

Examining Fertility Intentions in China and Spain: An Application of the Communication Theory of Planned Behavior

Bingjie Cao¹, Nan Wei^{2,a,*}, and Xinfang Zhang³

¹*School of Philosophy, Psychology and Language Sciences, The University of Edinburgh, Edinburgh, Scotland, EH8 9YL, United Kingdom*

²*School of Asian Studies, Beijing Foreign Studies University, Beijing, Beijing, 400000, China*

³*School of Foreign Studies, Northeastern University at Qinhuangdao, Qinhuangdao, Hebei, 066004, China*

a. 202120108064@bfsu.edu.cn

**corresponding author*

Abstract: In the current context of worldwide low fertility rate, the issue of female fertility received great attention. Since the attitudes towards giving the birth could have a heavy influence on the fertility behavior or behavioral intention, meanwhile, the attitudes are often affected by women's self-cognition and social norms, so it is important to search for the crucial factors of female fertility issues. Consistent with above conditions and research goal, this study applies the Theory of Planned Behavior and also chooses some parts of the Cognitive Mediation Model as the academic resource of potential factors which originated from the widespread use of social media. By the means of proposal sampling, the current research have conducted an online survey by spreading the questionnaire to search for the correlations between the attitudes, social norms, perceived behavioral control with fertility intentions respectively. The objectives are the females (ages from 18-60 years old, who can be independent and has fertility ability or go over people's identity) in China and Spain. The two countries have different social context and fertility policies, but the results illustrate that women's fertility intentions are both low. Moreover, females seem the subjective norms like the stress pushed by the intimate person. And they judge social media is more of a media platform for people to learn about fertility information and related policies. They actually think that having children is not beneficial but unpleasant. Overall, the impact of social media on fertility intention less powerful than policies (included in social norms) and more less powerful than women's feeling towards the life if having children (included in attitudes). Through the research process and by comparing the situation of China and Spain, this study can tell the importance of reforming birth and family policies, and indicate the general direction for it.

Keywords: planned behavior, fertility, social norms, fertility intentions

1. Introduction

In the nearest decade, the decline of the world population growth rate has arisen people's attentions. Meanwhile, the reverse population growth and aging problems which come with it in some countries have concerned amounts of experts. There is a socially necessary which is to enhance the current fertility rate, thus before doing that, finding the reasons of low rates is the crucial point. Tracing to the source of these problems, the fertility issue becoming a hot topic again. Female, the main character of fertility issues, researching their attitudes and behavior intentions towards fertility is an integral part.

In China and Spain, the two developing or developed country which both have low fertility rates, the female living with different cultural and social background as well as economic conditions might have different attitudes and distinguished reasons toward having a child. Meanwhile the various policies regarding to fertility and family issued by the government may also influence their fertility intentions. To be specific, in China, the positive birth-encouraging policies have been introduced and improved continuously from 2016 to 2020, but women's willingness to give a birth seems maintain at the low level [1]. By contrast, Spanish female are trapped by "conservative" family policies and face the difficulties such as have to be the responsible party of the maximum of welfare responsibilities. The "child gap" (the average difference between the numbers of children desired to born and actual have) characters the current situation of the fertility problems in Spain [2]. However, according to the cultural customs and social context, this research wants to find the effective factors of women's fertility intentions. In addition, due to the rapid development of social media, people, especially women, have more sources and spaces to discuss about fertility policies and knowledge. Those online interpersonal communication could also affect female's fertility intentions. Hence, this research also takes the Cognitive Mediation Model into consideration [3].

The current research brings to bear the prediction model based on the Theory to Planned Behavior, which are attitudes, social norms and perceived behavioral control to identify the factors that affect females' intentions to give a birth after marriage and the relationships between those factors and the intentions of fertility [4].

By the means of online survey, this study wants to compare the same and difference of fertility attitude between the women in China and Spain. To be specific, based on the Theory of Planned Behavior, through the scientific analysis, the study tries to get the key elements affect the fertility intentions and search for a valid model to predict the intention of having a child by understanding the thoughts of women which may as the basic work before exploring the feasible solution to the current population decline issue and reach the human sustainable development.

2. Literature Review

As the introduction and the exploration of the theory of reasoned action and the theory of planned behaviour applied into the difference between the fertility intention and behaviour in China and Spain. The theory of reasoned action, which is considered in two dimensions which are social norms, attitude toward pregnancy. Information or other beliefs have impacts on intentions and subsequent behaviour either through attitude and social norms which are including the subjective norms and objective norms [5].

Being regarded as an extension of The Reasoned Action, the theory of Planned Behavior added the perceived behaviour control into the analysis. Perceived behaviour control is defined that people perceived the extent whether to do or not.

Attitude, the structure of attitude is divided into two parts which are the psychological attitude and cognitive attitude. The psychological attitude is from the feeling of people. People perceive the feeling from mind, while the cognitive attitude reflects people perceptions from their cognition, which

is from their knowledge and their culture or something related to they have attached with in the past [6]. Social norms can be categorized into subjective, descriptive and injunction norms. Subjective norms refer to a sort of personal view toward the events. It is from people's intention and background. The descriptive norms refer to people mind that the view toward how people who I thought they are important to the people and treat them as a serious way of making decision [7].

social norms can be defined by the rules which are made by people in society and most people would like to obey because the amount is big enough [8]. They can be formal and all of people who live in this background need to obey or informal which is unwritten but people know whether to do or not. social norms are like people who obey but treat them as unspoken rules which include the values which are agreed with most people, and they shared the same unspoken regularity. norms are defined as the rules which means people should do or not to do. And injunctive norms indicate expectation of approval or dis approval from others [9].

In China, the fertility attention is affected by many factors. Thus, in November 2013, the one-child policy was introduced by Chinese government where couples were allowed to have a second child if either of the individuals was an only child [10]. Hence, China has been published the one-child policy in November of 2013, which stated that the legal parents were allowed to conceive the second baby while in the past only one child id allowed in a family [10]. Although the changes have been appeared in China's family, the fertility rate also keep declining rate, the fertility intention also not be boost. the population did not be increased despite the law has encouraged people to foster more children in the families. "Social externalities" is proposed by De Laat and Sevilla Sanz in 2006, they defined the social rules has an essential impact on the gender equity from some expectations like people always have a shared and common expectation on the gender roles which has a significant effect on how people decide about the gender question [11].

A higher gender equity also be impacted by the political engagement, higher engagement of female reflects that the class female in, if they could engage more, they will have more chance to choose whether to conceive a baby or not [12]. Also, it depends on the class which the female is in. For some higher-class female, they have more resource to control their weight and they do not need to worry about their wages and income after pregnancy, which is an essential factor of their fertility intention [13]. In recent years, the birth rate keeps decreasing in many countries, and many factors are impacted the final result. In this paper, the relationship of the social norms and perceived behaviour control with the pregnancy behaviour will be considered.

Hypothesis:

H1: The attitude has a positive influence toward women to conceive a baby in China.

H2: The subjective norms have a positive influence toward women to conceive a baby in China.

H3: The perceived behavioral control has a positive influence toward women to conceive a baby in China.

H4: The attitude has a positive influence toward women to conceive a baby in Spain.

H5: The subjective norms have a positive influence toward women to conceive a baby in Spain.

H6: The perceived behavioral control has a positive influence toward women to conceive a baby in Spain.

3. Methodology

Researchers have conducted an online survey for the Chinese and Spanish females and spread the questionnaires on the social media, including Weibo and Facebook, also offline surveys, to invite our target objectives (Chinese and Spanish females ages from 18-60 years old) to join the research. The questionnaires are created on "Sojump" website and analyzed by SPSS.

The questionnaire contained a total of 21 questions, three of which were basic information about the participants. 4 questions for “attitude”, 5 questions for “subjective norms”, 4 questions for “behavioral intention” and 2 questions for “perceived behavioral control”.

The questionnaires were distributed on August 21, 2023, and lasted for one week, with a total of 236 valid questionnaires collected from China, 190 valid questionnaires are collected from Spain.

4. Results

Among the 236 questionnaires of Chinese women, 48.3% of participants ages from 18-20 years old; the group ages from 21-30 accounts 17.2%; the group ages from 31-40 accounts the other 2%; the group ages from 41-50 accounts 25.7%; the rest 7.9% are the samples ages from 51-60. The overall samples show a younger trend.

In Spain, 190 questionnaires were collected. 39.4% of participants ages from 18-20 years old; the group ages from 21-30 accounts 17.1%; the group ages from 31-40 accounts the other 3.1%; the group ages from 41-50 accounts 30.1%; the rest 10.6% are the samples ages from 51-60. The overall samples show a younger trend.

4.1. Control Variable

Control variable (using demographic variable) of women represented in this study is women's age (China: $M=29.76$, $SD=13.46$; Spain: $M=32.53$, $SD=13.99$).

4.2. Attitude

Women joined in the study rated their attitude through the following four dimensions: (a) unnecessary/necessary, (b) agree/disagree, (c) unpleasant/pleasant, and (d) useless/useful, on the scale from point 1 to point 7. A higher score (near 7) indicates less favorable attitude to conceiving a child, a lower score (near 1) indicates more favorable attitude to conceiving children. (China: $M = 3.76$; $SD = 2.35$, Cronbach's $\alpha = 0.965$; Spain: $M = 4.23$; $SD = 2.28$, Cronbach's $\alpha = 0.902$).

4.3. Subjective Norms

Participants assessed on a scale of point 1 (strongly disagree) to point 7 (strongly agree) for the following questions: (a) “People who are important to me mostly think that I should have a baby after marriage;”(b) “My friends think that I should have a baby after marriage.” (c) “My parents think that I should have a baby after marriage; ”(d) “My boyfriend or male friends thinks that I should have a baby after marriage;” (e) “The information from the social media thinks that I should have a baby after marriage;” In these statements, a higher score indicates less agree with the idea of having a children (China: $M=5.02$, $SD=1.64$, Cronbach's $\alpha = 0.801$; Spain: $M= 5.01$, $SD=1.73$, Cronbach's $\alpha = 0.765$).

4.4. Perceived Behavioral Control

Two countries' women evaluated their PBC on the scale of point 1 (strongly disagree) to point 7 (strongly agree) for the following two statements “I am sure that I am fertile to have a child after marriage.” and “I can afford to have a baby after marriage.” A higher score indicates have the ability to have a child. (China: $M=4.14$, $SD=2.39$, Cronbach's $\alpha = 0.854$; Spain: $M=4.55$, $SD=2.47$, Cronbach's $\alpha = 0.840$).

4.5. Behavioral Intention

In the behavioral intention part, Chinese and Spanish women participated valued on a scale of point 1 (impossible) to point 7 (possible) for the following four statements: (a) “I intend to use the fertility knowledge to have a baby after marriage;” (b) “I plan to have a baby after marriage;” (c) “I plan to persuade my female friends to have a baby after marriage;” (d) “I plan to follow the child policy of my country.” A lower score indicates refuse have a child. (China: $M=3.97$, $SD=2.17$, Cronbach's $\alpha=0.892$; Spain: $M=4.31$, $SD=2.47$, Cronbach's $\alpha=0.895$).

To approve our hypotheses and test our research questions, two ordinary least squares (OLS) hierarchical regression analysis were conducted and listed as table 1 and table 2. In the table, the control variable which is women's age is contained in the first block. TPB-related variables which include attitude, subjective norms, perceived behavioral control and behavioral intention are added to the second block.

In China, the control variable, age ($\beta=0.693$, $p<0.001$) was positively associated with behavioral intention. With respect to TPB, the results illustrate that attitude ($\beta=0.902$, $p<0.001$) was positively associated with behavioral intention, which supported H1. Simultaneously, subjective norms ($\beta=0.781$, $p<0.001$) was positively associated with behavioral intention, which supported H2. Also, the results revealed that the perceived behavioral control ($\beta=0.799$, $p<0.001$) was positively associated with the behavioral intention, which supported H3.

In Spain, the control variable, age ($\beta=0.074$, $p>0.1$) was not associated with behavioral intention. In the light of TPB, the results showed that attitude ($\beta=0.496$, $p<0.001$) was positively associated with behavioral intention, which supported H4. Similarly, subjective norms ($\beta=0.192$, $p<0.001$) was positively associated with behavioral intention, which supported H5. Also, the results revealed that the perceived behavioral control ($\beta=0.258$, $p<0.001$) was positively associated with behavioral intention, which supported H6.

Table 1: The OLS hierarchical regression analysis of the data from Chinese women.

Model	
Block1: Control variables	
Age	0.693***
Block2: Theory of planned behavior	
Attitudes	0.740***
Subjective norms	0.607***
Perceived behavioral control	0.546***
Incremental R^2	47.80%
N=236, * $p<0.05$, ** $p<0.01$, *** $p<0.001$	

Table 2: The OLS hierarchical regression analysis of the data from Spanish women.

Model	
Block1: Control variables	
Age	0.074
Block2: Theory of planned behavior	
Attitudes	0.712***
Subjective norms	0.605***
Perceived behavioral control	0.505***
Incremental R^2	79.80%
N=190, * $p<0.05$, ** $p<0.01$, *** $p<0.001$	

5. Discussion

From the data collected by the questionnaire in China and Spain, the age range is between 18 and 35, which is a common age of fertility. Most female in China toward not to conceive a baby in their life from the data, although they have known that people who are significant are looking forward to wishing that they could have a baby in the future. however, as the development of feminism recent years, female has been attached with a imagination of a dependent person in the society and they prefer to chase the wealth or some creative lifestyle in their life. in the meanwhile, it is obvious that female has been accepted a higher education because more and more parents would like to invest in education although their children are daughter. For most parents, the link between the education investment has less relationship with the gender their children are. When the female in China prefer to a stable carer or a higher degree in their life, the significance of family and children will be declined compared with the past in China. Furthermore, the female also suffers from a boost in forest cost which could affect people's intention to fertility directly. In recent years, as the spread of the importance of nutrition and baby education, people will be affected a lot and follow the tendency of raising a baby. For some people who are in a higher class in the society, the increase of cost will not change their fertility intention a lot, by the contrast, people who are in family which is not wealthy enough, raising a baby will be consumed demand. For China, it is important to control the education cost and the allowance to people who are ready to conceive a baby. For instance, the cost of milk powder takes a large part in raising cost, if people could get cheaper milk powder each week in every week, they will save a lot so that they can have a demand of conceiving a baby. Secondly, Chinese women also face a dilemma in career, it is common that when people participate an interview, the female will have less opportunity in office, although they could sit in the same position, however, human resource still assume that female will conceive babies and take care of the family in the future which means they have to pay more risk and cost on recruiting a female worker. Under such situation, the female China will be struggle by the unspoken rules. Finally, it is obvious that female in China need more allowance and the equality of gender in career, so that they would like pay the same effort in family and career and the fertility intention will be impacted and increase in the future.

In Spain, after suffering economic crisis and the disease of covid-19, the economic has been strike to a large extent. The unemployment rate keeps increasing and people also encounter a bad situation like a decline in income and a sustaining increase in life pressure, under such situation, people will have less money on raising a baby. Hence the fertility intention has been controlled by the living standard. The female is impacted by social media less than their own feeling. Compared to China, Spain government gives the female more allowance, and also, they control the maternity leave in male so that human resource could consider the same situation for the male and female who are after marriage. However, most Spanish get used to work and have dinner in the night, their rest time has some impact on fertility, which is also a factor people need to consider. furthermore, if the government could simulate consumption, and change the situation of the confidence on economic, the fertility intention might be changed finally.

6. Conclusion

In conclusion, either Chinese or Spanish females have low fertility intention even knowing that the close person around of them wishing they can give a birth. For the perceived behavioral control, which means as having ability to having children, people don't see themselves as terribly incapable of reproducing and nurturing. The reason why they have low fertility intention is because they think that having children is not beneficial and will make their life unpleasant. In addition, the impact of social media on fertility intention is lower than reckoned, but actual policies have a greater impact on it. In spite of the influence of attitudes, social norms or perceived behavioral control, integrate those

things together which is the feelings towards having children in real life is the part which plays the decisive role of fertility intention. Policies, social norms and financial cost are typical factors of that part which are coincide with the elements (attitudes, perceived behavioral control etc.) of TPB. Besides, in China and Spain, under the background of the development of feminism, gender equality and higher education level have enhanced female self-cognition. Nowadays, the females in modern society more and more clearly realized about what they real want, and trying to get a position in the workplace and political arena. However, either in China or Spain, the current family policies still cannot bring the females totally freedom for self—fulfillment, hidden discrimination remains severe, especially in China. It's difficult for women to balance nurturing and working well, if they don't give one side. Taking the financial problem into consideration, for middle-class and underclass women, the reality will only become more strictly, because could hardly afford to the nurturing and educational cost as they live in the era of advocating elite education. Hence, good public welfare, education and working policies, as well as sufficient maternity allowance, will be urgently needed solutions for reformation. According to the all above elaboration, this article makes sure the crucial factors which influence the women's fertility intention in the two different model countries, China and Spain and tries to promote the extension design of TPB prediction model in fertility area, provides a blueprint for fertility policies reformation.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

References

- [1] Wang, F. (2022) "Three-child Policy": A Study on the Evolution and Challenges of Fertility Policy, *PR Magazine*, 20, 98-100.
- [2] Baizan, P. (2016) *The policy context of fertility in Spain: toward a gender-egalitarian model?* (pp. 195-219). Springer International Publishing.
- [3] Ajzen, I. (1991) *The theory of planned behavior*, *Organizational behavior and human decision processes*, 50(2), 179-211.
- [4] Eveland Jr, W. P. (2001) *The cognitive mediation model of learning from the news: Evidence from nonelection, off-year election, and presidential election contexts*. *Communication research*, 28(5), 571-601.
- [5] Gomes, A. I. Cabrsl, D. S., & Nunes, M. C. S. (2014). *Predicting Condom Use: A Comparison of the Theory of Reasoned Action, the Theory of Planned Behavior and an Extended Model of TPB*. *Psicologia: Teoria e Pesquisa* 33, 1–8.
- [6] Shelly Makleff, Rebecca Wilkins, Hadassah Wachsmann, Deepesh Gupta, Muthoni Wachira, Wilson Bunde, Usha Radhakrishnan, Beniamino Cislighi & Sarah E Baum (2019) *Exploring stigma and social norms in women's abortion experiences and their expectations of care*, *Sexual and Reproductive Health Matters*, 27:3, 50-64.
- [7] Rossier, C., Brachet, S., & Salles, A. (2011). *Family Policies, Norms about Gender Roles and Fertility Decisions in France and Germany*. *Vienna Yearbook of Population Research*, 9, 259–258. <https://doi.org/10.1553/populationyearbook2011s259>
- [8] Lappegard, T., & Kornstad, T. (2020). *Social Norms about Father Involvement and Women's Fertility*. *Social Forces*, 99(1), 398–423.
- [9] Kim, Jeong, S.-H., & Hwang, Y. (2013). *Predictors of Pro-Environmental Behaviors of American and Korean Students: The Application of the Theory of Reasoned Action and Protection Motivation Theory*. *Science Communication*, 35(2), 168–188.
- [10] Wang, T., Wang, C., Zhou, W., & Luo, Y. (2014). *Fertility Intentions for a Second Child among Urban Working Women with One Child in Hunan Province, China: A Cross-Sectional Study*. *Public Health*, 173, 21–28.
- [11] Marshall, R. S., Akoorie, M. E. m, & Sinha, P. (2010). *Environmental Practices in the Wine Industry: An Empirical Application of the Theory of Reasoned Action and Stakeholder Theory in the United States and New Zealand*. *Journal of World Business*, 45, 405–414.
- [12] Larranaga, I., Marina, L. S., Begiristain, H., Machon, M., Vrijheid, M., Casas, M., & Tardon, A. (2013). *Socio-Economic Inequalities in Health, Habits and Self-Care During Pregnancy in Spain*. *Matern Child Health*, 17, 1315–1324.
- [13] Yzer. (2013). *Reasoned Action Theory: Persuasion as Belief-Based Behavior Change*. In *The SAGE Handbook of Persuasion: Developments in Theory and Practice* (pp. 120–136).