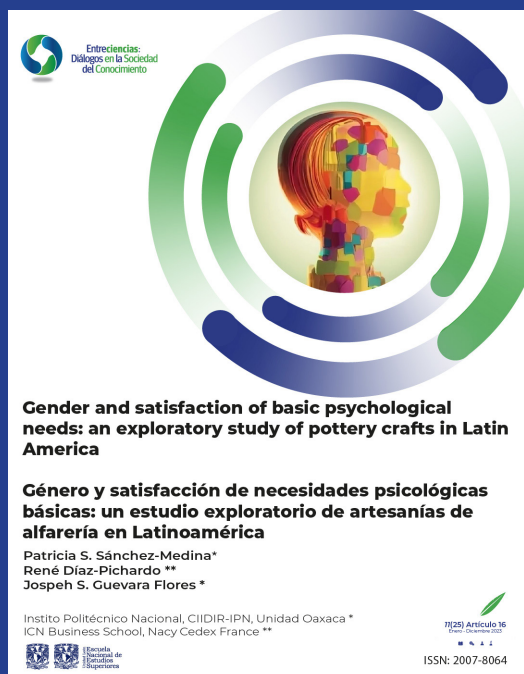


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Gender and satisfaction of basic psychological needs: an exploratory study of pottery crafts in Latin America

Género y satisfacción de necesidades psicológicas básicas: un estudio exploratorio de artesanías de alfarería en Latinoamérica

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RESUMEN

Objetivo: este artículo analiza la relación entre género y la satisfacción de necesidades psicológicas básicas en el sector artesanal de alfarería en Latinoamérica.

Diseño metodológico: se encuestó a 195 gerentes de pequeñas empresas familiares que operan en comunidades artesanales en tres países de América Latina: México, Honduras y Colombia. Se utilizó un modelo de ecuaciones estructurales para ofrecer evidencia de la invarianza factorial del instrumento de medición según el género.

Resultados: se encontró que las mujeres artesanas se muestran más satisfechas que los hombres en cuanto a su necesidad de autonomía y competencia, revelando un importante beneficio de la actividad artesanal. No se encontró diferencia significativa respecto a la satisfacción de relación.

Limitaciones de la investigación: las limitaciones de esta investigación se derivan del método de muestreo, que estuvo principalmente influenciado por restricciones prácticas, financieras y logísticas, más que por criterios teóricos. Además, existe un posible sesgo de no respuesta que pudo haber influenciado los resultados encontrados.

Hallazgos: es importante que el sector artesanal encuentre factores motivacionales que favorezcan la continuidad y desarrollo del sector.

Palabras clave: autonomía, competencia, relación, género, roles múltiples.

ABSTRACT

Purpose: This paper analyzes the relationship between gender and the satisfaction of basic psychological needs in the artisanal pottery sector in Latin America.

Methodological design: We surveyed 195 owners/managers of small family businesses operating in artisanal communities in three Latin American countries: Mexico, Honduras, and Colombia. We used structural equation modeling to offer evidence of factorial invariance of the measurement instrument across genders.

Results: We found that women artisans seem to be more satisfied than men in meeting their need for autonomy and competence, revealing an important benefit of artisanal activity. No significant difference was found in relation to the fulfillment of the need for relatedness.

Research limitations: The limitations of this research are derived from the sampling method, which was mainly driven by practical, financial, and logistical restrictions rather than by theoretical criteria. Nonresponse bias may have also affected our results.

Findings: It is important for the artisanal sector to find motivational factors that contribute to the continuity and development of the sector.

Keywords: autonomy, competence, relatedness, gender, multiple roles.

INTRODUCTION

Research on the satisfaction of basic psychological needs of managers has been scarce and even more so when dealing with the analysis of these needs as important factors in carrying out work activities (Olafsen *et al.*, 2018). This type of research has mainly focused on athletes, students, and employees (Hu *et al.*, 2019; Rahmadani *et al.*, 2019; Rodrigues *et al.*, 2019; Ümmet, 2015; Zayed *et al.*, 2021) or on how managers affect their employees' capacity to meet their basic psychological needs (Rothmann *et al.*, 2013). Likewise, research focused on the basic psychological characteristics of managers has been developed more widely in large companies (Marescaux *et al.*, 2013; Mueller and Lovell, 2018) with very little attention to small family businesses.

In this research, we study artisanal family businesses which are of great economic importance to many communities in Latin America (Paz and Zaldumbide, 2022; Sarabia-Guarin *et al.*, 2020). These businesses are small and usually develop in subsistence contexts with a close relationship between the activities of the business and the family. The two are often so closely entangled that it can be difficult to fully separate one from the other. The decisions made either in the business or at home tend to affect the activities carried out in the business or the family. In the same way, many craft workshops are located within the home and the tasks in these businesses are distributed according to the customs and traditions of the artisanal community in which they take part (Sánchez-Medina *et al.*, 2015; Sánchez-Medina and Díaz-Pichardo, 2017).

Despite the relevance of craft activity for the development of many communities, its continued survival is in danger, mainly due to a lack of support from government agencies and waning interest from younger generations (Aguilar, 2019). Given this, it is essential to find motivational factors that allow for the continuation of the sector. These factors can be a guide for crafts producers and are important elements in preserving craft activity and promoting its development. Studying the satisfaction of basic psychological needs in artisanal family businesses is important because it impacts motivational processes at work according to self-determination theory (Olafsen *et al.*, 2018).

Furthermore, analyzing the satisfaction of basic psychological needs such as autonomy, competence, and relatedness (Deci and Vansteenkiste, 2004; Mills *et al.*, 2021; Sakan *et al.*, 2020) can lead to a better understanding of the multiple roles that women and men adopt at work and in the family under the lens of expansionist theory (Barnett and Hyde, 2001; Wagner and Hausdorf, 2009). Studying the various roles that men or women perform in the artisanal sector is especially important because it allows us to understand the positive outcomes that can result from adopting multiple roles, particularly in a traditionalist sector such as this where the idea of dominant roles may still be present. This is a sector with a clear division of tasks based in particular on male physical strength: on the one hand, it is the man who loads packages, is in charge of all the stages of preparing the clay, and performs the firing of the pottery. On the other hand, it is the woman who mostly makes and decorates small pieces, takes on household activities, and is in charge of children and the elderly. Even when women carry out various activities at the household and business level, in the community it is mainly the men who are seen as the head of the family and business managers (Vizcaino-Suárez, *et al.*, 2017).

In this paper, we study the degree to which the basic psychological needs of women and men owners/managers of pottery handicrafts businesses in emerging economies are met. These are usually family businesses that depend on the decisions of the person who directs them for survival, mostly women or men with different roles in their businesses and families. In particular, this research focuses on the pottery sector operating in artisanal communities in Latin American Countries (Mexico, Honduras, and Colombia).

Both gender and the satisfaction of basic psychological needs have been extensively studied (Aide *et al.*, 2008; Gómez-Baya *et al.*, 2018; Mazhar *et al.*, 2021; Morano *et al.*, 2020; Schweder and Raufelder, 2021; Zhong *et al.*, 2020); however, few investigations are oriented towards explaining how they are related, especially considering the multiple roles that women and men can play in this context (Conde *et al.*, 2019; Wagner and Hausdorf, 2009). To our knowledge, this is the first study to analyze the

satisfaction of the basic psychological needs of artisans in the pottery sector.

Another issue in these studies is gender invariance (Olafsen *et al.*, 2021; Rodrigues *et al.*, 2019; Zayed *et al.*, 2021). Ryan and Deci (2000) argued that the motivational processes essential for human functioning are equivalent across genders. However, the validity of this conclusion may be questioned since many studies on basic psychological needs use only one sex in their samples or assume that the fulfillment of basic psychological needs is the same for women and men (Aide *et al.*, 2008). Therefore, we analyze the differences in the degree of fulfillment of the basic psychological needs of women and men in small family businesses in the pottery sector. We aim to contribute to the development of expansionist theory by understanding the positive outcomes that can result from adopting multiple roles in a traditional sector.

This study aims to identify and explore the internal factors that can influence individuals in undertaking these various roles. They refer to psychological factors such as the satisfaction of the basic needs of autonomy, competence, and relatedness (Wagner and Hausdorf, 2009). In doing so, we address the following research questions:

How are gender and basic psychological needs related in small artisan family businesses as seen through the lens of self-determination theory and expansionist theory?

How do the roles of women and men artisans affect our understanding of positive benefits for their family business?

How do the different roles of women and men artisans affect their family business?

This paper is organized as follows: First, we explain the theories adopted for this study and present the methodology. Subsequently, we describe our findings and discuss the results in contrast to the existing literature. Finally, we present our conclusions, limitations, and potential directions for future research.

EXPANSIONIST THEORY

Expansionist theory, developed by Barnett and Hyde (2001), focuses on explaining the multiple roles that women and men can perform in the context of both work

and family. It should be noted that this theory emerged in a recent historical period when the roles of women and men could be more diversified according to the current reality in which they operate. The expansionist theory proposes three principles that we think are useful in explaining the current reality in family businesses. First, multiple roles are beneficial for both men and women; that is, worker roles are beneficial to women and family roles are beneficial to men. It has been observed that a strong commitment to one type of role does not preclude a strong commitment to the other (Barnett and Hyde, 2001; Hyde, 2016; Wagner and Hausdorf, 2009). Second, different processes such as added income, social support, opportunities to experience success, increased self-complexity, and similarity of experiences, among others, contribute beneficially to worker or family roles for both women and men (Barnett and Hyde, 2001; Wagner and Hausdorf, 2009). Third, the benefits of multiple roles depend on the number of roles and the time demands of each (Wagner and Hausdorf, 2009); for example, in a context of low-wage work, workplace discrimination, and sexual harassment, multiple roles might offer opportunities for failure instead of opportunities for success, due to the frustration that can be generated by carrying out many activities without any kind of reward or satisfaction (Barnett and Hyde, 2001). Importantly, “the natures of women and men need not force them into highly differentiated roles” (Barnett and Hyde, 2001, p. 784), and this has implications for an understanding of multiple roles at work and in the family.

Expansionist theory shows that having multiple roles can be beneficial because they promote better physical health and psychological well-being, as well as provide a greater number of opportunities and resources to facilitate individual growth (Barnett and Hyde, 2001; Grzywacz and Marks, 2000). Having multiple roles can also lead to a positive impact on the work-family relationship, since participation in work or home may be easier by virtue of the experiences, skills, and opportunities gained or developed at home or work (Frone, 2003).

In a study carried out in East Africa for example, it was shown that traditional cattle-centered pastoralism has been transforming into more diversified livelihood activities. Even if men lead most diversification activities, women also play important roles in poultry farming and minor trade, which improves the income and decision-

making power of women in households (Anbacha and Kjosavik, 2021).

Likewise, the literature shows a consensus that the participation rate of men in domestic chores has increased (Akanle *et al.*, 2016). This is clearer in a study by Chahalis *et al.*, (2021) in Tanzania, where it was found that male participation in household chores contributes to improved early childhood development. This is despite the fact that traditions often place men in charge of family finances. This study also showed that men are more likely to get involved in household chores and take part in healthcare decisions when they have completed secondary education.

The literature highlights an interesting watershed regarding gender aspects over time where it is shown that the roles of women and men have been diversifying and it is clear we are now observing a greater involvement of women in work activities and men in domestic activities (Anbacha and Kjosavik, 2021; Chahalis *et al.*, 2021). Therefore, it is interesting to analyze the craft sector through the lens of expansionist theory to explain gender aspects in current times and provide elements that allow a greater understanding of this sector.

The artisanal sector, where this research is carried out, has commonly been characterized in the literature as traditionalist (Sánchez-Medina *et al.*, 2015; Sánchez-Medina and Díaz-Pichardo, 2017); however, recent research conducted in the artisanal sector in the United States focuses on a contemporary artisanal sector from which pro-environmental business practices are explained (Vanderploeg and Lee, 2019). A research study carried out by Sánchez-Medina *et al.*, (2010) related to gender aspects in the artisanal sector aimed to explain the role of women and men in relation to environmental behavior in three states of the Mexican Republic. This study highlights the fact that in Oaxaca, a state in the south of the country, domestic activities and childcare are usually undertaken by women, who also carry out some tasks typical of artisan activity. As for their part, men dedicate most of their time to carrying out activities related to the manufacture of crafts. In central states of the country, craft activity is carried out equally by women and men, without detailing the role that men have with respect to domestic activities.

However, as Wagner and Hausdorf (2009) argued, more research is needed to explain how positive aspects

can be achieved from the adoption of multiple roles, especially in traditionalist societies where the idea of dominant roles prevails. According to these authors, more research is needed on the internal factors that can influence individuals to carry out these multiple roles. They refer to psychological factors, such as the satisfaction of the basic needs of autonomy, competence, and relatedness. In other words, to have a better understanding of the functionality of multiple roles, more research must be done to account for the basic needs that participation in these multiple roles may satisfy.

SELF-DETERMINATION THEORY

The theory of self-determination focuses on three psychological needs inherent to people: autonomy, competence, and relatedness. These needs are important elements for proactivity, optimal development, and psychological health (Wagner and Hausdorf, 2009). According to this theory, these needs are inherent in human nature and thus operate across genders (Deci and Vansteenkiste, 2004).

The need for autonomy refers to people acting within their interests and values, having the will and choice to act either by independent action or in response to the request of other people. The need for competence refers to the inherent desire of people to be effective in dealing with the environment; it is the degree to which individuals perform a task to the best of their ability and achieve the desired results in their environment. The need for relatedness refers to the need for interaction with other people. This need allows one to experience a sense of belonging (Chirkov *et al.*, 2003; Deci and Vansteenkiste, 2004, p. 25; Gómez-Baya *et al.*, 2018).

Self-determination theory recognizes that the satisfaction of these basic needs may vary depending on the context and culture, in addition to the fact that the satisfaction of these needs constitutes a necessary condition for well-being and optimal development (Deci and Vansteenkiste, 2004; Chirkov *et al.*, 2003).

Therefore, taking into consideration the expansionist theory's principle of multiple roles and the basic psychological needs considered in the theory of self-determination, in this study we analyze the role of gender in the satisfaction of basic psychological needs as a

basis for further exploration of the duality of roles that women and men play in small family businesses in the artisanal sector.

Gender and the satisfaction of basic psychological needs

Ryan and Deci (2000) argued that motivational processes essential to human functioning are equivalent across gender groups. This has led previous research to assume that the link between the satisfaction of basic needs and well-being is equivalent for men and women (Reinboth and Duda, 2006). Or, as pointed out by Aide *et al.*, (2008) in a study carried out on adult athletes, it is not necessary for coaches to consider the gender of an athlete to facilitate the satisfaction of his or her basic needs. Likewise, Ümmet (2015) argued that gender does not affect the satisfaction of psychological needs. However, more recent research has shown important differences between the need satisfaction of men and women. For instance, in a study carried out in Europe, Gómez-Baya *et al.* (2018) found that women report lower scores in their level of satisfaction with their sense of autonomy and competence than men, but they found no difference in their level of satisfaction in terms of the need for a sense of relatedness.

In a study carried out to evaluate the impact of a program based on Personal and Social Responsibility Teaching, Manzano-Sánchez *et al.*, (2019), found an improvement in the level of fulfillment of basic psychological needs in female students; in particular, they reported significant differences in terms of the satisfaction of basic psychological needs over time, and these differences were most salient in the need for a sense of competence. Orkibi and Ronen (2017), in a sample of Israeli adolescent students, found no significant difference in the satisfaction of the need for a sense of autonomy between women and men. Also, Kindap-Tepe and Aktas (2019) found no significant difference in the satisfaction of basic psychological needs.

In contrast, in a study conducted with university students in Pakistan, Mazhar *et al.*, (2021) found a significant difference between male and female students in the satisfaction of basic psychological needs. Their results showed that women are more satisfied than men; in par-

ticular, female students have a higher level of satisfaction in terms of feelings of relatedness and competence than male students. No significant difference in the level of satisfaction of the need for a sense of autonomy among male and female students was found.

In a study conducted on a group of athletes in Mexico, Pineda-Espejel *et al.* (2019) found that the satisfaction of the need for a sense of autonomy is factorial invariant across gender; that is, the items related to the measurement of autonomy discriminate better in men than in women. In a study carried out with adolescents, Schweder and Raufelder (2021) found through structural equation models that boys show a stronger relationship between autonomy and intrinsic motivation than girls. In contrast, they found a link between competence and intrinsic motivation in girls only. These findings suggest that few gender-based differences exist in relation to the satisfaction of psychological needs. Morano *et al.*, (2020), in a study about sports participation in youngsters, found significant differences by gender in terms of the need for a sense of competence and autonomy, with boys reporting higher scores. These authors argued that socialization processes affect the perception of competence, and because of gender-based characterizations of activities, boys and girls experience success differently, shaping their sense of competence.

In a study conducted by Zayed *et al.*, (2021) across five Arab countries, it was found that factor loadings were equivalent for women and men in relation to the satisfaction of basic psychological needs, offering support for factorial invariance of the basic psychological necessities across gender. In a study conducted with executives, managers, and employees of firms, Mueller and Lovell (2018) found that men were significantly driven by autonomy and competence. In managers and employees, their results showed that the satisfaction of the need for competence is the strongest predictor of behavior for both men and women.

In an artisanal context and according to Mora and Villar (2015), various economic crises and the ensuing economic adjustments made to overcome them have led to artisan women becoming more involved in family economic support, inserting themselves into the workplace and increasing their presence and prestige in various productive tasks such as artisanal manufacturing. This situation has been even more visible in recent times sin-

ce the current health crisis caused by SARS-COV-2 has led artisan women to become more involved in activities that correspond to their family business; we, therefore, think that the artisan sector is in a state of transitioning towards offering greater opportunities for women.

Based on the previous arguments, we propose the following hypotheses in the context of artisanal family businesses in Latin American countries:

H1. The satisfaction of psychological needs is factorial invariant across genders.

H2. The level of satisfaction in meeting the need for a sense of autonomy is higher in women than in men.

H3. The level of satisfaction in meeting the need for a sense of competence is higher in women than in men.

H4. The level of satisfaction in meeting the need for a sense of relatedness is higher in women than in men.

METHODOLOGY

We conducted our research in the artisanal sector, specifically with family pottery businesses. The pottery sector is interesting to study in terms of gender roles since until recently it was considered an activity carried out exclusively by men; it was not until the year 2000 that we began to see women included in this activity (Moctezuma, 2010). Although in some pottery towns, as pointed out by Vizcaino-Suárez *et al.*, (2017) most active artisans are still men, and the tradition is usually transmitted through the paternal line, greater involvement of women is beginning to be seen. There is usually a marked division of labor by gender since men are in charge of tasks that include physical efforts such as preparing, grinding, and molding clay, while women are in charge of making small pieces, painting, and decorating. Hence, the pottery sector has been selected to be the object of study of this research.

Furthermore, we centered our research on a particular type of family firm described as the family-property type by Miller *et al.*, (2011), and Shrivastava and Kennelly (2013). In these businesses, a member of the founding family leads the business in which other family members participate. Business operations are carried out

where the family lives and are focused on satisfying the family's basic needs. These artisanal businesses have been found to have a strong cultural component that reinforces the identity of the artisan and their ties to the artisanal community; they are rather small, with a precarious economy, and artisans usually live at the subsistence level and have completed little schooling (Díaz-Pichardo *et al.*, 2017).

Sample

The inclusion criteria for the selection of family artisanal pottery businesses in our sample are as follows: 1) manufacturing takes place in the family home, 2) only family labor is used, and 3) the business is part of an artisanal community. Businesses in the sample were selected in a convenient manner, from countries and communities with a significant representation of family pottery businesses, taking into consideration viable logistics and accessible costs, with the aim of obtaining a sufficient and representative sample in terms of the number of family businesses included.

We selected family pottery businesses from the following communities: Ráquira, Boyacá Department, Colombia; Ojonona, Francisco Morazán Department, Honduras; and Santa María Atzompa, State of Oaxaca, Mexico. In these communities, artisanal activity makes up a significant proportion of the local economy so they can be considered artisanal communities. To determine our targeted sample size (shown in Table 1), we used a formula to determine the sample size based on proportions and finite populations, with a 95% confidence level and a 3% margin of error.

The sampling method consisted of approaching a pottery business in the community and asking the person in charge to answer some questions regarding their needs as artisans and how these needs influence their family and business. Interviewees were told that they should answer according to their own perceptions and experiences and that their answers would be strictly confidential. Pottery businesses within a community were selected based on the ease of reaching the business as well as on the availability of the person in charge and her/his willingness to take the survey. As some artisans were reluctant to take the survey, we

were not able to interview the desired number of artisans in Santa María Atzompa. No measures could be taken to deal with potential non-response bias. This is acknowledged as a limitation of our research.

Table 1. Sample

	Population	Targeted Samples	Obtained sample	% of the Population
Ojozona, Honduras	104	74	70	67.3
Ráquira, Colombia	106	74	75	70.7
Santa María Atzompa, Mexico	90	74	50	55.5
Total Family Firms	280	222	195	69.6

Source: Self-made with information of Casa de las Artesanías (2011) and SPSS software

Measures, validity, and reliability

We collected the data using a structured questionnaire that was administered via face-to-face interviews in Spanish. The validity of the scales was guaranteed using the following stages:

Stage 1: Expert-judgment validation. A preliminary version of the questionnaire (based on a literature review) was shared with an expert in field research in the artisanal sector to validate its content and improve the survey instrument.

Stage 2: Single-case validation. An improved version of the questionnaire was administered to a single person after verifying that he met the established criteria. We asked him to read each item and the possible scale answers out loud and then respond to them out loud as well. Afterwards, he expressed his opinion on the length and readability of the instrument, as well as his recommendations for improvement. In consequence, some items were discarded or rewritten.

Stage 3: Pilot testing. Thirty questionnaires were administered to artisans owning a pottery family business, making sure they met the sampling criteria. This allowed us to improve the items again. In the end, the final questionnaire was composed of 75 items, divided into six sections, plus personal (e.g., sex and age) and business information (e.g., type of business and number of active family members).

Gender: We measured gender using 1 (women) and 2 (men) as values. In the sample, women and men are distributed as shown in Table 2.

Table 2. Gender of the artisans in the sample by artisanal community

	Santa María Atzompa, State of Oaxaca, Mexico	Francisco Morazán Department, Honduras	Ráquira, Boyacá Department, Colombia	Total
Women	27	51	47	125
Men	23	19	28	70
Total	50	70	75	195

Source: Self-made with information of SPSS software

Basic Psychological Needs: We adapted the items proposed by Gómez-Baya *et al.*, (2018) to measure three dimensions: autonomy, competence, and relatedness. The items were adapted to better capture how women and men in the handicraft sector perceive the satisfaction of their needs for autonomy, competence, and relatedness. A nine-item scale assessed the three basic psychological needs: autonomy, competence, and relatedness. The answers were collected on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

The nine items and their factor loadings are shown in Table 3. It is observed that the items charge significantly in one and only one factor, giving evidence of discriminant validity. Cronbach's alpha varies between 0.668 and 0.773 demonstrating sufficient reliability. Table 4 shows the Pearson correlation coefficients between the dimensions of the satisfaction of psychological needs. The square root of the average variance extracted (AVE) is shown in the diagonal in bold. The fact that these values are greater than any correlation in the table gives evidence of discriminant validity.

Table 3. Factor loadings and reliability coefficients

Item	Autonomy	Competence	Relatedness	Communalities
A1. The business has grown and improved with time.	0.6172	0.2294	-0.0547	0.437
A2. I have made the best decisions for the business.	0.5947	0.2789	0.0740	0.437
A3. There are opportunities for growth in the artisanal sector.	0.6698	-0.0002	0.2716	0.522
C1. The crafts we make in our business are in demand.	0.0097	0.7133	0.1707	0.538
C2. Our customers place a high demand on our products.	-0.0659	0.6978	0.1467	0.513
C3. I am satisfied with my work.	-0.2763	0.5733	0.1423	0.425
R1. The extraction of raw materials is done collectively (with our neighbors).	0.0389	-0.0513	0.7096	0.508
R2. Our business is part of an artisanal organization.	0.0607	-0.1060	0.6858	0.485
R3. Our artisanal organization supports exports.	0.1462	-0.0803	0.7320	0.564
Eigenvalues	1.079	2.515	2.359	
Variance explained	0.571	2.007	1.851	
Cronbach's alpha	0.668	0.722	0.773	

Source: Self-made with information of EQS software

Note: Significant factor loading in bold.

Table 4. Pearson correlations and square root of the average variance extracted (AVE) as evidence of discriminant validity

Construct	Mean	Standard Deviation	Autonomy	Competence	Relatedness
Autonomy	3.88	0.81	0.6280		
Competence	3.99	0.90	0.3127	0.6640	
Relatedness	2.18	0.94	0.1776	-0.1606	0.709

Source: Self-made with information of EQS software

Note: Square root of AVE in bold in the diagonal.

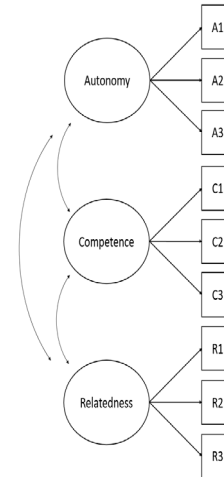
RESULTS

Factorial invariance across gender

Our first hypothesis concerning the satisfaction of men and women's basic psychological needs deals with factorial invariance; that is, determining if this satisfaction can be assessed in women and men using the same items. To analyze this, we tested for factorial invariance of the measurement instrument using the EQS software for structural equation modeling. In doing this, we followed the strategy and recommendations proposed by Byrne (2008). First, we created a measurement model

including all nine items and the three factors as depicted in Figure 1. Second, we modified the model according to the modification indices provided by the EQS software to obtain a good model fit. Third, we tested the factor loadings for each observed measure for its equivalence across groups; in our case, women and men.

Figure 1. Measurement model



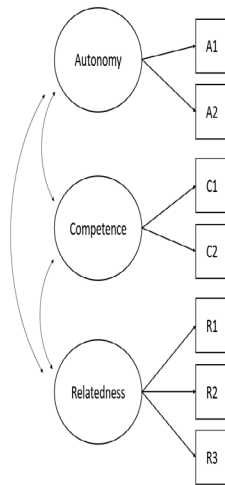
Source: author's own elaboration.

For the first step, we conducted a confirmatory factor analysis by creating a measurement model including the nine items and the three dimensions of satisfaction of basic psychological needs. This first model was estimated using the total sample ($N = 195$) and the maximum-likelihood estimation method. It did not show a good fit as demonstrated by a significant p -value for the model chi-square test ($p = 0.00002$). We assessed model fit based on the recommendations by Hatcher (1994): the p -value of the chi-square > 0.05 , CFI > 0.9 , 90% C.I. of the RMSEA should include 0.00.

For the second step, we modified the model according to the modification indices provided by the EQS software, particularly the Lagrange Multiplier Test for adding parameters. As a result, two items were deleted because they showed significant cross-loadings: A3 and C3. In our case, items showing cross-loadings can be eliminated without representing a threat to validity because all the measures in our research are reflective measures; that is, the construct we want to measure explains the items (Edwards and Bagozzi, 2000). So, if one or two items are deleted, the remaining items can still be used as a valid measure of the corresponding construct

(Byrne, 2008). The new measurement model is depicted in Figure 2. This second model showed a good fit: chi-square = 15.828; degrees of freedom = 11; p -value for the model chi-square > 0.14; chi-square/df ratio < 1.5; CFI = 0.983; the absolute value for the t statistic for each factor loading > 1.96; unidimensionality of the measures is obtained; the 90% C.I. of RMSEA includes 0.00.

Figure 2. Modified measurement model



Source: Self-made with information of EQS software

For the third step, we tested the factor loadings for each observed measure for its equivalence across groups, in our case, men and women. In doing so, we established a baseline model as proposed by Byrne (2008); in this baseline model, the data are analyzed separately for each group. Then, we imposed equality constraints on the path coefficients for both groups. A nonsignificant variation of the chi-square accounted for the factorial invariance of the measurement instrument between women and men.

The baseline model showed a good fit: chi-square = 20.285; degrees of freedom = 22; the p -value for the chi-square > 0.56; chi-square/df ratio < 1; CFI = 1; the absolute value for the t statistic for each factor loading > 1.96; unidimensionality of the measures is obtained; the 90% C.I. of RMSEA includes 0.00.

The model with the equality constraints also showed a good fit: chi-square = 28.081; degrees of freedom = 26; the p -value for the chi-square > 0.35; chi-square/df ratio < 1.2; CFI = 0.992; the absolute value for the t statistic for each factor loading > 1.96; unidimensionality of the mea-

asures is obtained; the 90% C.I. of RMSEA includes 0.00.

The test for factorial invariance consists of determining if the difference in the chi-square values for the unconstrained and constrained models is significant. In this case, $28.081 - 20.285 = 7.796$ for $26 - 22 = 4$ degrees of freedom, which is nonsignificant at $p < 0.05$, offering evidence of factorial invariance of the measurement instrument across groups (women and men in artisanal family businesses), confirming our first hypothesis.

Gender differences in satisfaction of basic psychological needs

After addressing the validity, reliability, and factorial invariance of the measurement instrument, we conducted t -tests for each dimension of the satisfaction of psychological needs. Table 5 shows the results. It can be observed that women show a higher level of fulfillment in terms of the need for autonomy and competence than men. Thus, we confirm hypotheses H2 and H3. However, we found no significant difference in the fulfillment of the need for relatedness. Thus, H4 is rejected.

Regarding the satisfaction of the need for autonomy, women are more satisfied compared to men. The craftswoman feels that she has control over her circumstances in the field of business and feels free to make decisions for herself regarding the improvement and growth of the business. Therefore, the craftswoman can decide the hours she dedicates to work, for example, finding support to carry out household activities such as childcare, and is, therefore, more autonomous and able to manage her work and family responsibilities compared to men (Wu and Zhou, 2020). In a traditionalist sector such as the artisanal one, the autonomy of women represents an interesting fact because it shows a sector where we are beginning to glimpse a change in gender roles as greater numbers of independent women have an increased presence in business issues.

A sense of competence seems to be a universal aspect of the experience of success, which is perceived differently along gender lines; therefore, each gender establishes its sense of competence through factors such as socialization processes and agents (Gómez-Baya *et al.*, 2018; Morano *et al.*, 2020). In the artisanal sector, it has been shown that the perception of competition is

associated with the performance of a craftswoman or craftsman in comparison to another craftswoman or craftsman from the same community; the improvement of their own satisfaction (because he/she tries new tasks, learns new skills, or adapts to challenging circumstances), improvement in sales and the fulfillment of client expectations (Sánchez-Medina *et al.*, 2010; Sánchez-Medina *et al.*, 2015). This research shows that in terms of competition, women are more satisfied than men. The craftswoman meets or exceeds her expectations and, in this process, the collaborative ties that she establishes as well as her agents of socialization allow her to meet this need. These findings suggest that the satisfaction of competence and autonomy in women artisans can counteract some negative aspects related to the division of roles in both the family and the business. By virtue of the empowerment women perceive, they actively participate in decision-making surpassing the gender constraints traditionally imposed upon them.

The results found here reveal a sector in transition whereby fulfilling their needs for autonomy and competence women are able to achieve greater participation and recognition in the business sector. While there is still a division of tasks, artisan women are beginning to become more involved in other pottery processes such as the purchase of raw materials, firing of clay, and the design and execution of other larger artisan pieces as they become more securely involved in business decision-making. For example, many of the women who were interviewed for this study are in charge of the family business, carrying out activities of both production and the sale of handicrafts. The current artisan woman can decide what role she wants to take on; some no longer want to just paint and decorate, and so they become involved in other stages of the process. Childbearing is also a factor; as children become more independent, a woman craftsman is able to dedicate more time to the business, and thus more equitable work is observed between women and men.

In other cases, the man acts as the head of the family and the business representative. He teaches his knowledge to his wife, sons, and daughters because he knows this will allow for the survival of his family. In the face of external factors such as the recent health crisis caused by COVID-19, the family recognizes the importance of everyone being trained for a particular

role or activity. Although it is true that this artisan man is still resistant to getting involved in domestic activities or caring for children, he is more open to the increasing participation of women in business activities.

Regarding fulfillment of the need for relatedness, both women and men are equally satisfied; *i.e.*, both perceive the same degree of acceptance and relationship with others, particularly with other craftswomen or craftsmen in the community and the various artisan organizations to which they belong.

The results obtained here allow us to see that the roles of women in the artisanal sector can be more diversified depending on the psychological needs that those roles satisfy. Therefore, psychologically speaking, craftswomen have the ability to play multiple roles in their work and their family. Concerning men, more research is necessary to measure aspects focused not just on the business environment but also on the family.

The results found in this article also allow us to visualize the impact that women have on community development. On the one hand, they produce and sell products in the market, with which they generate income for their families and create opportunities for employment. On the other hand, through their reproductive work, they contribute to the education, health, and well-being of their families. These aspects are commonly invisible in a marginalized and underserved sector such as the pottery sector.

Table 5. T-test for differences between men and women

Construct	Mean for Women	Mean for Men	t	p (two tails)	Hypothesis
Autonomy	3.95	3.49	3.83	0.000	H2 accepted
Competence	4.09	3.59	3.40	0.001	H3 accepted
Relatedness	2.19	2.17	0.18	0.856	H4 rejected

Source: Self-made with information of EQS software

DISCUSSION

Our findings contrast with the proposition of Ryan and Deci (2000), who argued that motivational processes essential to human functioning are equivalent across sex

groups. We found that satisfaction of basic psychological needs is not equivalent for men and women as Reinboth and Duda (2006) and Ümmet (2015) proposed, at least in family businesses in the craft sector. Our results are also contrary to those of Orkibi and Ronen (2017), who found no significant difference in the satisfaction of the need for autonomy between women and men, and to those of Kindap-Tepe and Aktas (2019), who found no significant difference in the satisfaction of basic psychological needs between women and men.

Our results contrast with those of Gómez-Baya *et al.*, (2018), who found that women report lower scores in terms of meeting their need for autonomy and competence than men. However, our results coincide with theirs in that they found no difference in the levels of satisfaction with the need for relatedness between women and men. Our findings also contrast with those of Morano *et al.*, (2020), who found significant differences by sex in terms of fulfillment of the need for competence and autonomy, with boys reporting higher scores than girls in a study about sports participation in youngsters. We found the opposite.

Our findings coincide to a certain extent with what Mazhar *et al.*, (2021) found in Pakistani students: there is a significant difference between male and female students in the satisfaction of basic psychological needs. Their results showed that women are more satisfied than men in terms of the need for a feeling of competence. However, they also found that women are more satisfied than men in terms of relatedness. These authors found no significant difference in the satisfaction of the need for autonomy among male and female students in contrast to what we found that women show a greater level of satisfaction with their sense of autonomy than men.

In terms of factorial invariance, on the one hand, our results coincide with those of Zayed *et al.*, (2021), who found that factor loadings were equivalent for women and men regarding the satisfaction of basic psychological needs across five Arab countries, offering support for factorial invariance across sex. On the other hand, our results contrast with what Pineda- Espejel *et al.*, (2019) reported in a study carried out on athletes in Mexico, which is that the items related to the measurement of autonomy discriminate better in men than in women.

CONCLUSIONS

This research study aims to contribute to the literature on the satisfaction of the basic psychological needs of owners/managers of small family businesses in emerging economies. We in particular focus on the artisanal sector operating in artisanal communities in Latin American Countries (Mexico, Honduras, and Colombia); more precisely, in pottery businesses.

By using structural equation modeling techniques, we tested for factorial invariance of the measurement instrument and confirmed that the scale is useful in assessing the satisfaction of the basic psychological needs of both women and men who are owners/managers of small family businesses in the pottery sector. T-tests also confirm that women are more satisfied than men in terms of autonomy and competence. No significant difference was found about the satisfaction of the need for relatedness.

The contributions of this research can be categorized as theoretical, methodological, and practical: in theoretical terms, this article identifies differences in the satisfaction of basic psychological needs in women and men. In particular, the satisfaction of autonomy and competence (based on the self-determination theory) in women explains the functionality of the multiple roles (based on the expansionist theory) that a craftswoman performs in work and family and advances our understanding of the positive effect of multiple roles on aspects of gender. Therefore, both theories complement each other in moving towards a better understanding of the multiple roles that women and men play in their work and family environments. Methodologically, this study proposes a measurement instrument to assess the satisfaction of basic psychological needs adapted to the artisanal sector that has been tested for factorial invariance between women and men in different countries in Latin America. Practical contributions are related to the higher levels of satisfaction in terms of the need for autonomy and competence reported by women in comparison to those reported by men. The artisanal sector might contribute significantly to the personal development of women in artisanal communities, confirming the importance of this sector not only in terms of its economic benefits, but also in terms of psychological benefits for women.

Limitations and recommendations for future research

The limitations of this research are derived from our sampling method, which emphasized convenience. The selection of the countries and artisanal communities included in the study was mainly driven by practical, financial, and logistical restrictions rather than by theoretical criteria. The selection of these businesses and the fact that nonresponse bias might affect the results are part of these limitations.

As for recommendations for future research on the topic, due to the contrasting results in the literature, we would like to highlight the importance of continuing to explore the relationship between gender and the satisfaction of basic psychological needs in other sectors in emerging economies. Longitudinal studies could reveal important aspects about how the adoption of multiple roles at work and in the family by women and men affects the way they perceive the satisfaction of their basic psychological needs.

REFERENCES

- Aguilar, L. (25 June 2019). La artesanía y otros estilos de vida en riesgo de desaparecer. El Diario. Available at: https://www.eldiario.es/castilla-la-mancha/ecologica/artesania-estilos-vida_132_1464524.html
- Aide, J., Duda, J., and Ntoumanis, N. (2008). Autonomy support, basic need satisfaction and the optimal functioning of adult male and female sport participants: A test of basic needs theory. *Motivation and Emotion*, 32, 189-199. <https://doi.org/10.1007/s11031-008-9095-z>
- Akanle, O., Adesina, J., and Ogbimi, A. (2016). Men at work keep-off: male roles and household chores in Nigeria. *Gender & Behaviour*, 14(3), 7833-7854.
- Anbacha, A. and Kjosavik, D. (2021). Pastoral livelihood diversification and gender in Borana, Southern Ethiopia. *Rangeland Ecology & Management*, 79, 1-12. <https://doi.org/10.1016/j.rama.2021.06.006>
- Barnett, R. and Hyde, J. (2001). Women, Men, Work, and Family: An Expansionist Theory. *American Psychologist*, 56(10), 781-796. <https://doi.org/10.1037/0003-066X.56.10.781>
- Bertrand, M. and Antoinette, S. (2003). Managing with style: The effect of managers on firm policies. *The Quarterly Journal of Economics*, 118(4), 1169-1208. <http://www.jstor.org/stable/25053937>
- Byrne, B. (2008). *Structural equation modeling with EQS. Basic concepts, applications, and programming*. UK: Taylor & Francis Group.
- Chahal, E., Mcghee, J., Mulokozi, G., Barham, S., Chappell, C., Schenk, C., ..., and Benjamin, C. (2021). Tanzanian men's engagement in household chores is associated with improved antenatal care seeking and maternal health. *BMC Pregnancy and Childbirth*, 21, 1-8.
- Chirkov, V., Ryan, R., Kim, Y., and Kaplan, U. (2003). Differentiating autonomy from individualism and independence: A self-determination theory perspective on internalization of cultural orientations and well-being. *Journal of Personality and Social Psychology*, 84(1), 97-110. <https://doi.org/10.1037/0022-3514.84.1.97>
- Conde, T., Vázquez, V., Rostagnol, S., and Hooft, A. (2019). Cuidado de los hijos y actividades domésticas en parejas con doble carrera en Montevideo. *Entreciencias*, 6(18), 55-71. <https://doi.org/10.22201/enesl.20078064e.2018.18.63363>
- Deci, E., Ryan, R., Gagné, M., Leone, D., Usunov, J., and Boyanka, K. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former Eastern bloc country: A cross-cultural study of self-determination. *Personality and Social Psychology Bulletin*, 27(8), 930-942. <https://doi.org/10.1177/01461672012780>
- Deci, E. and Vansteenkiste, M. (2004). Self-determination theory and basic need satisfaction: Understanding human development in positive psychology. *Ricerche di Psicologia*, 1(27), 23-40.
- Díaz-Pichardo, R., Sánchez-Medina, P.S., and Henríquez, T. (2017). Innovación y competitividad en el sector artesanal. *Recherches en Sciences de Gestion – Management Sciences – Ciencias de Gestión*, 121(4), 41-66. <https://doi.org/10.3917/resg.121.0041>
- Edwards, J. and Bagozzi, R. (2000). On the nature and direction of relationships between constructs and measures. *Psychological Methods*, 5(2), 155-174. <https://doi.org/10.1037/1082-989X.5.2.155>

- Frone, M. (2003). *Work-Family Balance*. Washington: American Psychological Association.
- Gómez-Baya, D., Lucia-Casademunt, A., and Salinas-Pérez, J. (2018). Gender differences in psychological well-being and health problems among European health professionals: Analysis of psychological basic needs and job satisfaction. *International Journal of Environmental Research and Public Health*, 15, 1-17. <https://doi.org/10.3390/ijerph15071474>
- Grzywacz, J.G. and Marks, N.F. (2000). Reconceptualizing the work-family interface: an ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology*, 5(1), 111-126. <https://doi.org/10.1037/1076-8998.5.1.111>
- Hatcher, L. (1994). *A step-by-step approach to using the SAS system for factor analysis and structural equation modeling*. Cary, NC: SAS Institute.
- Hu, B., Liu, J., and Hailin, Q. (2019). The employee-focused outcomes of CSR participation: The mediating role of psychological needs satisfaction. *Journal of Hospitality and Tourism Management*, 41, 129-137. <https://doi.org/10.1016/j.jhtm.2019.10.012>
- Hyde, J. (2016). Women, Men, Work, and Family: Expansionist Theory Updated, Susan McHale, Valerie King, Van Hook, Alan Booth. (eds.) *Gender and Couple Relationships. National Symposium on Family Issues*, Springer, New York. 93-109.
- Kindap-Tepe, Y. and Aktas, V. (2019). The mediating role of needs satisfaction for prosocial behavior and autonomy support. *Current Psychology*, 40(20), 5212-5224. <https://doi.org/10.1007/s12144-019-00466-9>
- Manzano-Sánchez, D., Valero-Valenzuela, A., Conde-Sánchez, A., and Ming-Yao, C. (2019). Applying the personal and social responsibility model-based program: Differences according to gender between basic psychological needs, motivation, life satisfaction and intention to be physically active. *International Journal of Environmental Research and Public Health*, 16, 1-11. <https://doi.org/10.3390/ijerph16132326>
- Marescaux, E., De Winne, S., and Sels, L. (2013). HR practices and HRM outcomes: the role of basic need satisfaction. *Personnel Review*, 42(1), 4-27. <https://doi.org/10.1108/00483481311285200>
- Mazhar, S., Loona, M., Ehsan, N., and Hassan, A. (2021). Need satisfaction and mental well-being among working and non-working university students in Pakistan: A gender perspective. *Asean Journal of Psychiatry*, 22(4), 1-10.
- Miller, D., Breton-Miller, I., and Richard, L. (2011). Family and lone founder ownership and strategic behaviour: Social context, identity, and institutional logics. *Journal of Management Studies*, 48(1), 1-25. <https://doi.org/10.1111/j.1467-6486.2009.00896.x>
- Mills, D., Li, W., and Nower, L. (2021). General motivations, basic psychological needs, and problem gambling: applying the framework of self-determination theory. *Addiction Research & Theory*, 29(2), 175-182. <https://doi.org/10.1080/16066359.2020.1787389>
- Moctezuma, P. (2010). La mujer en la alfarería de Tlaxacapan, Morelos: Retrospectiva etnográfica de un oficio. *Revista Pueblos y Fronteras digital*, 6(9), 223-246.
- Mora, M. and Villar, M. (2015). El desarrollo de las mujeres artesanas y su configuración identitaria con una perspectiva de género. 20º Encuentro Nacional sobre Desarrollo Regional en México, AMECIDER.
- Morano, M., Bortoli, L., Ruiz, M., and Robazza, C. (2020). Psychobiosocial states as mediators of the effects of basic psychological need satisfaction on burnout symptoms in youth sport. *International Journal of Environmental Research and Public Health*, 17, 1-14. <https://doi.org/10.3390/ijerph17124447>
- Mueller, M. and Lovell, G. (2018). Senior executives' basic psychological need, satisfaction and psychological well-being: Is it different at the top? *Management and Economics Research Journal*, 4, 289-304. <https://doi.org/10.18639/MERJ.2018.04.734411>
- Olafsen, A., Deci, E., and Hallgeir, H. (2018). Basic psychological needs and work motivation: A longitudinal test of directionality. *Motivation and Emotion*, 42, 178-189. <https://doi.org/10.1007/s11031-017-9646-2>
- Olafsen, A., Halvari, H., and Wiemann, C. (2021). The ba-

- sic psychological need satisfaction and need frustration at work scale: A validation study. *Frontiers in Psychology*, 12, 1-12. <https://doi.org/10.3389/fpsyg.2021.697306>
- Orkibi, H. and Ronen, T. (2017). Basic psychological needs satisfaction mediates the association between self-control skills and subjective well-being. *Frontiers in Psychology*, 8, 1-10. <https://doi.org/10.3389/fpsyg.2017.00936>
- Paz, M. and Zaldumbide, G. (2022). Alfombras de Guano: reanudando el tejido suelto de Latinoamérica. *Esferas*, 3(1), 70-93. <https://doi.org/10.18272/esferas.v3i1.2443>
- Pineda-Espejel, A., López, I., Guimaraes, A., Martínez, S., Morquecho-Sánchez, R., Morales-Sánchez, V., and Henrique, E. (2019). Psychometric properties of a Spanish version of the basic needs satisfaction in sports scale. *Frontiers in Psychology*, 10, 1-9. <https://doi.org/10.3389/fpsyg.2019.02816>
- Rahmadani, V., Schaufeli, W., Ivanova, T., and Osin, E. (2019). Basic psychological need satisfaction mediates the relationship between engaging leadership and work engagement: A cross-national study. *Human Resource Development Quarterly*, 30, 453-471. <https://doi.org/10.1002/hrdq.21366>
- Reinboth, M. and Duda, J. (2006). Perceived motivational climate, need satisfaction and indices of well-being in team sports: A longitudinal perspective. *Psychology of Sport and Exercise*, 7(3), 269-286. <https://doi.org/10.1016/j.psychsport.2005.06.002>
- Rodrigues, F., Neiva, H., Marinho, D., Mendes, P., Teixeira, D., Cid, L., and Monteiro, D. (2019). Assessing need satisfaction and frustration in Portuguese exercise instructors: scale validity, reliability and invariance between gender. *Cuadernos de Psicología del Deporte*, 19(1), 233-240. <https://doi.org/10.6018/cpd.347331>
- Rothmann, S., Diedericks, E., and Swart, J. (2013). Manager relations, psychological need satisfaction and intention to leave in the agricultural sector. *SA Journal of Industrial Psychology*, 39(2), 1-11. <https://hdl.handle.net/10520/EJC141222>
- Ryan, R. and Deci, E. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78. <https://doi.org/10.1037/0003-066X.55.1.68>
- Šakan, D., Žuljević, D., and Rokvić, N. (2020). The role of basic psychological needs in well-being during the COVID-19 outbreak: A self-determination theory perspective. *Frontiers in Public Health*, 8, 1-14. <https://doi.org/10.3389/fpubh.2020.583181>
- Sánchez-Medina, P.S., Domínguez, M.L., and Hernández, J. (2010). Género y comportamiento ambiental de los negocios de artesanías de barro. *Gestión y Política Pública*, XIX (1), 79-110.
- Sánchez-Medina, P.S., Díaz-Pichardo, R., Bautista-Cruz, A., and Toledo-López, A. (2015). Environmental compliance and economic and environmental performance: Evidence from handicrafts small businesses in Mexico. *Journal of Business Ethics*, 126, 381-393.
- Sánchez-Medina, P.S. and Díaz-Pichardo, R. (2017). Environmental pressure and quality practices in artisanal family businesses: The mediator role of environmental values. *Journal of Cleaner Production*, 143, 145-158.
- Sarabia-Guarín, A., Sánchez-Molina, J., and González-Mendoza, J. (2020). Retos y tendencias del sector cerámico artesanal de Cúcuta y su área metropolitana. *Respuestas*, 25(S1), 67-79.
- Schweder, S. and Raufelder, D. (2021). Needs satisfaction and motivation among adolescent boys and girls during self-directed learning intervention. *Journal of Adolescence*, 88, 1-13. <https://doi.org/10.1016/j.adolescence.2021.01.007>
- Shrivastava, P. and Kennelly, J. (2013). Sustainability and place-based enterprise, *Organization & Environment*, 26(1), 83-101. <https://doi.org/10.1177/1086026612475>
- Ümmet, D. (2015). Self esteem among college students: a study of satisfaction of basic psychological needs and some variables. *Procedia-Social and Behavioral Sciences*, 174, 1623-1629. <https://doi.org/10.1016/j.sbspro.2015.01.813>
- Vanderploeg, J. and Lee, S.E. (2019). Factors influencing pro-environmental behaviors in craft businesses. *Clothing and Textiles Research Journal*, 37(1), 51-65. <https://doi.org/10.1177/0887302X18800394>
- Vizcaino-Suárez, L., Serrano-Barquín, R., Cruz-Jiménez, G., and Pastor-Alfonso, M. (2017). Turismo, alfarería y trabajo femenino en el pueblo mágico de

- Meteppec, México. *PASOS, Revista de Turismo y Patrimonio Cultural*, 15(2), 391-407.
- Wagner, M. and Hausdorf, P. (2009). The positive interaction of work and family roles: Using need theory to further understand the work-family interface. *Journal of Managerial Psychology*, 24(4), 372-385. <https://doi.org/10.1108/02683940910952732>
- Wu, J. and Zhou, J. (2020). How the configurations of job autonomy, work-family interference, and demographics boost job satisfaction: an empirical study using fsQCA. *Asian Business & Management*, 21, 547-568. <https://doi.org/10.1057/s41291-020-00138-8>
- Zayed, K., Omara, E., Al-Rawahi, N., Al-Shamli, A., Al-Atiyah, A., Al-Haramleh, A., ..., and Hassan, M. (2021). Psychometric properties of the Arabic version of the basic psychological needs satisfaction-frustration scales (BPNSFS). *BMC Psychology*, 9(15), 1-11. <https://doi.org/10.1186/s40359-020-00506-1>
- Zhong, M., Huebner, S., and Tian, L. (2020). Gender-specific trajectories of depressive symptoms in Chinese children: Relations with basic psychological needs satisfaction at school. *Journal of Abnormal Child Psychology*, 48, 1367-1378. <https://doi.org/10.1007/s10802-020-00674-z>
- rces, *Conservation & Recycling Advances* 18, <https://doi.org/10.1016/j.rcradv.2023.200147>
- Sánchez-Medina, P.S. (2022). Entrepreneurial orientation and environmental behavior: An explanation from the values of ecocentrism and conformity of Mexican artisans. *Journal of Developmental Entrepreneurship* 27(3), 1-22, <https://doi.org/10.1142/S1084946722500182>
- Reyes-Santiago, M., Méndez-García, E., and Sánchez-Medina, Patricia S. (2022). A mixed methods study on community-based tourism as an adaptive response to water crisis in San Andrés Ixtlahuaca, Oaxaca, Mexico. *Sustainability*, 14(10), <https://doi.org/10.3390/su14105933>

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