



ORIGINAL RESEARCH

Welcome (one) more child: perspectives from mothers of large and non-large families

Marta Gonçalves^{1,2} and Rosário Boavida¹

Abstract

Background: In many countries around the world we are currently witnessing a large decrease in the fertility rate. This phenomenon brings several social sustaining problems. Large families (families with three or more children) seem therefore essential on contradicting this tendency. The aim of this study is to explore attitudes towards conception in large (LFM) and non-large families mothers (NLFM).

Methods: We used a quantitative approach (N=210 LFM; 170 NLFM) and we analyzed how the family type relates to variables such as satisfaction with life, religiosity, attitudes towards contraception, and attitudes towards abortion. These variables were accessed in each participant through an online survey.

Results: We found evidence supporting the hypothesis that LFM have higher levels of satisfaction with life and religiosity; they have more negative attitudes towards contraception and abortion. We have also tested the hypotheses of the relationship between family type and attitudes towards contraception and abortion being moderated by the strength of different types of religiosity, finding some supportive data, at least for the attitudes towards contraception.

Conclusion: Although we conclude that additional research on large families and reproductive behavior is needed, this study emphasizes some of the factors that differentiate the specific population that contributes to an increase the fertility rate.

Keywords: Large families, Satisfaction with life, Religiosity, Conception.

¹Lisbon University Institute/ Instituto Universitário de Lisboa (ISCTE-IUL),
Cis-IUL, Lisboa, Portugal

²Harvard Medical School, Cambridge Health Alliance, Cambridge, MA, USA

Citation: Welcome (one) more child: perspectives of mothers from large and non-large families. IJCNMH 2015; 2:2

Received: 12 Jun 2014; Accepted: 18 Nov 2014; Published: 10 Feb 2015

Correspondence: Marta Gonçalves

Instituto Universitário de Lisboa (ISCTE-IUL), Cis-IUL

Avenida das Forças Armadas, 1649-026 Lisboa, Portugal

Email address: marta.goncalves@iscte.pt



Open Access Publication Available at <http://ijcnmh.arc-publishing.org>

© 2015 Gonçalves et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



Introduction

Since the phenomenon known as the Baby Boom after World War II, there have been numerous efforts to control and reduce birth rates [1]. This efforts, though, have evolved into an excessive drop in birth rates. When comparing today's Portuguese total fertility rate with the reality of a few generations ago, we find a drastic reduction in this population indicator. In fact, in 2010 Portugal had a total fertility rate of only 1.37 children per woman [2]. This is an economically unsustainable rate, considering that we need a total fertility rate of 2.1 children per woman to allow the replacement of generations [3]. Portugal is experiencing a serious demographic crisis.

Having the mean number of children in each family decreased, and families where there is still a high fecundity rate—three or more children—are an exception. Given the socio-economic importance of this exception, the present study focus on this type of family—the large families. If large families are an exception to current reproductive behaviors, it is important to understand why. Our analysis focus on the mothers of large families, specifically on the attitudes related to their reproductive behavior.

It is necessary to identify mechanisms and attitudes that are relevant when it comes to fertility decisions involving the beginning of a Large Family, as suggested by Eggen and Rupp cited by Rupp, Beier, Dechant & Haag [4]. The identification of these variables, however, is not intended to promote programs that force birth [5] but only to recognize the demographic value of a large family in a country where there is a shortage of births.

In the literature review we conducted, we have identified as relevant variables for this study "satisfaction with life", "religiosity", "attitudes towards contraception", and "attitudes towards abortion". Considering the current paradigm in Portugal, at least at a medium-high socioeconomic level, we can advance the possibility of a negative correlation between the type of family and attitudes towards contraception [6], but perhaps more due to moral or religious issues than lack/presence of information; the same applies to the attitudes towards abortion [7]. Regarding the influence of religiosity on fertility, having in mind in particular the assumptions of theology and interaction reviewed by Zhang [8], and the doctrinal guidelines concerning reproductive behavior of the Catholic religion, which is the most frequent in Portugal, we decided to explore the role of Religiosity in the three dimensions identified by Koenig and Bussing [9]—Intrinsic, Extrinsic, and Organizational. Furthermore, not intending to build an attitudinal explanatory model of reproductive behavior, we also aim to explore whether attitudes towards contraception and abortion weighed to reach a large fecundity rate, and if this fecundity rate represents greater satisfaction with life, as previously suggested by Angeles [10]. Contradicting Angeles [10] findings, it is more common to find data supporting opposite conclusions, like Beute-

ll and Wittig-Berman [11], who find that the number of children is negatively correlated with family satisfaction. We also find evidence [12] that shows the number of children at home is positively correlated with the inter-role conflict the woman experiences, in couples where the man is strongly work-oriented. However, these two references are older and therefore reflect a family reality more different from the present one, and it is thereby important to explore the relationship between satisfaction with life of a given mother and the number of children she has.

We have four main working hypotheses, which focused on the themes of satisfaction with life, religion, attitudes towards contraception and attitudes towards abortion, being implemented as follows:

Hypothesis 1. Mothers of Large Families present a higher mean level of satisfaction with life than Mothers of Non Large Families.

The second hypothesis will verify relationships between family type and the different types of religiosity:

Hypothesis 2.1. Mothers of Large Families present a higher mean level of organizational religiosity than Mothers of Non Large Families.

Hypothesis 2.2. Mothers of Large Families present a higher mean level of non-organizational religiosity than Mothers of Non Large Families.

Hypothesis 2.3. Mothers of Large Families present a higher mean level of intrinsic religiosity than Mothers of Non Large Families.

In hypothesis 3 we will check how family type relates to attitudes towards contraception and religiosity:

Hypothesis 3.1. Mothers of Large Families have more negative attitudes regarding contraception than Mothers of Non Large Families.

Hypothesis 3.2. The relationship between family type and attitudes towards contraception is moderated by organizational religiosity.

Hypothesis 3.3. The relationship between family type and attitudes towards contraception is moderated by non-organizational religiosity.

Hypothesis 3.4. The relationship between family type and attitudes towards contraception is moderated by intrinsic religiosity.

Finally, the fourth hypothesis will analyze how family type relates to attitudes towards abortion and religiosity:

Hypothesis 4.1. Mothers of Large Families have more negative attitudes in relation to abortion than Mothers of Non Large Families.

Hypothesis 4.2. The relationship between family type and attitudes towards abortion is moderated by organizational religiosity.

Hypothesis 4.3. The relationship between family type and attitudes towards abortion is moderated by non-organizational religiosity.

Hypothesis 4.4. The relationship between family type and attitudes towards abortion is moderated by intrinsic religiosity.

Methods

Sample

To isolate the possible influence of the variables "area of residence" and "marital status", we established that the questionnaire would be made only to mothers resident within the district of Lisbon and married. We anticipate this marital status as the most frequent in women who are mothers and according to Angeles [10], the effect of children on the satisfaction with life is greater if the couple is married. We also established that the questionnaire would be made only to mothers of biological children, since there are variables in study that directly related to conception (such as attitudes towards contraception and attitudes towards abortion).

The sample consists of 380 women with a mean age of 41.07 years old ($SD = 7.560$), being the youngest mother 25 years old and the oldest mother 71 years old. These participants were in average mothers for the first time at 27.40 years ($SD = 3.959$), being the participant who was first mother had her first child at 17 years old, and the latest mother had her first child at age 40.

In this study, 210 participants (55.3%) were Mothers of Large Families and 170 participants (44.7%) were Mothers of Non Large Families. Among Mothers of Large Families, 63.3% had three children, 21.9% had four children, 9% had five children, 2.9% had six children, 1.4% had seven children, and 1.5% had more than seven children (the maximum being 11). Regarding Mothers of Non Large Families, 31.2% had a single child, and 68.8% had two children.

Regarding the country of origin of these participants, the vast majority (98.7%) was Portuguese, two were (0.5%) Brazilian, one was (0.3%) Swedish, one was Guinean and one was Angolan. Regarding religion, 82.6% reported being Catholic, 6.3% from other religions, 7.4% reported having no religion, and 3.7% did not know or did not answer.

When asked about having or not a paying job, 83.4% responded "yes", 12.6% responded "no", and 3.9% responded "part-time". Regarding education, 6.1% had a maximum of 9th grade; 14.8% had completed 12th grade, 64.4% had a bachelor (3 years university) or "licenciatura" (5 years university), 12.1% had a master degree, and 2.6% had a PhD. Considering the household income, 5.9% lived with a maximum of 1000 Euros per month, 22.1% had an income between 1000 and 2000 Euros per month, 30.7% between 2000 and 3000 Euros per month, 22.6% between 3000 to 4000 Euros per month, and finally 18.6% lived with more than 4000 Euros per month. In Table 1 we present a summary of these variables for each family type.

Table 1. Demographics of the participants according to family type.

	Family Type			
	Non Large		Large	
	Mean	%	Mean	%
Age	41.5		40.7	
First time mother	27.9		27.0	
Religion	Catholic		83.9	83.6
	Other		4.8	7.7
	Without religion		10.7	4.8
	Don't know/answer		.6	3.9
Paying job	Yes		88.2	79.5
	No		8.2	16.2
	Part-time		3.5	4.3
Education	9 th grade		10.6	2.4
	12 th grade		17.6	12.4
	3-5 years university		54.7	72.2
	Master		12.4	12.0
	PhD		4.7	1.0
Household income in €	≤ 1000		9.2	3.4
	1000-2000		23.3	21.2
	2000-3000		29.4	31.7
	3000-4000		22.1	23.1
	≥ 4000		16.0	20.7

Instrument

Besides the type of family we studied four other variables. In this section we describe how each of them was operationalized, explaining the selection criteria of each instrument as well as the necessary adaptations for this study.

Satisfaction with Life Scale

The Satisfaction with Life Scale was chosen because it is a small, simple, and widely used scale. It was originally developed by Diener, Emmons, Larsen, and Griffins [13] and has five items, each one with seven response options. It was found in full-size in a study of Seco, Casimiro, Pereira, Dias, and Custódio [14]. According to these authors, this scale was first adapted for the Portuguese population in 1990 by Neto, Barros, and Barros, with a Cronbach's alpha of 0.78. Later in 1992 there was still a second adjustment to the Portuguese population by Simões [14], where items have been given only five response options ranging from 1 - Strongly Disagree to 5 - Strongly Agree. This latest version had a Cronbach's alpha of 0.77. So, being this the version we used, it was not necessary to do any changes to the scale in this study.

Religiosity Scale

To operationalize the variable religiosity, we chose the Religiosity Scale of Moreira-Almeida, Peres, Aloe, Neto, and Koenig [15]. This choice was also based on the criterion of simplicity, being composed of only five items, and having the first two five response options, and the last three six response options. The scale focuses on three different conceptual dimensions: organizational Religiosity (first item); non organizational religiosity (second item), and intrinsic religiosity (last three items). This version [15] is an adaptation to the Brazilian population of the original scale of Koenig, Meador, and Parkerson [16]. According to Koenig, and Bussing [9], in different studies the original version of the scale has a Cronbach's alpha ranging between 0.78 and 0.91. In the present study, this scale was adapted into Portuguese of Portugal through a process of translation and retranslation. The retranslation was made by three Brazilian Psychologists. The comparison between the translation and back translation was conducted by our research team. No significant differences emerged [17].

Attitudes towards Contraception Scale

In order to measure attitudes towards contraception, we consulted the Handbook of Sexuality Related Measures [18]. The Scale to Assess University Women's Attitudes about Contraceptive Acquisition and Use of Fisher [19] was chosen as it also focuses on moral beliefs on the subject, which is a relevant aspect considering the variables under analysis, namely religiosity. As it was originally developed for the university context, the last three items were eliminated because they are only applicable to that context (e.g. "Going to the student health service in order to obtain birth control would be embarrassing"). This

leaves 13 items in a Likert scale of seven values each. However, the meanings of the response extreme vary from item to item (e.g. "good / bad", "wrong / right"). In its original version, it was found a Cronbach's alpha of 0.83 for this scale, which is a good indicator of internal consistency [19]. As the scale was in English, it was translated into Portuguese, and retranslated back into English by an independent person with training in psychology. The items where disagreement arose were analyzed within our research team, to reach inter-judges agreement [17].

Scale of Attitudes towards Abortion

To make attitudes towards abortion measurable, we also consulted the Handbook of Sexuality Related Measures [18]. We chose the Scale of Attitudes towards Abortion of Finlay [20] because it is a simple scale, easy to apply, and with few items. In its original version it contains only one question ("Which of the following circumstances, in your opinion, justify a woman's desire to have an abortion?"), with eight response options of one point each, and a final option of zero points which states "No circumstances ever justify abortion." By completing this scale, participants may select as many answer options as they wish. This version of the scale has a coefficient of reproducibility of 0.9320. Regarding the adaptation of the scale for the Portuguese language, the process was identical to the previous scale. Three changes were necessary: 1) instead of the question asking "what are the circumstances which in your opinion justify the desire of a woman to abort" we ask "what are the circumstances which in your opinion justify the choice of a woman to abort." This because, being this practice currently legal in Portugal until ten weeks of pregnancy, it was considered that it would make sense to ask the question under a behavioral point of view; 2) one of the answer choices referred to problems caused by German measles ("the woman had German measles, and she fears the baby may have been harmed"). However, this was a more common problem in the past (remember that the scale was developed in the 80s). Since this is now a disease that is preventable by vaccine nationally, the response option has been replaced by "the woman suspected that the baby has a disability," as this motive was one of the exceptions in the Portuguese law of 1984 on the subject (line c Article 140 of the Criminal Code, according to the law 6/84 of May 11st); 3) the item "the woman simply does not want another baby now" was removed for three reasons. First, because we felt that this item corresponds to an agreement with any circumstance, i.e. it would act as the other end of the null item. This item corresponds to the acceptance of any circumstance, then tick this option could result in data redundancy. Second, because by reducing the scale to seven accountable options, and by building an index, the minimum and maximum values (one to seven) become homogenized to the scale of Attitudes towards Contraception, thus facilitating the comparison of the two attitudes scales. Finally, we decided to

remove it because it was also one of two items less marked in the development of this scale [20].

After each instrument was adapted, all scales were integrated into a single questionnaire. This questionnaire was administered to five female participants who agreed to collaborate on the pre-test. After this collaboration, each participant was questioned about the ease of interpretation of the questions. No one reported filling or interpretation difficulties but some comments regarding grammar were made concerning some items of the Religiosity Scale [15], in the sense they were still in Portuguese from Brazil. Accordingly, changes were made. It was also noted that in the scale of Attitudes toward Contraception [19] there was no distinction of different contraceptive methods and such a distinction could be relevant. However, as what was sought was to measure the attitudes of mothers in relation to contraceptive behavior in general, and as such a distinction would involve construction of radically new items, we chose not to make changes accordingly. Regarding the scale on Attitudes towards Abortion [20], we pondered yet, based on pretest comments, to distinguish between circumstances where the participant could do an abortion, and circumstances in which the participant believes that it should be legal for another woman to abort. However, for the same reasons given above for the scale of attitudes toward contraception, we chose not to introduce this distinction in the scale.

Procedure

These four instruments, together with the demographic questions, were grouped in a single online questionnaire through Qualtrics software. We tried to order the scales in an order that facilitated the answers, putting first the scales on simpler themes (Satisfaction with Life and Religiosity), and secondly the scales of potentially more controversial issues (Abortion and Contraception). The demographic questions concluded the questionnaire. The questionnaire was available online for three months. Before the participant started to respond, she was confronted with an initial homepage where they were instructed on the questionnaire, thanking participation and informing them of the confidential and anonymous nature of the study, thereby taking into account the ethical standards of the American Psychological Association [21], and the Association of Portuguese Psychologists [22].

Concerning the release of study, this was done initially with the support of the Portuguese Association of Large Families (APFN). APFN is independent of the Portuguese State and political parties and brings together people of various philosophical conceptions. A letter was written to APFN members providing a link to the questionnaire and the inclusion criteria. This letter was sent by APFN to all mothers resident within the district of Lisbon. To get participants of Non Large Families, the questionnaire also circulated through research groups, a scout group, and personal contacts.

At the end, all the data collected in Qualtrics could be directly saved in a SPSS database. All analyzes were performed using the SPSS version 18 (PASW). We analyzed the Cronbach's alpha for the scales of Satisfaction with Life, Attitudes towards Contraception (having been reversed items 1, 7, and 12), and the dimension Intrinsic Religiosity of the Religiosity scale. Subsequently index variables were built on these scales. The scale on Attitudes towards Abortion consisted of only one question with several possible answers. Each response was treated as a dichotomous variable, then analyzing the Cronbach's alpha (PASW calculation for this analysis with dichotomous variables is equivalent to the coefficient of Kuder-Richardson [20]). After these checks to the consistency of each scale and previous recodes, hypotheses 1, 2.1, 2.2, 2.3, 3.1, and 4.1, were analyzed using a Student's *t* test for independent samples, and the groups defined by family type (Large or Non Large). Regarding hypotheses 3.2, 3.3, 3.4, 4.2, 4.3, and 4.4, these were analyzed through moderation via regression. All variables used in these regressions were previously centered, in order to avoid problems of multicollinearity.

Results

Satisfaction with Life

In Table 2 we present the mean value and standard deviation of each item of the scale used [23]. Analyzing the Cronbach's alpha, we obtained a value of 0.856 (which would not increase with the exclusion of any item). As the scale achieved a good result in the measure of internal consistency analyzed, an index was constructed. This index had an average of 4.06 (SD = 0.84), and this average could vary between the values 1 and 5, corresponding 5 to highest satisfaction.

Religiosity

According to the authors of the scale of Religiosity [15], this should not be analyzed by calculating the total score, but analyzing each dimension separately. In order to standardize this scale with the other scales, all items in each dimension were reversed, thus a higher value corresponds to a higher degree of the construct in question (Religiosity). As the first two items defined two different dimensions (Organizational Religiosity and Non Organizational Religiosity), we present in Table 3, the mean and standard deviation for the first two dimensions.

These two items varied between 1 and 6 (the closer to the value 6, the higher the level of religiosity). In Table 4 we can observe mean values for each item in the third dimension (Intrinsic Religiosity). This scale has a Cronbach's alpha of 0.916. If the first item was eliminated, this value would rise to 0.923. However, as 0.916 is already a very good alpha value, we chose not to do so, thus keeping all of the information collected. It was then constructed an index of Intrinsic Religiosity, which scored a mean of 3.72 (SD = 1.18), where 1 corresponds

Table 2. Satisfaction with Life - Mean values for each item.

		SWL1	SWL2	SWL3	SWL4	SWL5
N	Valid	380	380	378	379	379
	Missing	0	0	2	1	1
Mean		3.96	3.84	4.25	4.40	3.87
Standard-Deviation		1.125	1.137	0.948	0.859	1.217

SWL = Satisfaction with Life

to no religiosity and 5 representing the highest level.

Scale of Attitudes towards Contraception

After inversion of the items indicated by Fisher [19], we analyzed the average results of each item, which are presented in Table 5. This scale has a Cronbach's alpha of 0.907, which again indicates a fairly good consistency. This value was slightly higher eliminating the items 7 (0.913) 8 10 (0.908) and 12 (0.914). However, we chose not to do so again, keeping all the information available in the analysis.

These 13 items were then grouped into an index, obtaining an average of 5.68 (SD = 1.34). This value could vary from 1 to 7, representing the value 7 a more pro-contraception attitude.

Scale on Attitudes towards Abortion

In Table 6 we present the number of participants who reported each dichotomized variable from Finlay's scale [20]. These variables had a Cronbach's alpha of 0.815; this value does not rise with the exclusion of any item. The eighth item ("no circumstance justifies an abortion") was not accounted for in this calculation, because according to the author this option should be zero, serving only to ensure that all options were read by participants [20]. It was then constructed an index from the first seven variables. This does not constitute an average of several items, but rather the sum of responses to various items, ranging this result between 0 (no circumstance was pointed) and 7 (seven circumstances were pointed). On average, these participants indicated that they consider 2.57 circumstances justify the choice of a woman to abort (SD = 2.01).

Table 3. Organizational and Non Organizational Religiosity – Mean values for each item.

		OR	NOR
N	Valid	379	380
	Missing	1	0
Mean		3.87	3.50
Standard-Deviation		1.611	1.929

OR = Organizational Religiosity; NOR = Non Organizational Religiosity

Hypothesis 1

Hypothesis 1. The Mothers of Large Families present a higher mean level of Satisfaction with Life than Mothers of Non Large Families

We found that all the assumptions of the Student's *t* test for two independent samples were respected. Thus continuing with the analysis, we obtained the following results: $t(378) = -2.008, p = 0.045$. As $p < 0.05$, we rejected the null hypothesis, concluding that there is a significant difference between the mean Satisfaction with Life in the two groups: the Mothers of Large Families (N = 210, M = 4.14, SD = 0.83) are more satisfied with the life than the Mothers of Non Large Families (N = 170, M = 3.97, SD = 0.85). Thus corroborating this hypothesis we measured the degree of association by the coefficient Eta, obtaining a value of 0.103, which according to Bryman and Cramer [24] corresponds to a very weak intensity. The proportion of the variation in Satisfaction with Life explained by the type of family is only 1.1%.

Hypothesis 2

We wanted to test in this section the relationship between family type and Religiosity.

Hypothesis 2.1. Mothers of Large Families have a greater Organizational Religiosity than Mothers of Non Large Families.

Respecting the assumptions of the Student's *t* test for independent samples, we found that $t(377) = -4037, p < 0.001$. We rejected the null hypothesis then, corroborating the difference between the average of Organizational Religiosity in both types of mothers, featuring the Mothers

Table 4. Intrinsic Religiosity – Mean values for each item.

		IR1	IR2	IR3
N	Valid	376	376	378
	Missing	4	4	2
Mean		3.95	3.63	3.58
Standard-Deviation		1.182	1.294	1.349

IR = Intrinsic Religiosity

Table 5A. Attitudes towards Contraception - Mean values for each item.

		ATC1	ATC2	ATC3	ATC4	ATC5	ATC6	ATC7
N	Valid	378	379	379	376	376	377	374
	Missing	2	1	1	4	4	3	6
Mean		5.63	5.77	4.44	5.79	6.11	4.95	6.14
Std. Deviation		2.003	1.968	2.190	2.089	1.825	2.497	1.741

ATC = Attitudes towards Contraception

of Large Families (N = 210, M = 4.16, SD = 1.57) higher average value in this type of religiosity, than the Mothers of Non Large Families (N = 169, M = 3.50, SD = 1.60). Regarding the association between these two variables, we obtained a 0.204 Eta, which shows a weak intensity of this relationship [24]. The family type explains a proportion of variation in Organizational Religiosity of only 4.1%.

Hypothesis 2.2. Mothers of Large Families have greater Non Organizational Religiosity than Mothers of Non Large Families.

Verified the assumptions of the Student's *t* test for independent samples, we found that $t(378) = -3168$, $p = 0.002$. Assuming then a significant difference in mean of Non Organizational Religiosity for these two samples, we note again that Mothers of Large Families (N = 210, M = 3.78, SD = 1.92) are more religious than Mothers of Non Large Families (N = 170, M = 3.15, SD = 1.89). We found for this relationship a value of Eta 0.161, which again represents a very weak intensity relation [24], explaining the type of family a proportion of variation in Non-Organizational Religiosity only of 2.6%.

Hypothesis 2.3. Mothers of Large Families have greater intrinsic religiosity than Mothers of Non Large Families.

Using the same test again, we found a $t(328,102) = -3908$, $p < 0.001$, not assuming homogeneity of variance ($p < 0.001$ for the Levene test). This difference goes in the same direction of the previous ones. We also found that in Intrinsic Religiosity, Mothers of Large Families (N = 270, M = 3.93, SD = 1.06) are more religious than Mothers of Non Large Families (N = 170, M = 3.46, SD = 1.27). The measure of association between family type and Intrinsic Religiosity corresponds to a 0.201 Eta, which is a weak value, which

shows that 4% of the proportion of variation of Intrinsic Religiosity is explained by family type.

Hypothesis 3

We explored the relationship between family type, Attitudes towards Contraception and Religiosity.

Hypothesis 3.1. Mothers of Large Families have more negative attitudes with respect to contraception than Mothers of Non Large Families.

We found in this analysis a value of $t(376,680) = 3,203$, $p = 0.001$ when performing the Student's *t* test for independent samples (assuming it is not assumed homogeneity of variances, since $p = 0.006$ for the Levene test). We found then that Mothers of Large Families (N = 210, M = 5.49, SD = 1.41) are on average more negative in relation to contraception than Mothers of Non Large Families (N = 170, M = 5.92, SD = 1.21), and this difference attained statistical significance. We found a very weak value of Eta (0.160) for the association between these two variables, explaining the type of family 2.6% of the proportion of variation of Attitudes towards Contraception.

Hypothesis 3.2. The relationship between family type and Attitudes towards Contraception is moderated by Organizational Religiosity.

Regressing the interaction effect between family type and Organizational Religiosity on Attitudes towards Contraception, this proved to be significant, with an intensity of 0.85% ($p = 0.027$, $B = -0.147$, $SE = 0.066$, $Beta = -0.092$, $t = -2215$; R^2 Semiparcial = 0.0085). This interaction has a good tolerance (0.997), reflecting the absence of multicollinearity. Note also that the random residual variables

Table 5B. Attitudes towards Contraception - Mean values for each item.

		ATC8	ATC9	ATC10	ATC11	ATC12	ATC13
N	Valid	376	376	377	370	376	378
	Missing	4	4	3	10	4	2
Mean		4.82	5.96	6.73	5.99	5.82	5.90
Std. Deviation		2.051	1.964	0.926	1.747	1.769	1.896

ATC = Attitudes towards Contraception

had an expected value of zero. However, the distribution of residuals indicates some lack of normality, linearity, and homogeneity of variances, even after removing outliers (because of problems in the distribution of the dependent variable "attitudes towards contraception", the cases which residues had a value less than or equal to -2.5 were removed in all moderations with this variable as dependent), therefore we cannot consider that in this regression model assumptions are fully respected. We considered that it was still relevant to analyze graphically how these variables behave [25]. We saw that when family type is Large (*high*), the Attitudes towards Contraception tend to have lower values. This was very clear when Organizational Religiosity is high, and remains, although less sharply when the Organizational Religiosity is moderate. But when the Organizational Religiosity is low, this relationship is reversed, larger families show slightly higher values in Attitudes towards Contraception.

Hypothesis 3.3. The relationship between family type and Attitudes towards Contraception is moderated by Non Organizational Religiosity

Testing the existence of an interaction effect between family type and Non Organizational Religiosity in Attitudes towards Contraception, we faced a significant effect, with an intensity of 1.54% ($p = 0.005$, $B = -0.163$, $SE = 0.058$, $\beta = -0.124$, $t = -2825$; Semiparcial $R^2 = 0.0154$). We emphasize that this model does not present problems of multicollinearity (tolerance = 0.997), with residual random variables with expected value zero. However, like the previous model, the distribution of residuals indicates some lack of normality, linearity, and homogeneity of variances, even after removing outliers. Thus, we should bear in mind that there are assumptions that could not be fully respected.

We also decided to graphically analyze the interaction of these variables [25]. We can verify that Attitudes towards Contraception are more positive in Non-Large Families. This relationship is not the same depending on the degree of Non Organizational Religiosity: the higher, the more negative these attitudes. Unlike the previous analysis on the Organizational Religiosity, at low levels of Non Organizational Religiosity this effect is not reversed, although it loses almost its entire expression.

Hypothesis 3.4. The relationship between family type and Attitudes towards Contraception is moderated by Intrinsic Religiosity

In checking the effect of interaction between family type and Intrinsic Religiosity on Attitudes towards Contraception, we found a significant effect, with an intensity of 1.49% ($p = 0.009$, $B = -0.258$, $SE = 0.099$, $\beta = -0.124$, $t = -2610$; Semiparcial $R^2 = 0.0149$). We checked the assumptions of no multicollinearity (tolerance = 0.967) and residual random variables having zero expected value. However, even after the removal of outliers, normal and linear distributions were not observed, with homogeneity

of variance, in the residual random variables. We could see how, as in previous moderations, Intrinsic Religiosity influences the relationship between family type and Attitudes towards Contraception: when Religiosity is low, there is practically no difference in the level of Attitudes regarding contraception among family types, and these attitudes are more favorable; when Religiosity presents average values, the favorability regarding contraception falls, especially in Large Families; and finally, when Religiosity is high, the favorability regarding contraception falls further, reaching its minimum in more religious Large Families.

Hypothesis 4

Finally, we analyzed the relationship between family type, the Attitudes towards Abortion and Religiosity.

Hypothesis 4.1. Mothers of Large Families have more negative attitudes towards abortion than Mothers of Non Large Families.

When performing the Student's *t* test for two independent samples, respecting all assumptions, we conclude that $t(374) = 3809$, $p < 0.001$, so this is a significant difference: Mothers of Large Families ($N = 208$, $M = 2.23$, $SD = 1.92$) are more negative towards abortion than Mothers of Non Large Families ($N = 168$, $M = 3.01$, $SD = 2.03$). Again, the value of Eta concerning the association between these two variables proved to be very weak (0.193), family type explains 3.7% of the variation in Attitudes towards Abortion.

Hypothesis 4.2. The relationship between family type and Attitudes towards Abortion is moderated by Organizational Religiosity

Testing for an effect of Organizational Religiosity in the relationship between family type and Attitudes towards Abortion, we found that there is no significant effect ($p = 0.743$, $B = -0.032$, $SE = 0.098$; $\beta = -0.013$, $t = -0.328$; Semiparcial $R^2 = 0.0002$). This model does not reveal problems of multicollinearity (tolerance = 0.997), and the random residual variables have an expected null value. The distribution of residuals, however, indicates a lack of normality, linearity, and homogeneity of variances. We therefore consider that we have a regression model that does not meet some of the assumptions. Although this hypothesis does not translate into a significant confirmation, we analyzed the relationship between these variables [25]. The most numerous type of family had lower results in Attitudes towards Abortion, as well as the level of Organizational Religiosity. The group that was more favorable group towards abortion is constituted of women with few children and reduced Organizational Religiosity, and the less favorable group towards abortion is constituted of women with more children and more religious. Although here we do not find a significant effect in accordance with expectations, there is a trend for the influence of Religiosity and family type in these attitudes.

Hypothesis 4.3. The relationship between family type and Attitudes towards Abortion is moderated by Non Organizational Religiosity

Also in this hypothesis we observed there is no significant effect ($p=0.335, B=-0.087, SE=0.090, \beta=-0.041, t=-0.966, R^2 = 0.0017$ Semiparcial). There were no problems of multicollinearity (tolerance = 0.998), nor with the expected value of the residual random variables (being null). Analyzing the residuals, however, we found some asymmetries indicating that normality, linearity, and homogeneity of variances were not met. Again, this is a model where it is not possible to admit some of the assumptions.

We analyzed however the relationship between the family type, Non Organizational Religiosity and Attitudes towards Abortion [25]. When family type is the most numerous, and/or when Non Organizational Religiosity is higher, we found more negative Attitudes towards Abortion, and the converse also applies: in non-large families and/or lower degrees of Non Organizational Religiosity, these attitudes are more favorable. We observed again a tendency as expected, although not significant.

Hypothesis 4.4. The relationship between family type and Attitudes towards Abortion is moderated by Intrinsic Religiosity

Finally, in the latter case, there was likewise no significant effect of moderation ($p = 0.371, B = -0.130, SE = 0.146, \beta = -0.038, t = -0.895; R^2$ Semiparcial = 0.0014). There were no multicollinearity problems (tolerance = 0.967) nor with the expected value of the residual random variables. Residual analysis reveals yet again, some deviations from normality, linearity, and homogeneity of variances, not fully complying with the required assumptions.

We analysed the relationship between family type, Intrinsic Religiosity and Attitudes towards Abortion [25]. Again, we found that in Large Families and in situations of high Intrinsic Religiosity, Attitudes towards Abortion were more negative, and in Non-Large Families and with reduced values of Intrinsic Religiosity, attitudes appear to be more pro-abortion. We are again facing an expected trend that did not reveal a significant moderation.

Summary of Results

Here we aim to synthesize the information presented in the analysis of each hypothesis. We divide this synthesis according to the type of analysis performed, so outlining the analyzes using Student's *t* test for independent samples in Table 7, and the analyzes of moderation effect on different assumptions in Table 8. All significant relationships in both tables are highlighted.

Discussion

As expected, we found that Mothers of Large Families showed greater Satisfaction with Life [10]. We may admit that Mothers of Large Families are now living closer to the desired fertility, a concept studied by Dey and Wasoff [26] and Liefbroer [27], which may be one of several explanations for this difference in Satisfaction with Life. These mothers also showed higher Religiosity [8, 28, 29] in the three studied dimensions (Organizational, Non Organizational, and Intrinsic) according to Koenig & Bussing [9], and more negative Attitudes towards Contraception [6] and Abortion [7, 30, 31]. It should be noted however, that although significant results were found, none of the relationships showed a strong intensity.

We found that religiosity can still be a factor that influences the strength of the relationship between family type and these attitudes, as suggested by Lehrer [32], Munshi & Myaux [33], and Davidson & Jaccard [34], being a moderator with significant effect in Attitudes towards Contraception, despite some limitations of the models. Note that the topic Natural Family Planning arose spontaneously in some comments left by some mothers ("I think that when you refer to contraceptives in your study you are not referring to natural methods of pregnancy regulation"; "You should consider in your study the use or no use of contraception or even of the so-called natural methods").

However, we have to consider that the study is limited to married mothers with biological children living in the district of Lisbon, Portugal. It would be therefore interesting to replicate the study of the relationships between

Table 7. Summary of Student's *t* tests for independent samples.

Hypothesis	<i>M</i> (LFM)	<i>M</i> (NLFM)	<i>p</i> -value	Eta ² x 100
H.1. (FT and SWL)	4.14	3.97	0.045	1.1%
H.2.1. (FT and OR)	4.16	3.50	<0.0001	4.1%
H.2.2. (FT and NOR)	3.78	3.15	0.002	2.6%
H.2.3. (FT and IR)	3.93	3.46	<0.0001	4.0%
H.3.1. (FT and ATC)	5.49	5.92	0.001	2.6%
H.4.1.(FT and ATA)	2.23	3.01	<0.0001	3.7%

ATA = Attitudes towards abortion; ATC = Attitudes towards contraception; FT = Family Type; IR = Intrinsic religiosity; LFM = Large families mothers; OR = Organizational Religiosity; NLFM = Non-large families mothers; NOR = Non-Organizational Religiosity; SWL = Satisfaction with Life

Table 8. Summary of the analyzes of moderation effects via regression.

Interaction Effect	B	Standard-error	Beta	T	R2 Semi-partial	p-value
(H.3.2.) FT*OR - ATC	-0.147	0.066	-0.092	-2.215	0.0085	0.027
(H.3.3.) FT*NOR - ATC	-0.163	0.058	-0.124	-2.825	0.0154	0.005
(H.3.4.) FT*IR - ATC	-0.258	0.099	-0.124	-2.610	0.0149	0.009
(H.4.2.) FT*OR - ATA	-0.032	0.098	-0.013	-0.328	0.0002	0.743
(H.4.3.) FT*NOR - ATA	-0.087	0.090	-0.041	-0.966	0.0017	0.335
(H.4.4.) FT*IR - ATA	-0.130	0.146	-0.038	0.895	0.0014	0.371

ATA = Attitudes towards abortion; ATC = Attitudes towards contraception; FT = Family Type; LFM = Large families mothers; OR = Organizational Religiosity; NLFM = Non-large families mothers; NOR = Non-Organizational Religiosity

these variables in other populations. Due to these inclusion criteria, 71 questionnaires from a total of 451 could not be considered valid, so that only 84.26% (380) were considered for statistical analysis.

It is also important to remember that this is a non-random sample and a correlational study, so with these results we cannot draw generalizable conclusions to the population, neither causal relationships. These results must also be considered keeping in mind that the sample has a very wide range of ages (46 years apart), which includes different generational realities and contextual experiences, due to different historical, socio-economic, and political periods. On the other hand, a correlational study does not allow us to see the direction of a relationship, which may be bidirectional. For example, the fact that a mother had three or more children may constitute in itself a source of Satisfaction with Life, but it can also be the case that the decision to have a third child is the result of an already existing greater Satisfaction with Life. Another limitation that should be mentioned is the fact that the measuring instruments of Religiosity, Attitudes towards Contraception and Attitudes towards Abortion are not tested and standardized for representative samples of the Portuguese population, despite the adaptation process conducted. It is also necessary to note that online data collection implies a lack of control over the conditions on which such collection is done. Thus, if this collection had been made in person it would be possible to have a greater level of control of variables that can affect the course of the study.

Despite these limitations or specificities, we believe that these results are an important step in clarifying and building a theoretical framework for the study of Large Families. In conducting this study we sought to provide a basis for exploratory research on a very specific and understudied type of population—Mothers of Large Families. On the one hand, we focused on how these mothers perceive reality through the study of their Satisfaction with Life and noticing them more satisfied than the sample of Mothers of Non Large Families. On the other hand, we also studied attitudes closely related to conception, as the Attitudes towards Contraception and Abortion. We may

intuit that a mother who accepts to accommodate three or more babies, can be—not knowing whether as cause or consequence—more predisposed to appreciate or revere conception, and therefore being more negative regarding Contraception and Abortion a consequence of being more positive regarding conception. This may be a possible explanation of our results that indicate this difference in attitudes. We also analyzed how different types of religiosity may be an influence on these attitudes, being Mothers of Large Families the most religious.

Conclusion

Although there might be some lack of control on some of the variables, we hope that this work has contributed to the study of the factors that differentiate the specific population that contributes to the increased rate of Birth, specifically through the study of Mothers of Large Families. It would be interesting to continue to identify other variables that may be relevant for such mothers, as the attitudes toward methods of Natural Family Planning, or the effects of this type of planning in married life [35], and in the Satisfaction with Life. It would be even further enriching this type of research focusing also both parents. Another interesting aspect would be to explore the role that this type of family plays in the communities where they are located, such as schools or associations.

Finally, we emphasize that more research in this area is also important on the politically point-of-view, especially in identifying measures that enable the reduction of the discrepancy between the desired number of children and the real number of children [36]. We know that the costs of having a child, employment or career, the household income, the perception of social uncertainty, and social policies are factors that weigh in reproductive behavior [37], and as such should also be taken into account at government level if we do not want to aggravate the fertility crisis happening in Portugal. On the other hand, there are sometimes parents with a higher socioeconomic status expecting to have fewer children [26], so we consider that, according to David [5], it continues to be a need for in-

terdisciplinary research dedicated to what influences social changes in reproductive behavior.

Competing interests

The authors declare no conflict of interest.

References

- Lipe D. Incentives, fertility control and research. *American Psychologist* 1971; 26(7):617-625.
- Portugal. Instituto Nacional de Estatística. Estatísticas demográficas 2010. Lisboa; 2011.
- European Union. Demography Report 2010. Luxembourg; 2011.
- Rupp M, Beier L, Dechant A, Haag C. Research agenda on families and family wellbeing for Europe - final report. Family Plattform. 2011.
- David H. Reproductive rights and reproductive behaviour – clash or convergence of private values and public policies? *American Psychologist* 1994; 49(4):343-349.
- Linn M, Carmichael J, Klitenick P, Webb N, & Gurel L. Fertility related attitudes of minority mothers with large and small families. *Journal of Applied Social Psychology* 1978; 8(1):1-14.
- Renzi M. Ideal family size as an intervening variable between religion and attitudes towards abortion. *Journal for the Scientific Study of Religion* 1975; 14:23–27.
- Zhang L. Religious affiliation, religiosity, and male and female fertility. *Demographic Research* 2008; 18(8):233-262.
- Koenig H, Bussing, A.. The Duke University Religion Index (DUREL): A five-item measure for use in epidemiological studies. *Religions* 2010;1:78-85.
- Angeles L. Children and life satisfaction. *Journal of Happiness Studies* 2010; 11(4):523-538.
- Beutell N & Wittig-Berman U. Predictors of work-family conflict and satisfaction with family, job, career, and life. *Psychological Reports* 1999; 85:893-903.
- Beutell N & Greenhaus J. Interrole conflict among married women: The influence of husband and wife characteristics on conflict and coping behavior. *Journal of vocational behavior* 1982; 21(1): 99-110.
- Diener E, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. *Journal of Personality Assessment* 1985; 49:71-75.
- Seco G, Casimiro M., Pereira M., Dias M., Custódio S. Para uma abordagem psicológica da transição do ensino secundário para o ensino superior: pontes e alçapões. Leiria: Edição Instituto Politécnico de Leiria; 2005.
- Moreira-Almeida A, Peres M, Aloe F, Neto F, Koenig H. Versão em português da escala de religiosidade da Duke: DUREL. *Revista de Psiquiatria Clínica* 2008; 35(1):31-32.
- Koenig H, Meador K, Parkerson G. Religion index for psychiatric research: a 5-item measure for use in health outcome studies. *American Journal of Psychiatry* 1997; 154:885-886.
- Gonçalves M, Boavida R, Cordeiro J, Farcas D. Adaptação transcultural de três escalas. [unpublished manuscript]. Lisboa: ISCTE-IUL; 2012.
- Davis CM, Yarber WL, Bauserman, Schreer, Davis SL, editors.. *Handbook of Sexuality-related Measures*. Sage: Thousand Oaks, CA; 1998.
- Fisher W. A scale to assess university women's attitudes about contraceptive acquisition and use. In: Davis CM, Yarber WL, Bauserman R, Schreer G, Davis S, editors. *Handbook of Sexuality-related Measures*. Sage: Thousand Oaks, CA; 1998.
- Finlay B. Scale of favorability towards abortion. In: Davis CM, Yarber WL, Bauserman R, Schreer G, Davis S, editors. *Handbook of Sexuality-related Measures*. Sage: Thousand Oaks, CA; 1998.
- American Psychological Association. Ethical principles of psychologists and code of conduct. *American Psychologist* 2002; 57(12):1060-1073.
- Ordem dos Psicólogos Portugueses . Código deontológico dos psicólogos portugueses. Available from: https://www.ordemdospsicologos.pt/ficheiros/documentos/caodigo_deontoloagico.pdf.
- Simões A. Ulterior validação de uma Escala de satisfação com a vida (SWLS). *Revista Portuguesa de Pedagogia* 1992; 26(3):503-515.
- Bryman A, Cramer D.. *Análise de dados em ciências sociais – introdução às técnicas utilizando o SPSS para Windows*. 3rd ed.). Oeiras: Celta; 2003.
- Jose P. ModGraph-I: a programme to compute cell means for the graphical display of moderational analyses - the internet version, version 2.0. Available from: <http://www.victoria.ac.nz/psyc/paul-jose-files/modgraph/modgraph.php>.
- Dey I, Wasoff F. Another child? Fertility ideals, resources and opportunities. *Population Research and Policy Review* 2010; 29(6):921-940.
- Liefbroer A.. Changes in family size intentions across young adulthood: a life-course perspective. *European Journal of Population* 2009; 25(4):363-386.
- Scott W, Morgan C.. An analysis of factors affecting traditional family expectations and perceptions of ideal fertility. *Sex Roles* 1983; 9(8):901-914.
- Heaton T. Does religion influence fertility in developing countries? *Population Research and Policy Review* 2011; 30:449-465.
- Singh K, Leahy P. Contextual and ideological dimensions of attitudes towards discretionary abortion. *Demography* 1978; 15:381-88.
- Finlay B. Sex differences in correlates of abortion attitudes among college students. *Journal of Marriage and Family* 1981; 43(3):571-582.
- Lehrer, E. (2004). Religion as a determinant of economic and demographic behaviour in the United States. IZA Discussion Paper, 1390.
- Munshi K, Myaux J. Social norms and the fertility transition. *Journal of Development Economics* 2006; 80:1-36.
- Davidson A, Jaccard J. Population psychology: a new look at an old problem. *Journal of Personality and Social Psychology* 1975; 31(6):1073-1082.
- VandeVusse L, Hanson L, Fehring R, Newman A, Fox J. Couples' views of the effects of natural family planning on marital dynamics. *Journal of Nursing Scholarship* 2003; 35(2):171-176.
- Gauthier A, Philipov D. Can policies enhance fertility in Europe? In: *Vienna Yearbook of Population Research*; 2008.
- Pinto M, Gomes M. Primeira reflexão sobre a fecundidade, as condições de trabalho, e as políticas de apoio à maternidade numa perspectiva regional. *Revista de Estudos Demográficos* 2010; 48:63-76.