Family of Origin Characteristics as Predictors of Childbearing Motivations

Características de la familia de origen como predictores de las motivaciones para tener hijos

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Abstract

This study examines childhood experiences and the relationship with the family of origin as predictive variables for positive childbearing motivation (PCM). It was conducted through analyses using the method of Multigroup Structural Equation Modeling, which were conducted on a Peruvian sample ($n = 1494$, 72.2% females) and a Brazilian sample ($n = 1507$; 84.0% females). The results indicate that the variables *caring of younger siblings* and *family adaptation* are statistically significant predictors of PCM in both countries, while the variable number of siblings did not emerge as a predictor in either case. Family autonomy emerged as a predictor only in Brazil, and birth order only in Peru. Multigroup analysis shows that the difference in the effects of "family adaptation" and "family autonomy" on PCM is moderated by the country of origin. In summary, this study provides empirical evidence that family variables predict PCM and highlights the moderating effect of the country of origin in the analyzed samples.

Keywords

Motivation; family relations; childhood experiences; family planning; reproductive health

Resumen

En este estudio se analizan las experiencias de la infancia y la relación con la familia de origen como variables predictivas de la motivación para la parentalidad positiva (MPP). El estudio se llevó a cabo mediante análisis de Modelaje de Ecuaciones Estructurales Multigrupo como método, aplicándolo en una muestra peruana ($n = 1494$, 72.2% mujeres) y una brasileña ($n = 1507$; 84.0% mujeres). Los resultados evidencian que las variables *cuidado de hermanos menores* y *adaptación familiar* son predictores estadísticamente significativos de la MPP en ambos países, mientras que la variable *número de hermanos* no se presentó como predictor en ninguno de los casos. La autonomía familiar se mostró como un predictor solo en el caso de Brasil y el orden de nacimiento solo en Perú. El análisis multigrupo muestra que la diferencia en los efectos de la adaptación familiar y la autonomía familiar en la MPP está moderada por el país de origen. En resumen, este estudio proporciona evidencia empírica de que variables familiares predicen la MPP y destaca el efecto moderador del país de origen en las muestras analizadas.

Palabras clave

Motivación; relaciones familiares; experiencias infantiles; planificación familiar; salud reproductiva

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Introduction

The Traits-Desires-Intentions-Behavior (TDIB) model, proposed by reproductive behavior researcher Warren Miller, defines childbearing motivations (CM) as dispositions to react favorably (Positive Childbearing Motivation - PCM) or unfavorably (Negative Childbearing Motivation - NCM) to various aspects of parenting (Miller, 1994, 2021). CMs would be the initial component of a complex and integrative model that explains reproductive decision-making and encompasses biological, evolutionary, and psychological perspectives (Miller, 1994; 2011a; 2021).

According to the author, CMs have a biological basis that disposes individuals to respond to infants and children with affection, attachment, and care, which interacts with experiences during childhood, adolescence, and early adulthood (Miller, 1992, 1994, 1995, 2011b, 2021). Regarding childhood experiences, Miller (1992) proposed that the transmission of a family-centered value system, often associated with traditional religious values and identification with parental roles resulting from relationships with one or both parents, would facilitate the development of PCMs. Later, during adolescence with exposure to childcare, the individual may acquire positive skills and experiences or learn that such activities are not particularly satisfying (Miller, 1992).

Despite the fact that there are various studies that relate the TDIB model to various variables such as politics (Liu et al., 2023), fatal diseases (Buber-Ennser et al., 2023; Djiometio et al., 2019; Guo et al., 2022), race (Alexander et al., 2021), couple relationship (Barber et al., 2019), among others; empirical evidence of family of origin characteristics as predictors of CM in the national and international literature is scarce (Rich et al., 2021; Varas & Borsa, 2021).

Gerson (1980, 1983, 1984, 1986), assessed the impact on CM of perceived parental attention, parental identification, and happiness of family life in childhood and the results indicated that CMs are correlated with the aforementioned variables. Miller's original study, conducted in the United States of America (USA), found personality and life experiences as predictive variables of CM, with differences in the impact of these variables according to the gender of the participants (Miller, 1992). Following Miller's (1992) study, Chasiotis et al. (2014) investigated the effect of the variables number of siblings and parents' socioeconomic status on implicit childbearing motivation in four cultural samples: Cameroon, China, Germany, and Costa Rica. The results showed that the number of siblings and parents' socioeconomic status explained between 64% and 82% of the cultural variation in childbearing motivation.

Studies on the impact of having siblings as well as birth order on reproductive decisions were conducted by Morosow & Kolk (2020), Ahmed et al. (2022) and Rezamahalleh et al. (2020). On the other side, Varas and Borsa (2020b, 2021) investigated sociodemographic variables, family information, personal characteristics, and relationship with the partner as predictor variables of PCM in a sample from Peru and Brazil. The results of the analysis of group differences showed that participants who cared for younger siblings had higher levels of PCM than those who did not have this experience and that, according to birth order, participants had different levels of NCM and PCM. On the other hand, the variables number of siblings and birth order showed positive, small, and statistically significant correlations with PCM and negative, small, and significant correlations with NCM. Of the three variables, only sibling care was presented as a predictor variable for NCM, while birth order and younger sibling care were presented as predictor variables for NCM. In the study conducted in Brazil, family support and family adaptation were found to have small positive correlations with PCM and negative correlations with NCM and, of these, only consistent affective was shown to be a predictor variable of NCM.

Although Brazil and Peru share similarities in socioeconomic inequalities (Gonzaga & Aras, 2015; Zarzalejos & Fernández, 2018), reproductive age, and the implementation of limiting reproductive programs and policies that hinder the achievement of reproductive objectives for various segments of the population (Jiménez et al., 2011), as well as a preference for small families (with Brazil's Global Fertility Rate being 1.7 and Peru's being 2.3) (World Bank, 2023a), the two countries also exhibit some differences. Peru has displayed improvements in various socioeconomic indicators as it has shown more favorable traits than Brazil in terms of unemployment rate reduction and a decrease of 14 points in its Gini index over the past 20 years. In contrast, Brazil has 53 points in both 1990 and 2020, and it

has witnessed concerning increases in these indicators between these two years (World Bank, 2023b). On the other hand, Peru and Brazil differ in their General Fertility Rates with Peru being 2.5 (higher than the Population Replacement Rate), while Brazil is at 1.8 (lower than the Population Replacement Rate). Additionally, Peru's birth rate (18.8) is higher than Brazil's (13.9), resulting in a larger percentage of the population being under 15 years of age (25.1% in Peru versus 19.6% in Brazil) (Zarzalejos & Fernández, 2018).

Given the differences and similarities between the two countries and the scarcity of empirical research that confirms or disproves the relationship between family of origin characteristics and PCM (Varas & Borsa, 2019), this study aims to examine the correlation between variables related to family of origin characteristics and PCM among Brazilians and Peruvians. Furthermore, it aims to identify whether their performance as predictor variables is affected by their membership in one population group or the other. The study examined the relationship between belonging to a large family and the prediction of PCM by testing the number of siblings and birth order as variables.

An additional variable analyzed was having (or not having) taken care of younger siblings in childhood or adolescence, in an attempt to access information related to the exposure to childcare proposed by Miller as a motivational background (Miller, 1992). Lastly, family adaptation and autonomy were examined as potential predictors of PCM.

The study predicts a positive and significant association between the number of siblings, birth order, and having cared (or not) for younger siblings with PCM. This can be attributed to the opportunities of living with and acquiring care experiences from younger siblings (Ahmed et al., 2022; Chasiotis et al., 2014; Miller, 1992; Morosow & Kolk., 2020; Rezamahalleh et al., 2020). Moreover, the variable family adaptation is expected to have a positive association, while the variable family autonomy is expected to have a negative association with PCM. The coefficients are anticipated to exhibit marginal differences across countries.

Method

Study design
The non-experimental or observational, analytical, and cross-sectional study design was utilized to conduct this study to collect the data from individual respondents. The study is analytical as the aim is to examine the association between the variables (Creswell & Creswell, 2017). This study was done using quantitative data.

Participants
The samples were chosen by convenience. The inclusion criteria to participate in this study were: for the participants to be Peruvian or Brazilian, that they be of legal age, and that they agreed to participate in the study by signing the Free and Informed Consent Term (FICT). Minors, people with a different nationality than the one specified or who refused to sign the TCLE were excluded. The total sample of the study was composed of 3,001 individuals: 1494 Peruvians [n = 1080 (72.2%) women; n = 414 (27.7%) men; (x^2(1) = 296.89; p < .01)] and 1507 Brazilians [n = 1266 (84%) women; n = 241 (16%) men; (x^2(1) = 697.16; p < .01)]. The Peruvian sample residing in 22 departments of Peru, with the majority living in Cajamarca (n = 497; 39.9%) and Lima (n = 353; 23.6%). The age of the participants ranged from 18 to 70 years (M = 24.42; SD = 5.9). Most had college education not completed (n = 911; 60.9%), were in a romantic relationship (n = 904; 62.8%), had no children (n = 1303; 87.19%), had a monthly family income of less than two minimum wages (n = 815; 54.5%), and did not care for younger siblings in childhood or adolescence (n = 845; 56.5%); 50.6% of participants reported being in the labor market (n = 757). The most commonly reported birth order was second (n = 498; 33.3%) and third (n = 320; 21.4%). The average number of siblings in the sample is 2.37 (SD = 1.34).

In the Brazilian sample, data were collected from residents of 25 states of the country. The states with the largest number of participants were Rio de Janeiro (n = 521; 34.6%) and São Paulo (n = 329; 21.8%). The age of the Brazilian participants ranged from 18 to 68 years (M = 29.63; SD = 6.27); most had no children (n = 1361; 90.3%), were in the labor market (n = 1075; 71.3%), had some type of romantic relationship (n =

1344; 89.28%), and did not care for younger siblings during childhood or adolescence (*n* = 868; 57.6%). The most reported education levels in the Brazilian sample were complete post-graduate (*n* = 708: 47.0%) and had college education not completed (*n* = 297; 19.7%); the most reported family income was three to five minimum wages (*n* = 471; 31.3%) and more than ten minimum wages (*n* = 392; 26.0%). The most reported birth order was first (*n* = 598; 39.7%) and second (*n* = 459; 30.5%). The average number of siblings in the sample is 2.57 (*SD* = 1.09).

Instruments

Sociodemographic Questionnaire

A collection of sociodemographic information including biological sex, age, place of residence, current family income, education, participation in the labor market, and marital status was gathered. Additionally, data related to family of origin such as the number of siblings, birth order, and experience of caring for younger siblings in adolescence was recorded as well.

Positive Childbearing Motivation (PCM; Miller, 1995)

Consisting of 27 items that provide an overall positive motivation score (PCM) and five categories that describe different positive aspects of having children: 1) pleasures of pregnancy, birth, and childhood; 2) traditional parenting; 3) satisfaction in raising a child; 4) feeling needed and connected; and 5) instrumental values of children.

The process of translation and adaptation of the PCM for Peru and Brazil was developed by Varas and Borsa (2020a, 2020b, 2020c). The authors initially evaluated the factor structure of the Brazilian and Peruvian versions of the PCM through factor analyses in each country. The version adapted for Peru presented adequate adjustments to the data: $\chi^2(319) = 2528$; *p* < .001; *CFI* = 0.96; *TLI* = 0.96; RMSEA = 0.081 and adequate reliability values (ω = 0.923), as well as the version adapted for Brazil: $\chi^2(319) = 3649$; *p* < .001; *CFI* = 0.96; *TLI* = 0.96; RMSEA = 0.08; ω = 0.964.

The authors also performed Confirmatory Factor Analysis Multi-group (CFAMG) to determine the invariance of the PCM measurement in both countries (Varas & Borsa, 2020d) and the results show that the indices ΔCFI, ΔMcDonald's and Δgamma between the configured and metric, metric and scalar, and scalar and residual models present the values required to determine PCM

scale invariance (ΔCFI up to -.01; ΔMcDonald's up to -.002 and Δgamma-hat up to -.01), showing that PCM exhibits strict invariance.

Family Adjustment Scale

A scale which is part of the Family Support Inventory elaborated by Baptista (2005, 2007). It consists of 13 items that assess negative feelings towards the family group such as anger, isolation, exclusion, misunderstanding, among others. The participants answered the questionnaire items thinking about the relationships they had with their family of origin when they were children or adolescents. The scale showed adequate adjustment indexes to the data from the Confirmatory Factor Analysis (CFA) performed for this study: $\chi^2(65) = 646.266$; *p* < .001; *CFI* = 0.92; *TLI* = 0.91; *RMSAE* = 0.085. This scale was adapted, by the authors, for the Peruvian population following the guidelines of the International Test Commission [ITC] (International Test Commission, 2017) and the work of Borsa et al. (2012). The Peruvian adaptation showed adequate fit indices to the CFA data performed for this study: $\chi^2 (65) = 455.663$; *p* < .001; *CFI* = 0.92; *TLI* = 0.91; *RMSEA* = 0.063. For this study, the authors performed CFAMG to determine the invariance of the Family Adjustment Scale measure in both countries, the results of which can be seen in Table 1.

Family Autonomy Scale

A scale that is part of the Family Support Inventory elaborated by Baptista (2005; 2007). It is composed of eight items that assess the relationships of trust, freedom, and privacy among family members. The participants answered the questionnaire items thinking about the relationships they had with their family of origin when they were children or adolescents. The scale showed adequate fit indices to the CFA data of this study: $\chi^2 (20) = 144.121$; *p* < .001; *CFI* = 0.97; *TLI* = 0.96; *RMSEA* = 0.064. This scale was adapted for the Peruvian population by the authors following the guidelines of the International Testing Commission (ITC, 2017) and the work of Borsa et al. (2012) and showed adequate rates of adjustment to the data in the CFA performed: $\chi^2(20) = 123.707$; *p* < .001; *CFI* = 0.95; *TLI* = 0.94; *RMSEA* = 0.059. For this study, the authors performed CFAMG to determine the invariance of the Family Autonomy Scale measure in the two countries and the results can also be seen in Table 1.

Table 1. Adjustment indices for the assessment of the family adaptation and autonomy scales

Scale	Model	χ^2			CFI	ΔCFI	Mc	ΔMc	Gamma	Δgamma
		χ^2	df	p						
FADS	Configural	1198.02	130	.0000	0.969		0.843		0.073	---
	Metric	1573.01	142	.0000	0.958	-0.011	0.794	-0.049	0.931	0.859
	Scale	1418.88	154	.0000	0.963	0.005	0.811	0.016	0.939	0.008
FAS	Configural	389.362	40	.0000	0.979	----	0.944	-----	0.972	----
	Metric	539.772	47	.0000	0.971	-0.008	0.921	-0.022	0.961	-0.011
	Scale	1004.871	54	.0000	0.944	-0.027	0.854	-0.068	0.927	-0.034

Note. FADS = Family Adjustment Scale; FAS = Family Autonomy Scale; df = degrees of freedom; χ^2 = chi-square; df = degrees of freedom; CFI = comparative fix index; Mc = McDonald's Mc; Gamma = Gamma Hat; Δ = difference in fit from the most restricted to the less restricted.

Ethical Procedures and Data Collection

Ethical procedures were guaranteed in accordance with Resolutions No. 510/2016 and 466/2012 of the National Health Council of Brazil and the Declaration of Helsinki (1964/2013) (World Medical Association, 2013). The Ethics and Research Committee of the Pontifical Catholic University of Rio de Janeiro (PUC-Rio) (Protocol No. 68/2018) and the Center for Philosophy and Human Sciences of the Federal University of Rio de Janeiro (UFRJ) (CAEE No. 03490118.8.0000.5582) approved this study. Data collection was conducted online and in person in the Peruvian and Brazilian samples. For online collection, the Survey Monkey tool was used and the questionnaire link was sent by email and published on social media between December 2018 and July 2019, with the FICT located on the first page of the questionnaire. The face-to-face collection was conducted in Peruvian universities between March and April 2019. A brief introduction was given to the participants about the construct being investigated and the terms that make up the ethical guidelines for, later, the people who agreed to participate to sign the FICT and answer the questionnaire.

Statistical Analysis

In order to determine the reference model for Brazil and Peru, which had as independent variables the number of siblings, birth order, care of younger siblings in childhood or adolescence, family adjustment and family autonomy and as dependent variable the PCM adjusted for the data, as well as the estimated path coefficients, a Structural Equation Modeling (SEM) analysis was performed for each country separately.

Subsequently, in order to determine whether the possible differences in the regression coefficients were due (or not) to belonging to one country or another, Multi-group Structural Equation Modeling (MGSEM) was performed. According to Wang and Wang (2019), this analysis was performed in steps. Initially, a configurational multi-group SEM model was estimated, which would serve as the base model for subsequent model comparisons. Subsequently, a more restrictive model was analyzed, with equality restrictions on all effects tested previously, which would be compared with the base model. And finally, an individual analysis of each relationship was performed, constraining each parameter separately to get a more specific picture of the variance of each variable's effect on PCM. These comparisons between the models were performed using the x^2 difference test where *p*-values less than .05 indicated that the differences found were moderate for belonging to one or the other group.

In both SEM and MGSEM analyses, the WLSMV estimator was used (Wang & Wang, 2019). The fit of the models was evaluated from the CFI, TLI, and RMSAE indices. CFI and TLI values should be above 0.90 and RMSAE values, below 0.08 (Brown, 2015). Data was analyzed using the Mplus program, version 7.11.

Results

Initially, correlation analyses were performed between the variables: family autonomy, family adaptation, and number of siblings to evaluate a possible covariation effect between these predictor variables. The result showed that there was only a statistically significant correlation between the variables family autonomy and family adaptation, but that the relationship was moderate (r = -0.386; p < .001). This finding is theoretically expected since both variables are part of the family support scale, and considering that the correlation effect is not strong, it is concluded that both variables will be considered as independent predictors of PCM.

To determine the predictor variables chosen in the PCM in each country, two Structural Equation Model (SEM) analyzes were performed. Table 2 shows that the model presented obtained adequate fit indices in both countries.

**Table 2.** Adjustment index of structural equation modeling analysis

Model	Adjustment Adequacy Ratios				
	χ2(df)	χ2/df	RMSAE (95% C.I)	CFI	TLI
Initial Model Brazil	5252.496(1207)	4.35	0.049 (0.048-0.050)	0.952	0.950
Initial Model Peru	3985.619(1207)	8.30	0.040 (0.039-0.042)	0.975	0.974
Multi-Group Model basic configurational	9493.766(2528)	3.75	0.045 (0.044-0.046)	0.966	0.966

Note. Observation. PCM = Positive Childbearing Motivation; χ^2 = chi-square; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis Index; RMSAE = Root Mean Square approximation error; C.I = confidence interval.

Figure 1 shows the effects of each variable on PCM separated by country. The variables caring for younger siblings and family adaptation were found to have a significant association in both countries. In both Peru and Brazil, the family adaptation variable had a negative association (-0.194; p < .001 in Brazil and -0.089; p < .001 in Peru). The variable sibling care showed different loadings, being positive for Brazil (0.097; p < .001) and negative for Peru (-0.060; p < .001). The variable number of siblings did not show a significant association in any country. On the other hand, family autonomy showed a significant positive association only in Brazil (0.122; p < .001), while birth order showed a significant positive association only in Peru (0.085; p < .001).

Figure 1. Association of the variables: number of siblings; birth order; sibling care; family adjustment and family autonomy on overall positive childbearing motivations
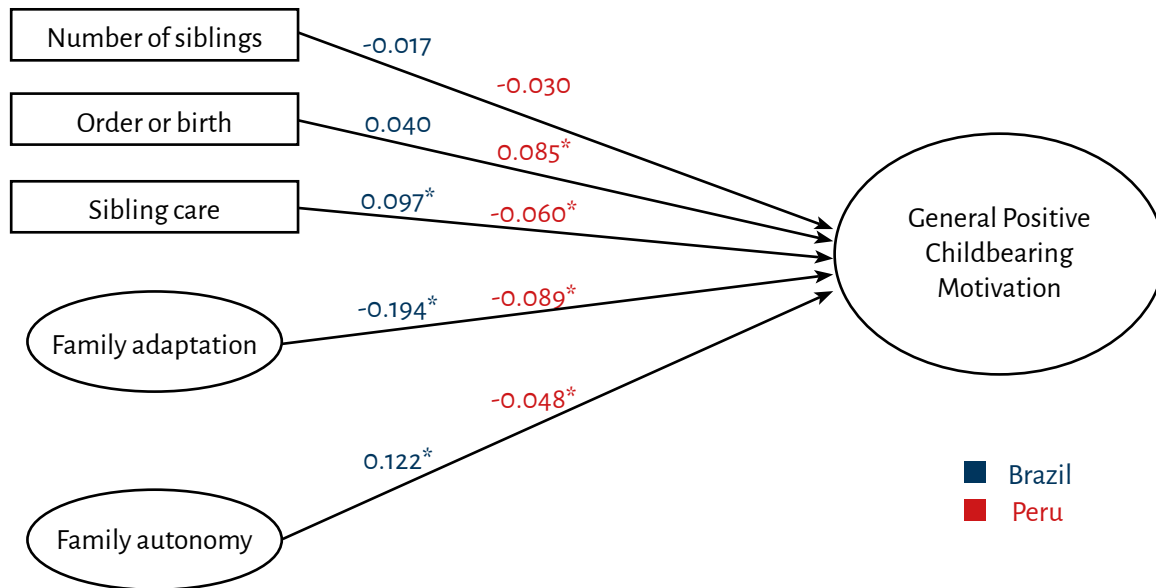
Note.   * = $p > 0.05$.

With these preliminary analyses, it was shown that the benchmark SEM model of Brazil and Peru fit the data, but the estimated path coefficients show minor differences between the two models. Therefore, as directed by Wang and Wang (2019), we went on to assess whether the variance in the structural path coefficients would imply that belonging to the population moderates the causal relationships between them. To do this, a configurational multi-group SEM model was estimated that would serve as a base model for further model comparisons (Wang & Wang, 2019). The fit indices of this base model were adequate, as can be seen in Table 2.

In the second step, a more restrictive model was analyzed, which would be compared to the base model. In this model, equality restrictions were imposed on all effects tested previously. The results of the x2 difference test were: x2 = 115.767; df = 9; $p < .001$, indicating that the effect, as a whole, of the variables number of siblings, birth order, care of younger siblings, family adaptation, and family autonomy on PCM, did not remain unchanged between the Brazilian and Peruvian sample. Statistically speaking, belonging to the population would significantly moderate the effects tested when restrictions are set on all variables at the same time.

Subsequently, to get a more specific view of the variance of the effect of each variable on PCM, an individual analysis of each relationship was performed by constraining each parameter separately. The results of the x2 difference test were: number of siblings (x^2 = 1.804; df = 1; p = .179); birth order (x^2 = 3.269; df = 1; p = .071); caring for younger siblings in adolescence (x2 = 4.816; df = 1; p = .028); family adjustment (x^2 = 15.934; df = 1, $p < .001$) and family autonomy (x^2 = 18.886; df = 1; $p < .001$). With these results, it is concluded that the difference between the effects of the variables family adaptation and family autonomy, on PCMs, is moderated by belonging to one or the other group. On the other hand, the differences found in the prediction of the variables number of siblings, birth order, and care of younger siblings are not moderated according to the group to which they belong.

Discussion

The results of this study show empirical evidence of family origin characteristics as predictors of PCM. These results are consistent with the hypothesis that PCM are influenced by background in childhood and adolescence, previously found in several studies (Chasiotis et al., 2014; Gerson, 1980, 1983, 1984, 1986; Miller, 1992).

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An attempt was made to test whether the variables birth order, number of siblings, and care of younger siblings predicted PCM, considering what Chasiotis et al. (2006) proposed: that interactive experiences with siblings should be considered an important factor for sibling-parent motivation, suggesting that the presence of younger siblings triggers pro-social motivations, parenting behavior, and caregiving. On the other hand, Miller (1992) described that the experience of growing up within a large family favored the transmission of family-centered values, enhancing the development of positive dispositions to have children (Miller, 1992).

The results of this study partially corroborate what was theoretically expected, since the variable number of siblings did not show significant association with PCM in any country; the birth order variable did not show statistically significant association in Peru and the variable care of younger siblings showed significant association in both countries. When considering the preference for small families in both countries (the Global Fertility Rate in Brazil is 1.7 and in Peru is 2.3) (World Bank, 2023a) and the fact that CMs are greatly influenced by social norms and trends (Miller et al., 2013; Miller, 2015), we hypothesized the possibility that the tendency to establish families with few children today may prevail over experiences of living in large families and justify the absence of association on the latter in the CM.

The birth order variable had a significant association with PCM in Peru, but contrary to the expected results. While there was a significant association between the birth order variable and Procreative Career Motivation (PCM) in Peru, the observed trend contradicted the anticipated hypothesis. Instead of finding higher levels of PCM among individuals occupying the first positions in the birth order, the results suggested a different pattern.

The initial assumption, which posited that being in the first-born position would lead to increased PCM due to the opportunity to live with younger siblings, was not supported by the data (Chasiotis et al., 2014; Miller, 1992). The variable caring for younger siblings showed significant association in both countries, in line with what was theoretically expected, but with different burdens. According to the results, the Peruvian sample shows higher levels of PCM in people who cared for their younger siblings, while the Brazilian sample shows higher levels of PCM in people who did not care for their younger siblings. On the other hand, the multi-group analysis shows that these differences are not justified by a bias related to the country from which the sample was collected, which would make it difficult to maintain the hypothesis that this is due to characteristics derived from the nationality of the respondent.

These results can be discussed in light of the fact that while the initial hypothesis justified that caring and living with younger siblings could promote PCM, it also describes that this experience must be rewarding, otherwise, the opposite effect could occur (Miller 1993). According to the theory, sibling caregiving can serve as an enhancer or inhibitor of positive childbearing motivations by weighting the positive or negative evaluation of that caregiving (Chasiotis et al., 2014; Miller, 1992). Rewarding experiences in caring for younger siblings in childhood or adolescence would generate the desire to relive these experiences in adulthood through their own children, whereas unpleasant experiences would have the opposite effect (Miller, 1992).

The hypothesis of this study is that the opposite relationship to what is theoretically expected of the birth order variable in the Peruvian sample and the opposite loadings between the two countries may be due to the fact that the experiences of satisfaction and dissatisfaction with this care may be different. It is emphasized that this hypothesis should be further contrasted with studies that control for this variable so that it can be refuted or corroborated.

The variables family adjustment and family autonomy were chosen to see if individuals' relationship with their family of origin predicted PCM. The theoretically expected hypothesis that positive family origin characteristics predict the development of PCM (Gerson, 1980, 1983, 1984; Miller, 1992) was partially confirmed.

The variable family adaptation presented a negative association in both countries with a higher index in Brazil than in Peru, and the multi-group analysis showed that this difference is related to the characteristics of the country where the sample was collected. The negative association found is justified considering that the scale is composed of 13 items that assess negative feelings without relation to the family group, such as anger, isolation, exclusion, misunderstanding, etc., therefore, a higher score on these items would mean lower levels of family adaptation (Baptista, 2009; Baptista & Campos, 2015). The lack of family adjustment is linked to feelings of misunderstanding and not belonging to the family group, suggesting aggressiveness between members, isolation, and negative feelings towards the family such as anger and shame (Baptista, 2009). These experiences would generate a negative association on CMs, while the lack of them would point to a more positive perception of parenting, which corroborates the hypothesis that welcoming and friendly family environments generate a more positive view towards parenting than those that are hostile and aggressive (Miller, 1992).

The family autonomy variable showed a significant positive association only in Brazil, which is in line with what is theoretically expected. This variable reflects the relationships of trust, freedom, and privacy among family members necessary for a harmonious coexistence (Baptista, 2009), pointed out by the theory as a requirement for the development of positive childbearing motivations (Miller & Pasta, 1993). When considering that participants were asked to respond about their relationship with their family of origin, regardless of whether they lived with them or not, differences in the profiles of the samples could explain the differences found. The Peruvian sample presents a profile with characteristics that show a greater dependence on the family of origin (participants mostly younger, attending university, without a stable job) (Mattos & Castro, 2016), while the Brazilian sample shows a profile with greater autonomy (people mostly with post-graduate education, older than the Peruvian sample and inserted in the labor market) (Mattos & Castro, 2016). When considering that the respondents are young people and adults, the perception of family autonomy will depend on the degree of economic, emotional, or physical independence with the family of origin (Ballesteros & Sanmartín, 2017), a situation that is still in the process of development by Peruvian participants, which could explain the absence of association of this variable on

the PCM. It is necessary to point out that this is only a hypothesis that, with the help of future research in both countries and more diverse samples, could be corroborated or refuted.

Although the regression coefficients found were small, this evidence becomes important because it empirically analyzes the influence of experiences with the family of origin on PCM, which has already been theorized (Chasioti et al., 2014; Gerson, 1980, 1983, 1984, 1986; Miller, 1992), but hardly tested (Varas & Borsa, 2019).

Final considerations

This research provides the first scientific evidence of experiences with family of origin as antecedents of CM in two Latin American countries. Although this relationship was formulated in Miller's original model, few studies have focused their efforts on seeking such a relationship. Although the results show a reduced association, these findings open the way for future research, with different variables, that assesses early experiences with the family of origin, aiming at a significant knowledge of the antecedents of CM and the reproductive decision-making process in Latin America. It also provides evidence that these relationships should be analyzed, considering the context in which the sample is embedded, for a deeper understanding of these relationships.

Regarding the limitations of this study, it is reported that the samples were chosen by convenience and not at random, as well as predominantly female and not homogeneous in their sociodemographic characteristics. Both limitations may prevent the generalization of the results. Studies with more diverse samples are recommended to help refute or corroborate the differences found between the two countries to determine whether the differences found between the countries are expressions of the analyzed phenomenon or sample biases. On the other hand, the scarcity of studies on the subject in Latin America made it difficult to discuss the data in light of the literature.

It is also important to highlight as a limitation of the study that current sociodemographic aspects were not considered as control variables in the model, such as sex of the participant, possible gestational status, number of children, age, presence of grandchildren, etc., which could be considered as influential variables in the motivations for parenthood, and it is recommended that future researchers include new variables.

The findings of the present study may help clinicians and health care professionals that assist couples in their reproductive decision-making understand the factors that predict motivations to have children and thus help its users to reflect on and discuss their motivations for having children. On the other hand, the discovery of this type of dynamics between the motivation between having children, aspects related to family of origin, and childhood experiences adds richness to the TDIB model and can lead to a new level of hypothesis generation, testing, and further refinement. Future research on the transition to parenthood and fertility timing should examine models of parenting as well as broader notions of life course planning and how individuals consider multiple domains when making fertility decisions. Finally, the results can be used to inform future educational and health interventions to increase awareness of how childhood and adolescent experiences predict adult reproductive decisions.

References

Ahmed, G. S., Saleh, L., Alareed, H. R., El-Shabrawy, E. M., & Elbahrawe, R. S. (2022). Effects of sociodemographic background on fertility motivation patterns in the Beni-Suef governorate, Upper Egypt. *Journal of Taibah University Medical Sciences*, 17(5), 853-860. https://doi.org/10.1016/j.jtumed.2022.04.006

Alexander, K. A., Arrington Sanders, R., Grace, K. T., Thorpe, R. J., Doro, E., & Bowleg, L. (2021). "Having a child meant I had a real life": Reproductive coercion and childbearing motivations among young Black men living in Baltimore. *Journal of interpersonal violence*, 36(17-18), NP9197-NP9225. https://doi.org/10.1177/0886260519853400

Ballesteros, J. C., & Sanmartín, A. (2017). Emancipación en tiempos de crisis. *Revista de Estudios de Juventud*, (116), Document 10, 143-154. https://www.injuve.es/observatorio/formacion-empleo-y-vivienda/revista-de-estudios-de- juventud-116-jovenes-y-vivienda

Baptista, M. M. (2009). *Estudos culturais: o quê e o como da investigação. Carnets. Revue électronique d'études psychologiques de l'APEF, Première Série* (1 Special Number), 451-461. https://doi.org/10.4000/carnets.4382

Baptista, M. N. (2005). Desenvolvimento do Inventario de Percepção de Suporte Familiar (IPSF): estudos psicométricos preliminares. *PsicoUSF*, 10(1), 11-19. https://doi.org/10.1590/S1413-82712005000100003

Baptista, M. N. (2007). Inventario de Percepção de Suporte Familiar (IPSF): estudo componencial em duas configurações. *Psicologia ciência e profissão*, 27(3), 496-509. https://doi.org/10.1590/S1414-98932007000300010

Baptista, M. N., & Campos, D. C. D. (2015). Metodologias de pesquisa em ciências. Análises quantitativa e qualitativa. In M. N. Baptista & D. C. D. Campos, *Metodologias de Pesquisa em Ciências: análises Quantitativa e Qualitativa* (pp. 299-299). LTC. Comunicação Edición.

Barber, J. S., Miller, W., Kusunoki, Y., Hayford, S. R., & Guzzo, K. B. (2019). Intimate relationship dynamics and changing desire for pregnancy among young women. *Perspectives on Sexual and Reproductive Health*, 51(3), 143-152. https://doi.org/10.1363/psrh.12119

Borsa, J. C., Damásio, B. F., & Bandeira, D. R. (2012). Adaptação e validação de instrumentos psicológicos entre culturas: algumas considerações. *Paidéia (Ribeirão Preto)*, 22(53), 423-432. https://doi.org/10.1590/S0103-863X2012000300014

Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (2nd ed.). Guilford publications.

Buber-Ennser, I., Setz, I., & Riederer, B. (2023). Not Even a Pandemic Makes Them Change Their Family Plans: The Impact of COVID-19 on Fertility Intentions in Austria [Special Issue]. *Population and Development Review*. https://doi.org/10.1111/padr.12555

Chasiotis, A., Bender, M., & Hofer, J. (2014). Childhood context explains cultural variance in implicit parenting motivation: Results from two studies with six samples from Cameroon, Costa Rica, Germany, and PR China. *Evolutionary Psychology*, 12(2), https://doi.org/10.1177/147470491401200203

Chasiotis, A., Hofer, J., & Campos, D. (2006). When does liking children lead to parenthood? Younger siblings, implicit prosocial power motivation, and explicit love for children predict parenthood across cultures. *Journal of Cultural and Evolutionary Psychology*, 4(2), 95-123. https://doi.org/10.1556/jcep.4.2006.2.2

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th Edition). Sage publications.

Djiometio, J. N., Antoniou, T., Kristman, V., Schiff, R., Gamble, M., Kennedy, L., Yudin, M., & Loutfy, M. (2019). Understanding the fertility desires and intentions among HIV-positive men living in Ontario: survey instrument development and validation. *Journal of the International Association of Providers of AIDS Care (JIAPAC)*, 18. https://doi.org/10.1177/2325958219831018

Gerson, M. J. (1980). The lure of Motherhood. *Psychology of Women Quarterly, 5*(2), 207-218. https://doi.org/10.1111/j.1471-6402.1980.tb00957.x

Gerson, M. J. (1983). A scale of motivation for parenthood: The index of parenthood motivation. *The Journal of Psychology, 113*(2), 211-220. https://doi.org/10.1080/00223980.1983.9923577

Gerson, M. J. (1984). Feminism and the wish for a child. *Sex roles, 11*(5-6), 389-399. https://doi.org/10.1007/BF00287467

Gerson, M. J. (1986). The prospect of parenthood for women and men. *Psychology of Women Quarterly, 10*(1), 49-62. https://doi.org/10.1111/j.1471-6402.1986.tb00736.x

Gonzaga, P. R., & Aras, L. M. (2015). Mulheres Latino-Americanas e a Luta por Direitos Reprodutivos: o panorama da conjuntura política e legal do aborto nos países da América Latina. *Revista de Estudos e Pesquisas sobre as Américas, 9*(2). https://periodicos.unb.br/index.php/repam/article/view/16040

Guo, Y., Wichaidit, W., Du, Y., Liu, J., & Chongsuvivatwong, V. (2022). Mediation of the association between stigma and HIV status and fertility intention by fertility desire among heterosexual couples living with HIV in Kunming, China. *Plos one, 17*(12), Article e0278244. https://doi.org/10.1371/journal.pone.0278244

International Test Commission. (2017). *The ITC guidelines for translating and adapting tests* (second edition). International Test Commission. https://www.intestcom.org/files/guideline_test_adaptation_2ed.pdf

Jiménez, M. A. Aliaga, L. & Rodriguez, V. J. (2011). *Una mirada desde América Latina y el Caribe al Objetivo de Desarrollo del Milenio de acceso universal a la salud reproductiva*. United Nations Fund for Population Activities. https://www.cepal.org/es/publicaciones/7132-mirada-america-latina-caribe-al-objetivo-desarrollo-milenio-acceso-universal-la

Liu, C., Rahman, M. N. A., Mao, Y., Wang, X., & Yu, X. (2023). Fertility Desire of Chinese Parents to Have More Children Under the Three-Child Policy. *Journal of Population and Social Studies* [JPSS], *31*, 455-481. https://so03.tci-thaijo.org/index.php/jpss/article/view/262464

Mattos, A. R., & Castro, L. R. D. (2016). Jovens e a liberdade: reflexões sobre autonomia, responsabilidade e independência. *Psicologia y Sociedade, 28*(1), 65-73. https://doi.org/10.1590/1807-03102015v28n1p065

Miller, W. B. (1992). Personality traits and developmental experiences as antecedents of childbearing motivation. *Demography, 29*(2), 265-285. https://doi.org/10.2307/2061731

Miller, W. B. (1994). Childbearing motivations, desires, and intentions: A theoretical framework. *Genetic, Social, and General Psychology Monographs, 120*(2), 223- 258. https://psycnet.apa.org/record/1994-40830-001

Miller, W. B. (1995). Childbearing motivation and its measurement. *Journal of Biosocial Science, 27*(4), 473-487. https://doi.org/10.1017/S0021932000023087

Miller, W. B. (2011a). Comparing the TPB and the TDIB framework. *Vienna yearbook of population research, 9*, 19-29. https://www.jstor.org/stable/41342799

Miller, W. B. (2011b). Differences between fertility desires and intentions: Implications for theory, research and policy. *Vienna Yearbook of Population Research, 9*, 75-98. https://www.jstor.org/stable/41342806

Miller, W. B. (2015). *Childbearing motivation: Some puzzles, some solutions, and some new questions* [Conference Presentation]. 43rd Annual Psychosocial Workshop, April 28-29. San Diego, CA.

Miller, W. B. (2021). *Childbearing motivation and the TDIB framework: Research across the life course informs theory development* [Preprint]. ResearchGate. https://doi.org/10.13140/RG.2.2.33290.80326

Miller, W. B., & Pasta, D. J. (1993). Motivational and nonmotivational determinants of child-number desires. *Population and Environment, 15*(2), 113-138. https://doi.org/10.1007/BF02209405

Miller, W. B., Barber, J. S., & Gatny, H. H. (2013). The effects of ambivalent fertility desires on pregnancy risk in young women in the USA. *Population studies, 67*(1), 25-38. https://doi.org/10.1080/00324728.2012.738823

Morosow, K., & Kolk, M. (2020). How does birth order and number of siblings affect fertility? A within-family comparison using Swedish register data. *European Journal of Population, 36*(2), 197-233. https://doi.org/10.1007/s10680-019-09525-0

Rezamahalleh, F. A., Khadivzadeh, T., & Nekah, M. A. (2020). Comparing the Childbearing Motivations of Fertile and Infertile Women in Mashhad, Iran. *Journal of Midwifery & Reproductive Health, 8*(4), 2429-2436. https://doi.org/10.22038/jmrh.2019.28904.1312

Rich, S., Haintz, G. L., McKenzie, H., & Graham, M. (2021). Factors that Shape Women's Reproductive Decision-Making: A Scoping Review. *Journal of Research in Gender Studies, 11*(2), 9-31. https://www.ceeol.com/search/article-detail?id=1013489

Varas, G. V., & Borsa, J. C. (2019). Revisión Sistemática del Estudio de las Motivaciones para la Parentalidad. *Estudos e Pesquisas em Psicologia, 19*(1), 261-283. https://doi.org/10.12957/e2019.43019

Varas, G. V., & Borsa, J. C. (2020a). Childbearing Motivation Questionnaire: Adaptação e evidencias iniciais de validade para seu uso no Brasil. *Revista Psico, 51*(4), Article e36089. https://revistaseletronicas.pucrs.br/ojs/index.php/revistapsico/article/view/36089

Varas, G. V., & Borsa, J. C. (2020b). *Motivaciones para tener y no tener hijos en Perú: variables de influencia en las decisiones reproductivas* [Manuscript submitted for publication].

Varas, G. V., & Borsa, J. C. (2020c). Childbearing Motivation Questionnaire: Adaptación transcultural y evidencias de validez en Perú. Estudos de Psicologia [Manuscript in press]. https://periodicos.puc-campinas.edu.br/estpsi/index

Varas, G. V., & Borsa, J. C. (2020d). *Childbearing Motivation Questionnaire (CBQ): Análise da invariância da medida entre brasileiros e peruanos* [Manuscript submitted for publication].

Varas, G. V., & Borsa, J. C. (2021). Predictor Variables of Childbearing Motivations in Brazilian Women and Men. *Paidéia (Ribeirão Preto), 31*(1), 1-10. https://doi.org/10.1590/1982-4327e3112

Wang, Jichuan, & Xiaoqian Wang. (2019). *Structural equation modeling: Applications using Mplus* (2nd Edition). Wiley.

World Bank (April 1, 2023a). *Fertility rate, total* (births per woman). https://data.worldbank.org/indicator/SP.DYN.TFRT.IN

World Bank (April 1, 2023b). *Índices de Gini.* https://datos.bancomundial.org/indicator/SI.POV.GINI

World Medical Association. (2013). World Medical Association Declaration of Helsinki ethical principles for medical research involving human subjects. *JAMA: Journal of the American Medical Association, 310*(20), 2191–2194. https://doi.org/10.1001/jama.2013.281053

Zarzalejos, J. & Fernández, L. E. (2018). *América Latina en Cifras.* Fundación para el Análisis y los Estudios Sociales. FAES Fundación para el Análisis y los Estudios Sociales. https://fundacionfaes.org/wp-content/uploads/2021/08/20181121114417america-latina-en-cifras.pdf