative methods to obtain and perform productivity and quality levels at a pace that makes them competitive in the market. We present the need to develop work systems that take into consideration human capital as a primary and fundamental axis to integrate organizational culture with cultural aspects such as beliefs, customs, attitudes and behaviors (Espinosa & Pérez, 1994; Soto Nogueira, 2010; Rodríguez & Ramírez, 2004).

In this document, the issues regarding performance in the manufacturing industry of medical products are presented from the point of view of the analysis of values important for the workers. Values of this type are identified as transcendental and it is assumed that they have an impact and influence on the perception of the workers in high-end manufacturing environments. Three cultural variables are identified that have a direct relation with the performance of the workers, these being: family, religion, and spirituality (Kras, 2001; Cequea, Rodríguez & Núñez, 2011; Robbins & Judge, 2013).

Table 1 shows studies carried out regarding relevant factors for the workers and their relation with performance in the maquiladora industry in Mexico.

Table 1
Empirical studies on work performance carried out in Mexico.

Author (Year)	Description of the study
Valdés, 2001	Study to determine the relation between leadership, work satisfaction, and performance in the maquiladora industry in Mexico.
Carrillo, Cedillo & Olea, 2003	Study to promote improvement, through safety and hygiene programs, in the quality of employment in the maquiladora industry in Mexico.
Mendoza, 2004	Study on work productivity in the maquiladora industry in Mexico.
Muñúzuri, 2005	Study on the satisfaction and productivity of the workers in the maquiladora industry in Mexico.
Duarte, 2006	Study on the motivation, attitudes, and productivity of workers in the maquiladora industry in Mexico.
Contreras, Carrillo, García & Olea, 2006	Study on the performance of maquiladoras with regard to occupational safety and health at work.
Tsushima, 2010	Study on the productivity of the televisions maquiladora industry in Mexico.
Carrillo, 2013	Study on the organizational structure, innovation, and employment practices of multinational companies located in Mexico.

Source: Own elaboration.

Although the aforementioned studies address the issue of work performance, none of them present the concepts taken into consideration in this work, particularly the cultural values of family, religion, and spirituality.

This research serves as a preamble to find in it an opportunity to improve the competitiveness of the maquiladora industry through the understanding and development of a model focused on cultural values.

The study was carried out on employees of two maquiladora companies of the medical sector in the city of Tijuana, B.C. Based on this intervention, a structural equations model

is presented to relate the representative variables of the analyzed values with the dependent variable of work performance in companies of the sector in question.

Review of the literature

Bateman & Snell (2009) define organization as: "*The union and coordination of human, financial, physical, information, and other necessary resources for the achievement of goals*". The intent of this group is to achieve an integration between the tasks, resources and responsibilities required to create the necessary conditions to achieve the established goals. Administration is applied to small and large organizations, for profit and nonprofit, of manufacture and of service; its purpose is to efficiently comply with the objectives of the organizations through productivity, effectiveness, and efficiency.

The concept of productivity is defined as the ratio between the products obtained and the inputs used throughout a period of time, requiring an adequate quality, effectiveness and efficiency in individual and organizational performance. Effectiveness is the achievement of goals, whereas efficiency is accomplishing things with a minimum amount of resources (Robbins & Coulter, 2010; Koontz & Weihrich, 2013). Organizational behavior studies the performance and attitudes of the employees in the companies. Likewise, the impact of the work of the employees on the effectiveness and productivity of the company is analyzed and comprises three units of analysis: the individual, the group, and the organization (Dailey, 2012). Additionally, it is a normative and value-based science. It is humanist and optimist, where the needs and motives of the people are the primary concern; it is based on the idea that the person has a potential to be independent, creative, productive, and capable of contributing to the objectives of the organization (Maristany, 2007).

Organizational behavior develops in the field of the conduct and actions of the person at their workplace (DeCenzo, Robbins & Moon, 2009). It researches how individuals, groups, and structures influence organizations to improve performance, and proposes an analysis from three perspectives to understand it (Franklin & Krieger, 2011):

1. From the dynamic and structure of the personality of the individual.
2. From the characteristics of the organization where they are working.
3. From the prevailing social culture in society.

This study addresses the analysis from a perspective of a socially shared culture (sectoral level), which includes the variables of family, religion, and spirituality. The sectoral level has the objective of studying societies, human beings, and their activities such as cultures, values, attitudes and behaviors (Robbins & Judge, 2013). Figure 1 shows how the organizational behavior is stratified:

Cultural Values

Omar & Florencia (2010) mention that the nucleus of culture is comprised by values, which are desirable objectives that reinforce and guide behaviors; they serve as principles that guide the life of people. Thus, the study of culture has mainly been done through a set of values derived from theoretical analyses and empirical studies.
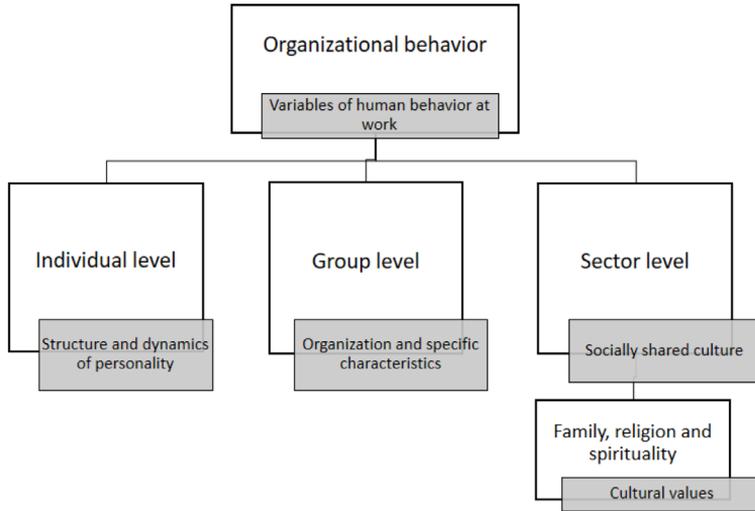
Figure 1. Structure of human behavior and work.
Source: Own elaboration with an adaptation by Franklin & Krieger (2011).

The term "Cultural Values" is used to refer to the concept of the elements that come from the culture of the country and which are maintained for a long period of time; these are integrated by society and companies, and provide a sense of cohesion and belonging (Rodríguez & Ramírez, 2004). These are elements that must be protected, being important since they are the basis for the stability of any company (Kras, 2001). The elements of family, religion, and spirituality are covered within this dimension.

Family

Family is a group of people related to each other by blood or legal relationship, who coexist and share a vital project of common existence that is supposed to be lasting, where there are feelings of belonging, of personal commitment between its members, and in which relationships of intimacy, reciprocity and dependence are established. From this definition, the family-work interference is established, which is a conflict defined as: "The conflict that exists because the demands of work and those of family are mutually incompatible, since focusing on a (family) role makes participation in another (work) more difficult (Greenhaus & Beutell, 1985).

Recently, authors have proposed that the family-work relation creates favorable impacts in a reciprocal manner. Positive work practices enrich family life. The presence of stress in the working environment creates conflict between these two factors with adverse effects on the family. There is evidence that the family-work conflict has negative impacts on work and family satisfaction, and psychological attrition (Aguirre Zubiaurre & Martínez Díaz, 2006; Riquelme Orellana, Rojas Habibe & Jiménez Figueroa, 2012).

Sudden changes in the working environments due to globalization, and the increase of neoliberal and organizational policies, cause organizations to reduce costs in order to be competitive; in these working environments workers tend to have less autonomy, and in order to gain greater responsibilities, they focus on effectiveness and efficiency with a large quantity

of standards and procedures, budget cuts and a lack of personnel (Kalliath & Kalliath, 2013), dedicating more time to work, resulting in different conflicts related to the family-work relation (Ozeki & Ernst Kossek, 1999; Weisman & Teitelbaum, 1987).

Such work situations lead many workers and their families to operate under the fear of losing their jobs, accepting excessive workloads and long working hours at the expense of family time (Aguirre Zubiaurre & Martínez Díaz, 2006). Conflicts between family-work are associated with events in the organization, such as: with the intention of schedule rotation; leave of absence for personal matters related to family; commitment to the organization and their careers; as well as worker exhaustion.

Companies need to generate creative procedures to redesign a workplace that allows employees to better fulfil their various demands concerning their families. High levels of work productivity, a good attitude, commitment, and a reduction in turnover is related to more flexible schedules and a feeling that the organization worries about the families of the workers (Ozeki & Ernst Kossek, 1999). Finally, there is evidence in the literature that refers to family as a significant variable in the performance of the workers (Greenhaus, Allen & Spector, 2006; Willis, O'Connor & Smith, 2008; Greenhaus & Beutell, 1985; Greenhaus, Bedeian & Mossholder, 1987; Kossek & Ozeki, 1998).

The family value is presented in three perspectives: from the perspective of time, stress and behavior.

Table 2
Three perspectives of family-work conflict.

Forms of family-work conflict		Types of family-work conflict	
		Work interferes with family	Family interferes with work
	Time	Based on time Work interferes with family	Based on time Family interferes with work
	Stress	Based on stress Work interferes with family	Based on stress Family interferes with work
	Behavior	Based on behavior Work interferes with family	Based on behavior Family interferes with work

Source: Carlson, Kacmar & Williams (2000)

Religion

Nowadays, religion is a topic of interest in various fields; in politics, international conflicts, regarding equality laws and work situations (Edelberg, 2006). "*Religion, as presented in various legal texts, can be defined as belief concerning the supernatural, sacred or divine and to the moral codes, practices, rituals, values and institutions related to the same, including all the aspects of religious observance and practice*" (Fernández Fernández *et al.*, 2007).

Asha (2012) mentions that Hofstede (1992) and Ronen & Shenkar (1985) indicated that religion is one of the key factors that underlie national culture. It must always be present at work due to the fact that it has an impact on the values of the people, their attitudes and behaviors in their activities.

Religion at work has become more prevalent following the 1990s due to globalization, technology, the restructuration of organizations, and the loss of employment (Edelberg, 2006). Supporting religion in the workplace and respecting the religious rights of the workers will help the company ensure that employees are happy, increase their moral, become involved, increase their satisfaction, be more collaborative, and thus obtain greater productivity (Bergen & Mawer, 2008; Charles, 2006). Furthermore, there is confirmed evidence in the literature which states that religion is significant in the performance of the workers (Van Buren III, 1995; Malone, Hartman & Payne, 1998; Charles, 2006; Miller, 2006; Bergen & Mawer, 2008; SHRM, 2008; Walker, 2013).

The religious factor at work is approached from three perspectives: the first, from a conception of relationship; the second, from a conception of meaning; and the third, from a conception of community (Lynn, Naughton & VanderVeen, 2008; Hill & Hood Jr., 1999).

Table 3
Three perspectives for the scale of religion at work.

Dimension	Perspective of relation with religiousness	Perspective of meaning with religiousness	Perspective of community and generosity with religiousness
Characteristics of each perspective	-Discern the presence of God at work. -God's guide to work. -Unification of work and faith. -Trust in God to receive strength and peace.	-Considers work as a calling, a mission. -Attributes talent at work to a gift from God. -Learns and develops in abilities and knowledge.	-Worrying about co-workers. -Moral practice and encourages others. -Contributes to the good of everyone at work.

Source: Lynn, Naughton, & VanderVeen (2008).

Spirituality

Spirituality at work and its relation with organizational performance is a topic that has been gaining importance in recent years. Karakas (2010) defines it as: "The road to finding a deep, sustainable, authentic, significant, and holistic understanding of the existential being and its relation and interconnection with what is sacred and transcendent; spirituality is not considered an institutional religion as it is characterized by an individual, inclusive, non-confessional human feeling, and does not have an adherence to beliefs, rituals, or practices of a specific religious organization or tradition".

Spirituality is observed from two perspectives. From the individual level, it can be understood as an affective and cognitive experience where the employee believes and feels a spiritual connection to their work and field of work. From an organizational level, it is understood as a reflection of the spiritual values that are part of the organizational culture and, therefore, used to determine behavior, decision-making, and the allocation of resources (Petchsawanga & Duchon, 2012).

Spirituality enhances employee well-being increasing their moral, commitment and productivity, in addition to reducing stress, exhaustion and work addiction, achieving a feeling of fulfillment, authenticity at work, increasing moral, honesty and belonging. Furthermore, it gives employees a deeper sense of meaning and purpose from their work. Companies that promote spirituality allow employees to develop ethical values and beliefs at work and encourage them to be more creative and flexible. Finally, spirituality gives a sense of community and interrelation, which increases commitment to the group, loyalty and a sense of belonging to the

organization (Rego & Pina e Cunha, 2008; Karakas, 2010; Geigle, 2012; MalikehBeheshtifar & Zare, 2013; Ahmadi, Nami & Barvarz, 2014).

There is evidence of a positive relation between spirituality and the results obtained at work, not inherently in relation with attitudes, commitment and satisfaction, but rather with the final results of performance (Petchsawanga & Duchon, 2012), in the mental strength that helps to better deal with work problems (Sprung, Sliter & Jex, 2012), and in better leadership management (Reave, 2005; Fry & Matherly, 2006). Therefore, spirituality ought to be considered in the work environment (Pérez Santiago, 2007). Nevertheless, there are studies that present evidence in which spirituality is significant in worker performance (Milliman, Czaplewski & Ferguson, 2003; Giacalone & Jurkiewicz, 2003; Ashmos Plowman & Duchon, 2000; Duchon & Ashmos Plowman, 2005; Garcia-Zamor, 2003; Fry L. W., 2005; Elm, 2003).

The spirituality factor at work and its relation with performance is approached from three perspectives that are based on the literature: the first is the well-being at work; the second is the meaning and purpose of the work; and the third is the sense of interconnection and community. Karakas (2010) presents it in the following table based on research by academic experts in the field (Ashmos Plowman & Duchon, 2000; Garcia-Zamor, 2003; Duchon & Ashmos Plowman, 2005; Dunn, Jurkiewicz & Giacalone, 2005; Giacalone & Jurkiewicz, 2003; Petchsawanga & Duchon, 2012).

Table 4
Three perspectives for the benefit of spirituality in employees and organizations.

	Human resources perspective	Philosophical perspective	Interpersonal perspective
Focused on employee development	Well-being at work.	Purpose and meaning of the work.	Sense of interconnection and community at work.
The problem: unproductive workplaces	Emotionally unproductive workplaces.	Spiritually unproductive workplaces.	Socially unproductive workplaces.
Main problems / Opportunities / Needs	Stress; exhaustion; work addiction; absenteeism; low morale and commitment; lethargy.	Excessive materialism; loss of meaning and involvement; low performance, joy and creativity; atrophy.	Egocentrism, greed and egoism; low sense of belonging and cohesion; lack of social support; entropy.
Positive results after the incorporation of spirituality	Increased morale and commitment; increased well-being of the workers; increase in the productivity of the workers.	Increased sense of purpose and meaning in the work; increased work fulfilment and satisfaction; increased trust and creativity; increased reflection.	Increased sense of connection and community; increased cohesion, loyalty and belonging; quality relationships.
Ideal employee benefits	Employees with a passion for work, strengthened and committed.	Self-reflective and creative employees.	Well-coordinated, kind and understanding employees.
Workplaces with a sense of spirituality in the 21st century are:	Committed and working with passion.	Live with the purpose and meaning of working.	There is a connection formed by being kind.

Source: Karakas (2010).

Research hypotheses and objectives

The research problem addresses the cultural values with a human approach, which are an essential element for organizational behavior and work performance (Robbins & DeCenzo, 2008). The study poses the following question:

To what extent are cultural values important in the perception of worker performance in the production lines of the maquiladora industrial sector of medical products in Tijuana, B.C.?

In the framework of the question above, the following research hypotheses are developed.

General Hypothesis

H1: The cultural values are significant in the perception of performance.

Specific Hypotheses

H2: The family value is significant in the perception of worker performance.

H3: The religion value is significant in the perception of worker performance.

H4: The spirituality value is significant in the perception of worker performance.

Due to the importance of the human factor in the exercise of the productive life of the maquiladora industry and its relevance in work productivity, we identified the need to carry out research that studies the cultural values. The recognition of the aforementioned values is the basis for the transition to a modern, successful and full quality administration. These must be adapted to the characteristics specific to their environment depending on the traditions and habits developed in a particular country and, therefore, the importance of the valuable elements such as family, religion, and spirituality.

Research methodologies

The following steps are set out to determine the research methodology used in this study:

1. Carry out a research of the theoretical framework of the concepts that comprise the study variables of this research; through the analysis of the relevant academic literature on the topic, consulting current databases to obtain doctoral theses, academic articles and other means of information that provide access to the bibliography relevant to the subject under investigation.
2. Formulation of research objectives according to the previously proposed hypotheses.
   a. Formulation of the work hypotheses.
   b. Develop a theoretical model that establishes the relation between the variables.
3. Research design.
   a. Definition of the research context, population and sample.
   b. Review of the literature for the measurement instruments of each of the variables and their determination to carry out this research.
   c. 5-point Likert survey design as a data collection instrument with adapted consulted literature.
   d. Instrument validation
      i. Evaluation of the results obtained using Cronbach's Alpha value (Nunnally, 1978) for each of the variables.

e. Field work and data analysis

    i. Instrument application and data collection; data capture and analysis using statistical packets SPSS 23 and AMOS 23; descriptive analysis; analysis of the model using structural equations to determine the causal correlation between the variables under study and work performance.

4. Results, discussion and conclusions.

    a. Verification of the established hypotheses, interpretation of the obtained results, determination of the conclusions, and contributions of the research.

Characteristics of quantitative research

The quantitative research phase involves a set of steps carried out for the statistical analysis of the results obtained from the application of the methodology presented in this research approach. Two American maquiladora companies of medical products in the city of Tijuana, Baja California, are presented as a spatial framework.

The companies, Nypro a Jabil Company and DJO Global Inc., manage corporate polices directed towards respecting the gender, religion, race, age, hierarchical level, sexual preference or any other characteristic, personal conviction or different abilities of their workers. In this manner, these are companies with a broad openness towards human-centered initiatives that seek to improve the performance of their workers.

The objective of this research was to study the extent to which human-centered cultural values influence the performance of production line workers of the maquiladora of medical products in the city of Tijuana within a given timeframe, carried out during the first semester of 2016. Additionally, it sought to determine which values prevailed in the performance of workers, evaluating their level of correlation and subsequently the causal relation between the variables, using an analysis of structural equations.

Sample selection

Two companies of American origin were used as a case study to carry out the research—Nypro a Jabil Company and DJO Global Inc. These companies produce products for the market of medical diagnosis devices, and the pharmaceutical (Nypro a Jabil Company) and the orthopedic (DJO Global Inc.) markets; both companies are located in the city of Tijuana. Approximately 1600 people work in the Nypro company in Tijuana, whereas approximately 2500 people work in the DJO company in Tijuana. The research design responds to a stratified random sampling, using the size of the company as a criterion. The total number of surveys to be applied was calculated using the following procedure (Hernandez Sampieri, Fernandez Collado & Baptista Lucio, 2014; Fernández Nogales, 1998).

Data:

N = Universe size: 4100	Z (s)= 1.96
E = Maximum acceptance error: 10%	Nh1 = Nypro = 1600
p = Estimated sample percentage: 50%	Nh2 = DJO = 2500
q = 1-P	n = **94** fh = n/N = .02289
K = Desired level of confidence: 95	nh (no. of stratified sample) = fh * Nh
	Nypro Company (nh1)= 37	DJO Company (nh2)= 57

Determination of the research subjects

The research subjects are the employees of the production process lines of the selected companies. Given that the size of the production lines varies due to the heterogeneous character of the manufacturing processes of the companies, a selection of one or multiple lines is done to cover the sample quantity required per stratum.

Measurement instrument

The theoretical framework must be operational to comply with the research objectives. The hypotheses, research questions, together with the study variables are the basis that serve as indicators to construct the measurement instrument. Below, the instruments of each studied variable are described.

1. The scale for the family dimension is established in a 7-item survey that addresses the two-dimensional Family-Work conflict, which is established in three dimensions: Established time in 3 items, established stress in 2 items, and established organizational behavior in 2 items. This is an adaptation of the scale by Carlson, Kacmar & Williams (2000) used to measure the family-work conflict.

Table 5
Measurement instrument – Family value

Dimensions of the family-work conflict	Item No.	Statements
Conflict between time at work and family	F1	The time I spend at work prevents me from participating in my household chores and activities.
	F2	The time I spend with my family regularly causes me not to invest time on work activities that could help me in my career development.
	F3	I cannot do overtime or help with the production plans because I have to dedicate that time to my family responsibilities.
Conflict based on stress at work and family	F4	When I get home from work, I am usually too tired to do activities with my family.
	F5	Due to problems at home, I am usually worried or anxious at work.
Conflict based on organizational behavior with the family and work	F6	I feel that at work there is little concern for me and my family, which makes me feel unappreciated and discouraged at work.
	F7	If I am not allowed to take time off work to take care of matters of emergency related to my family, I feel unappreciated and discouraged.

Source: Own elaboration based on Carlson, Kacmar & Williams (2000)

The scale for the religious dimension is established in a 9-item survey to measure the religious index, which is established in three dimensions: relation, established in 3 items; meaning, established in 3 items; and community/generosity, established in 3 items. This is an adaptation of the religious index scale by "Duke University" Koening & Büssing (2010) and in the Faith at work Scale (FWS) by Lynn, Naughton & VanderVeen (2008).

Table 6
Measurement instrument – Religious value

Dimensions of religiousness	Item No.	Statements
Relation and religiousness	R1	I consider myself a religious person.
	R2	I try to bring my religion and beliefs into every aspect of my life.
	R3	I feel that God strengthens me to do good things at work.
Meaning and religiousness	R4	I believe that God wants me to develop my abilities and talent at work.
	R5	My faith in God helps me deal with difficult situations at work.
	R6	I seek excellence at work due to my faith in God.
	R7	Because of my faith in God, I appreciate the people who work with me.
Community/ generosity and religiousness	R8	Because of my faith in God, whether I am alone or with my coworkers, I behave correctly when doing my job.
	R9	Because of my faith in God, I help my coworkers with work issues.

Source: Own elaboration based on Koenig & Büssing (2010) and Lynn, Naughton & VanderVeen (2008).

The scale for the spirituality dimension is established in a 6-item survey to measure spirituality at work, which is established in 3 dimensions: Spiritual conscience (Purpose of the work), established in 2 items; spiritual feeling (Well-being at work), established in 2 items; spiritual fellowship (Interconnection at work), established in 2 items. This is an adaptation of the Spirit at Work Scale (SAWS) established by Kinjerski & Skrypnek (2006).

Table 7
Measurement instrument – Spirituality value

Dimensions of spirituality	Item No.	Statements
Relation of spiritual awareness (purpose) with work	E1	I know the meaning and purpose of work
	E2	My job helps me fulfill the missions I have in life
Relation of spiritual feeling (Well-being) with work	E3	I feel thankful for having a job like mine
	E4	I frequently enjoy my job to the utmost
Relation of spiritual fellowship (Interconnection) with work	E5	I accept new coworkers to become a part of my working circle and we work as a fellowship
	E6	I feel a real trust and personal connection with my coworkers

Source: Own elaboration based on Kinjerski & Skrypnek (2006)

Study model

Based on the approach of the theoretical elements and measurement instruments presented, the model for cultural values and their relation with the performance of the workers is established, which is presented in three diagrams for each of the variables: family, religion, and spirituality, with 7, 9 and 6 items of study, respectively. Performance is established as a dependent variable with 12 items of study. See Figure 2.
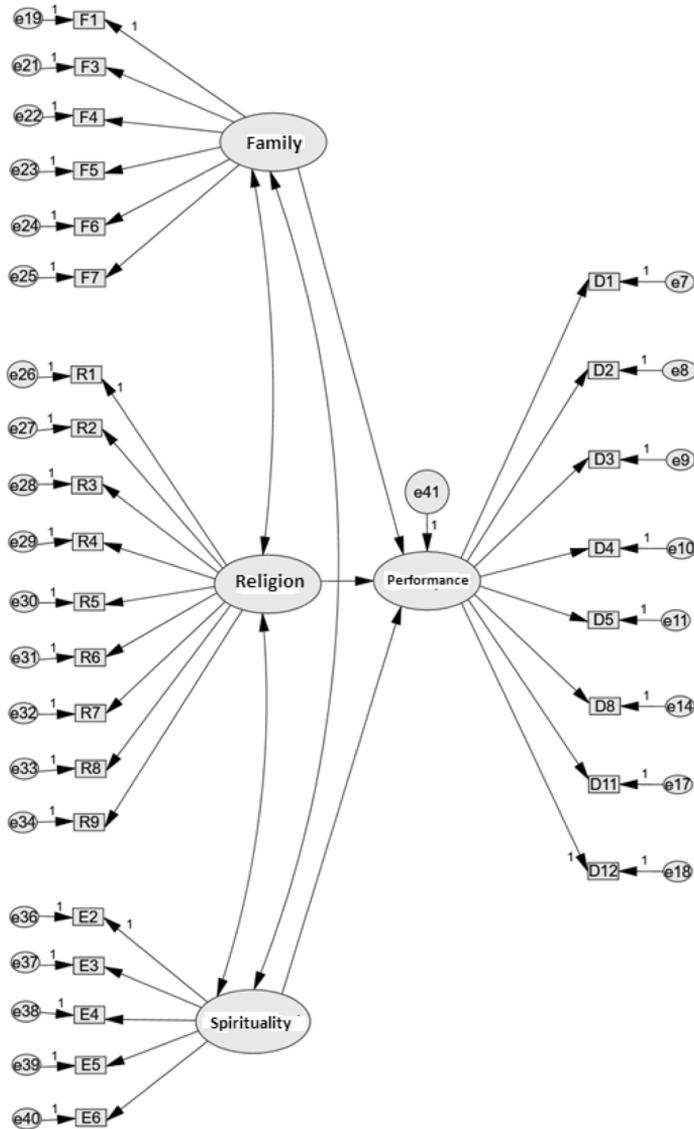
Figure 2. Human performance model using SEM
Source: Own elaboration.

Description of the measurement scale

A scale is used following the proposal by Likert (1932) to describe the perceptions of the interviewees regarding each of the items in the surveys. The values presented in the responses of the instrument and the value that they represent in the index broadness column are the following:

1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree

The reliability or trustworthiness is the extent to which the instrument provides a repetitive result when it is applied to people multiple times (Hernandez Sampieri, Fernandez Collado & Baptista Lucio, 2014). The Reliability of the measurement instrument is assessed through piloting and the analysis through the application of Cronbach's Alpha to each dimension. It can be observed in the following table that when carrying out the reliability analysis of the results of the application of the survey, acceptable indices were obtained for Cronbach's Alpha, indicating that the reliability of the instrument is significant.

Table 8
Cronbach's Alpha analysis.

No.	Variable	Dimension	No. of Items	Cronbach's Alpha
1	Performance *	Performance*	12	0.641
2		Family*	7	0.764
3	Cultural Values*	Religion*	9	0.939
4		Spirituality*	6	0.789

Source: Own Elaboration.　　　　　　　　*Conceptual and operational definitions can be found in Annex 2

Development of structural equations

The structural equations modeling (SEM) is a statistical methodology that takes a confirmatory approach (Hypothesis test) for the analysis of a structural theory related to some phenomenon. This structural theory is based on causal processes generated through the observations of multiple variables. These models comprise two important aspects: the causal processes under study are represented by a series of structural equations that can be modeled graphically to obtain a clear conceptualization of the theory under study; furthermore, the models proposed under hypothesis can be statistically proven to determine if they are consistent with the data provided (Byrne, 2010). For the development of structural equations and the analysis of the models of this research, the software AMOS Graphics version 23.0 and EQS 6.1 were used.

Estimations for the analysis of structural equations.

The model was evaluated for its approval using statistical parameters established in the literature (Byrne, 2010; Boomsma, 2000; McDonald & Ringo Ho, 2002; Myint, 2013), and shown below:

1. Data normality, standardized residuals of covariances, and goodness of fit are analyzed.
2. The model parameter estimation, the approximated standard error, the critical ratio, and the standard parameter estimates are presented. The critical ratio (CR) is analyzed, which must be greater than 1.7 (at a level of significance of $\alpha \leq 0.089$).
3. The explained variance of the endogenous variables—which are the latent dependent variables (in the graph these are the variables to which the arrows point)—must be greater than 0.1, which would indicate a greater significance and information.
4. For the approval and evaluation of the parameter estimates, the following guidelines are to be considered: Correlations (standardized coefficients) no greater than 1; no negative variances; and acceptable goodness of fit statistics.
5. The correlations between the latent variables will be analyzed (represented using two-way

arrows). The regressions of the latent exogenous variables will be analyzed (represented using directional arrows).

6. For the evaluation of the models, the analysis of the goodness of fit statistics is carried out in addition to the estimates. The fit index used and considered in the study to determine if the models adjust to the data is the Bootstrap Method. The indices calculated only as reference are the following: CMIN/gl, RMSEA, GFI, AGFI, ECVI, PRATIO.

The "Bootstrap" method is used to evaluate a sampling distribution for parameter estimation and helps find approximate standard errors (Arbukle, 2008). The use of this method helps determine the fit of non-standard models.

Results

The sample is comprised by a total of 194 workers from the production lines of two American companies in Tijuana, Baja California, Mexico, of the maquiladora industry of medical products. Table 9 shows the characteristics of the respondents in greater detail.

Table 9
Descriptive characteristics of the data.

Total Sample	194	Percentage (%)		Description		Percentage (%)	
Description	Count	Cell	Accumulated		Count	Cell	Accumulated
Gender:				**Seniority:**			
Masculine	106	54.6	54.6	0-1 years	117	60.3	60.3
Feminine	85	43.8	98.5	2-4 years	34	17.5	77.8
Not counted	3	1.5	100.0	5-8 years	22	11.3	89.2
Age:				More than 8 years	15	7.7	96.9
Under 18	2	1.0	1.0	Not counted	6	3.1	100.0
18 to 25 years of age	68	35.1	36.1	**Level of Studies:**			
26 to 30 years of age	44	22.7	58.8	Elementary	23	11.9	11.9
31 to 35 years of age	33	17.0	75.8	Middle school	62	32.0	43.8
36 to 45 years of age	28	14.4	90.2	High school	53	27.3	71.1
Older than 46 years	14	7.2	97.4	Bachelor degree	53	27.3	98.5
Not counted	5	2.6	100.0	Not counted	3	1.5	100.0
Marital Status:							
Single	73	37.6	37.6				
Married	66	34.0	71.6				
Free Union	40	20.6	92.3				
Divorced	7	3.6	95.9				
Widower	1	0.5	96.4				
Other	4	2.1	98.5				
Not counted	3	1.5	100.0				

Source: Own elaboration.

The descriptive characteristics of the results of the surveys are described below:

1. 106 Men (54%), 85 Women (44%).
2. Regarding the age of the workers, there are 2 people who are under 18 years of age (1%), 68 people are between the ages of 18 and 25 (35.1%), 44 people are between the ages of 26 and 30 (22.7%), 33 people are between the ages of 31 and 35 (17.0%), 28 people are between the ages of 36 and 45 (14.4%), and 14 people are over 46 years of age (7.2%).
3. Regarding the marital status of the workers, 73 people are single (37.6%), 66 are married (34.0%), 40 are in free union (20.6%), 7 are divorcees (14.4%), 1 is a widower (0.5%), and 4 mentioned other (2.1%).
4. Regarding the seniority of the workers at the company, 117 of them have worked there for 0-1 years (60.3%), 34 between 2 and 4 years (17.5%), 22 between 5 and 8 years (11.3%), and 15 for more than 8 years (7.7%).
5. Regarding the level of education of the workers, 23 of them went to elementary school (11.9%), 62 to middle school (32.0%), 53 to high school (27.3%), and 53 have a Bachelor degree (27.3%).

Analysis of estimations and statistics for the adjustment and approval of models in structural equations.

Based on Byrne (2010), Arbuckle (2008) and Myint (2013), the normality and standardized residuals of covariance are evaluated for the model as a first step. The value of 30.27 (see Figure 5) for the "Multivariate" estimation in the assessment of normality suggests a non-normality for the cultural values model. The variables E1, D9 and D10 are identified with values greater than 10, which indicates that they are the most significant and affect this estimation.

The standardized residuals suggest the differences between the covariances; the higher the value of the residuals the greater the discrepancy, thus affecting this estimation. The obtained values show the variables F2, D6 and D7 as the standardized residuals with the highest value (>15), and as such must be removed from the model.

The model was analyzed using the AMOS program through the estimation of generalized least squares (GLS), using the convergence criterion: Criterion 1= .01, Criterion 2= .001; limit of iterations= 80. Similarly, the covariances of entry and analysis were unbiased and the Bootstrap used a Bollen-Stine sample of 1000 with all the permutations, based on Diaconis & Effron (1983) and Bollen & Stine (1993).

Based on Arbuckle (2008), Ullman & Bentler (2003), Byrne (2010), Boomsma (2000), McDonald & Ringo Ho (2002), and Myint (2013) the calculation for the Bootstrap method was carried out, which is used to prove the hypothesis test that the cultural values model is correct, providing an acceptable result (greater than .05) of .055. Table 10 shows a summary of the goodness of fit statistics.

Standardized residuals of covariances			
	F2	D7	D6
F2	17.567		
D7	11.605	17.66	
D6	13.391	27.106	24.349
D3	20.118	5.561	9.882

Normality evaluation				
Variable	min	max	kurtosis	c.r.
E1	1	5	3.899	11.085
D10	1	5	6.048	17.195
D9	1	5	6.322	17.975
Multivariate			215.065	30.272

Figure 3. Analysis of normality and standardized residuals
Source: Own elaboration.

Table 10.
Goodness of fit statistics and reference criteria.

Name	Statistic	Abbreviation	Criterion	Cultural Values	
					Result
Bootstrap	Bootstrap Method (n=194)	P-value	>0.05		0.055
	Minimum fit function Chi-square / Degrees of freedom (gl)	CMIN / gl	< 2		533/344=1.5
Absolute Fit	Mean square error approximation	RMSEA	< 0.08	0.05	
	Goodness of fit index	GFI	~ 0.90	0.80	
	Adjusted goodness of fit index	AGFI	~ 0.90	0.77	
Comparative Fit	Expected cross validation index	ECVI	Def. < Sat. and Ind. model	Def: 3.39 Sat.: 4.18 Ind. 4.00	
Parsimonious Fit	Parsimony	PRATIO	> 0.5 *	0.91	
Sample Size	Critical N (CN)	HOELTER .05	Proposed by AMOS	141	

Source: Own elaboration based on Arbuckle (2008), Byrne (2010) and Myint (2013).

The estimations for the cultural values model are shown in Table 11. The C.R. estimation is generally significant (>1.7) (Arbuckle, 2008; Byrne, 2010) for most of the variables, except for Performance-Family with a value of -.002, which contributes with very little significance to the model. The Performance-Religion, D8, D4, and D3 estimations obtained values lower than 1.7. The P statistic values lower than 0.005 for the spirituality elements suggest a greater significance for this variable.

Table 11
Regression estimations – Cultural values

Generalized Least Squares							
			Regression Estimation	S.E.	C.R.	P	Label
Performance	<---	Religion	0.034	0.033	1.035	0.30	par_9
Performance	<---	Family	0.000	0.052	-0.001	1.000	par_10
Performance	<---	Spirituality	0.386	0.132	2.924	0.003	par_11
R1	<---	Religion	1				
R4	<---	Religion	1.741	0.265	6.571	***	par_1
R5	<---	Religion	1.967	0.306	6.418	***	par_2
R6	<---	Religion	1.995	0.319	6.257	***	par_3
D1	<---	Performance	2.434	0.653	3.726	***	par_4
D8	<---	Performance	0.507	0.309	1.642	0.101	par_5
D12	<---	Performance	1				
D11	<---	Performance	0.877	0.413	2.126	0.034	par_6
R2	<---	Religion	1.264	0.181	6.997	***	par_7
R3	<---	Religion	1.579	0.246	6.407	***	par_8
F1	<---	Family	1				
F3	<---	Family	0.811	0.299	2.717	0.007	par_15
F4	<---	Family	1.835	0.532	3.449	***	par_16
F5	<---	Family	0.425	0.229	1.851	0.064	par_17
F7	<---	Family	0.945	0.304	3.104	0.002	par_18
F6	<---	Family	0.778	0.268	2.908	0.004	par_19
E2	<---	Spirituality	1				
E3	<---	Spirituality	1.478	0.270	5.468	***	par_20
E4	<---	Spirituality	1.849	0.344	5.374	***	par_21
E5	<---	Spirituality	0.892	0.197	4.525	***	par_22
E6	<---	Spirituality	1.144	0.268	4.265	***	par_23
R9	<---	Religion	1.822	0.291	6.256	***	par_24
R8	<---	Religion	1.93	0.318	6.064	***	par_25
R7	<---	Religion	2.023	0.329	6.139	***	par_26
D5	<---	Performance	0.646	0.322	2.01	0.044	par_27
D4	<---	Performance	0.586	0.365	1.608	0.108	par_28
D3	<---	Performance	0.399	0.360	1.108	0.268	par_29
D2	<---	Performance	3.179	0.896	3.547	***	par_30

Source: Own elaboration. Based on the Z statistic, C.R. estimation: > 1.7 is "significant", *** $p < .005$, based on Arbuckle (2008) and Byrne (2010).

The estimation of regressions and correlations is shown in Table 12. Spirituality shows a regression estimation of .66; therefore, this value is significant for performance. Conversely, in the case of family and religion a rather low regression estimation is shown with 0.000 and 0.09, respectively, which suggest that these values are not transcendental for performance. The Pearson estimation results indicate a certain level of correlation, which shows that if there is variance between the variables this does not imply causality, only corroborating that the variables covary with each other.

Table 12
Estimation of covariance and correlations
Generalized Least Squares

| Regressions			Standardized regression estimation	Correlations			Pearson estimation
Family	<-->	Performance	0.00	Family	<-->	Spirituality	-0.312
Religion	<-->	Performance	0.09	Religion	<-->	Spirituality	0.076
Spirituality	<-->	Performance	0.66	Religion	<-->	Family	0.245

Source: Own elaboration.
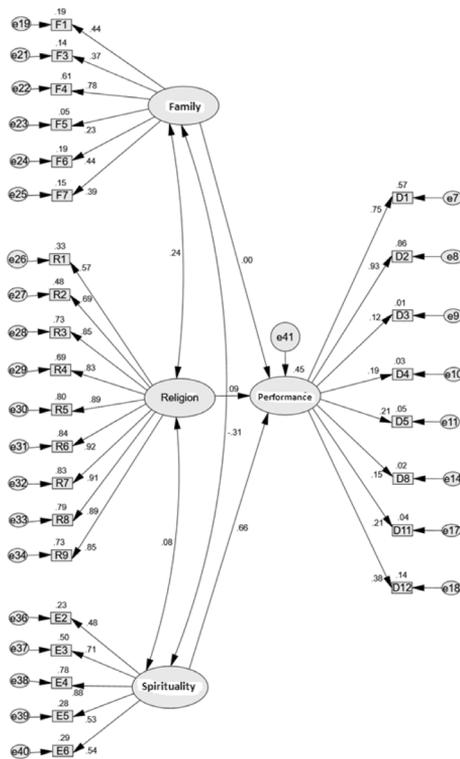
Figure 4. Estimations for Group Values Model.
Source: Own elaboration. Note: The observable variables are shown in Annex 1.

Table 13
Characteristics and description of significant elements for the Spirituality variable.

Dimension	Item	C.R.	It is significant that the employee:
Spirituality[2]	E2	No data[1]	Conceives work as a means to fulfill their missions in life.
	E3	5.46	Is appreciative for their work.
	E4	5.37	Frequently enjoys work to the utmost.
	E5	4.52	Accepts new coworkers within their work circle and work as a fellowship.
	E6	4.26	Feels confident and connected with their coworkers.

Source: Own elaboration.
[1] The estimation was established at 1 for a better fit of the model, based on Arbuckle (2008) and Byrne (2010).
[2] The general estimation for C.R. for the value of spirituality is equal to 2.924 (>1.7 "significant").

Table 14
Summary of quantitative results.

Analysis technique	Use	Findings	Observations
Descriptive Statistical Analysis	To describe the nature of the sample	Descriptive data of the sample	The sample shows a homogeneous nature for the case of gender, age and level of education. High percentage with < 1 year working.
Structural equations modeling	For the analysis and confirmation of the theoretical hypotheses proposed	The Bootstrap goodness of fit statistic proves that the model is correct and provided an acceptable result.	The value of the Bootstrap statistic is greater than 0.05.
		There is no correlation between the three latent variables: family, religion, and spirituality.	The statistical correlation value provided values below 0.5. There is no relation between the variables.
		For the general case of cultural values, it resulted partially significant for performance.	Hypothesis H1 cannot be accepted in full. There is not enough evidence to explain that family and religion are significant in the perception of performance.
		The family variable was not significant for performance.	Hypothesis H2 is rejected. There is not enough evidence to explain that family is significant in the perception of performance.
		The religion variable was not significant for performance.	Hypothesis H3 is rejected. There is not enough evidence to explain that religion is significant in the perception of performance.
		The spirituality variable was significant for performance.	Hypothesis H4 is accepted. The value of spirituality is significant in the perception of performance at work.

Source: Own elaboration

The Critical Radius (C.R.) estimation confirms the level of significance of the elements of the study variables. Based on the results, the characteristics of the most significant variable for performance: spirituality is described (see table 13). Based on the results shown, Table 14 shows a summary of the results obtained from the study of cultural values.

The approval of hypothesis H4 confirms what is found in the literature, where it is stated that spirituality is significant in the performance of the workers (Milliman, Czaplewski & Ferguson, 2003; Giacalone & Jurkiewicz, 2003; Ashmos Plowman & Duchon, 2000; Duchon & Ashmos Plowman, 2005; Garcia-Zamor, 2003; Fry L. W., 2005; Elm, 2003). Conversely, hypotheses H2 and H3 confirmed the opposite of what is found in the literature, where it is stated that family (Greenhaus, Allen & Spector, 2006; Willis, O'Connor & Smith, 2008; Greenhaus & Beutell, 1985; Greenhaus, Bedeian & Mossholder, 1987; Kossek & Ozeki, 1998) and religion (Van Buren III, 1995; Malone, Hartman & Payne, 1998; Charles, 2006; Miller, 2006; Bergen & Mawer, 2008; SHRM, 2008; Walker, 2013) are significant in the performance of the workers.

A contrast is carried out regarding the findings of this study, using empirical evidence consulted in the literature (Table 15); we can indicate that spirituality has a positive effect on performance in studies carried out in various industries and countries such as: Thailand, the United States (USA), Portugal, Puerto Rico, Iran, and Malaysia. Thus, corroborating similar results obtained in this research.

Table 15
Empirical studies that relate spirituality to work performance.

Author (Year)	Relation	Country	Object of study	Subject	Sector
(Petchsawanga & Duchon, 2012).	Direct Positive	Thailand	Study on the productive practices generated by the meditation and spiritual expression of the employees.	250 company employees	Food industry
(Rego & Pina e Cunha, 2008)	Direct Positive	Portugal	Study on the dimensions of spirituality on the work and commitment of the employees.	361 employees of 154 companies	Not specified
(Pérez Santiago, 2007).	Direct Positive	Puerto Rico	Employee perceptions on the topic of spirituality and its relation with the working environment.	250 workers	Services
(Sprung, Sliter, & Jex, 2012)	Direct Positive	USA	The study explores the role of spirituality at work and the relation with some employee metrics.	854 workers	Information obtained from the "General Social Survey"
(Ahmadi, Nami, & Barvarz, 2014)	Direct Positive	Iran	Studies spirituality at work and organizational behavior.	248 workers	Academic
(Campbell & Hwa, 2014)	Direct Positive	Malaysia	Studies the relation between spirituality at work, organizational commitment, and the measurement of performance.	376 workers	Academic

Source: Own elaboration

Conclusions

The present study addresses the subject of organizational behavior by carrying out an analysis using cultural values stratified in three dimensions: family, religion, and spirituality. It can be concluded that the family and religion variables have little relevance in employee performance within the context of the research. On the other hand, the preponderance of spirituality with the dependent variable of performance is emphasized.

Companies aim to maintain operations efficient and productive, and as such must recognize that a simple and viable resource to achieve their goals must be the human factor.

This study provides evidence on important factors that ought to be considered by the companies, in relation with the cultural values and the importance of spirituality in performance.

We conclude and emphasize that it is important that the workers:
1. Believe that the job helps them fulfil their missions in life;
2. Develop a sense of gratitude for the job they have;
3. Frequently enjoy their job to the utmost;
4. Accept new coworkers and integrate them to their working circle;
5. Have confidence and a personal connection with their coworkers.

It is important to establish strategies and management models that promote a spiritual reflection in their personnel; this will help companies improve employee performance, as well as improve quality and achieve organizational objectives that increase their competitiveness.

Rodríguez & Ramírez (2004) mention that we must stop seeing the models of other cultures and develop our own, where human values are included. The research and search for new models that include the values of family, religion, spirituality, among others that identify with the country must be preserved. Furthermore, it will be necessary to maintain lines of research in the medical product manufacturing industrial sector, as well as in other industrial sectors such as the automotive, electronic, food, and mining sectors, among others, to confirm the findings obtained.

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Annex 1. Data collection instrument. Family Variable.

Dimensions of conflict family-work	No.	Statements	Answer					
			Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Conflict between *time* at work and family	F1	The time I spend at work prevents me from participating in my household chores and activities.	1	2	3	4	5
	F2	The time I spend with my family regularly causes me not to invest time on work activities that could help me in my career development.	1	2	3	4	5
	F3	I cannot do overtime or help with the production plans because I have to dedicate that time to my family responsibilities.	1	2	3	4	5
Conflict based on *stress* at work and family	F4	When I get home from work, I am usually too tired to do activities with my family.	1	2	3	4	5
	F5	Due to problems at home, I am usually worried or anxious at work.	1	2	3	4	5
Conflict based on *organizational behavior* with the family and work	F6	I feel that at work there is little concern for me and my family, which makes me feel unappreciated and discouraged at work.	1	2	3	4	5
	F7	If I am not allowed to take time off work to take care of matters of emergency related to my family, I feel unappreciated and discouraged.	1	2	3	4	5

Annex 2. Data collection instrument. Religion Variable.

Dimensions of Religiousness	No.	Statements	Answer				
			Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Relation and Religiousness	R1	I consider myself a religious person.	1	2	3	4	5
	R2	I try to bring my religion and beliefs into every aspect of my life.	1	2	3	4	5
	R3	I feel that God strengthens me to do good things at work.	1	2	3	4	5
Meaning and Religiousness	R4	I believe that God wants me to develop my abilities and talent at work.	1	2	3	4	5
	R5	My faith in God helps me deal with difficult situations at work.	1	2	3	4	5
	R6	I seek excellence at work due to my faith in God.	1	2	3	4	5
Community/ generosity and Religiousness	R7	Because of my faith in God, I appreciate the people who work with me.	1	2	3	4	5
	R8	Because of my faith in God, whether I am alone or with my coworkers, I behave correctly when doing my job.	1	2	3	4	5
	R9	Because of my faith in God, I help my coworkers with work issues.	1	2	3	4	5

Annex 3. Data collection instrument. Spirituality Variable.

Dimensions of Spirituality	No.	Statements	Answer				
			Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Relation of **spiritual awareness (purpose)** with work	E1	I know the meaning and purpose of work	1	2	3	4	5
	E2	My job helps me fulfill the missions I have in life	1	2	3	4	5
Relation of **spiritual feeling (Well-being)** with work	E3	I feel thankful for having a job like mine	1	2	3	4	5
	E4	I frequently enjoy my job to the utmost	1	2	3	4	5
Relation of **spiritual fellowship (Interconnection)** with work	E5	I accept new coworkers to become a part of my working circle and we work as a fellowship	1	2	3	4	5
	E6	I feel a real trust and personal connection with my coworkers	1	2	3	4	5

Annex 4. Data collection instrument. Performance Variable.

Dimensions of Performance	No.	Question	Answer				
			Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	D1	Throughout most of my work day I am busy with my tasks	1	2	3	4	5
	D2	I consider my job to be interesting and not boring	1	2	3	4	5
Work	D3	It takes me a long time to carry out my tasks	1	2	3	4	5
	D4	I always maintain the same pace of work	1	2	3	4	5
	D5	My working hours are enough to complete the activities and tasks I am assigned	1	2	3	4	5
	D6	Due to extraneous circumstances and without it being my intention, I tend to miss work	1	2	3	4	5
	D7	Due to extraneous circumstances and without it being my intention, I tend to arrive late to work	1	2	3	4	5
Personal conditions	D8	I propose ideas to improve the company processes	1	2	3	4	5
	D9	I consider myself to be responsible and dedicated to the tasks that I am assigned	1	2	3	4	5
	D10	I accept the points of view of my coworkers	1	2	3	4	5
Teamwork	D11	I consider that at work they tend to frequently reprimand for poorly performed tasks	1	2	3	4	5
Organizational Characteristic	D12	The training I receive allows me to do my job better	1	2	3	4	5