

Factors Influencing the Desired Number of Children Among Married Women in the Reproductive Age and its Implications for Policy Making

Khadijeh Asadi Sarvestani,^{1,2,*} Suet Leng Khoo,³ Nor Malina Malek,⁴ Suziana Mat Yasin,⁵ and Aliyar

Ahmadi⁶

¹PhD Candidate of University Sains Malaysia, Malaysia

²Lecturer in Department of Sociology and Social Planning, Shiraz University, Shiraz, IR Iran

³Senior Lecturer in Department of Development Planning and Management, University Sains Malaysia, Malaysia

⁴Associate Professor in Department of Development Planning and Management, University Sains Malaysia, Malaysia

⁵Senior Lecturer in Department of Development Planning and Management, University Sains Malaysia, Malaysia

⁶Assistance Professor in Department of Sociology and Social Planning, Shiraz University, Shiraz, IR Iran

*Corresponding author: Khadijeh Asadi Sarvestani, PhD Candidate of University Sains Malaysia, Lecture in Department of Sociology and Social Planning, Shiraz University, Shiraz, IR Iran. Tel: +98-7132333673, E-mail: Asadi.Kh1982@gmail.com

Received 2016 May 03; Revised 2016 July 02; Accepted 2016 July 04.

Abstract

Background: Desired number of children is one of the main indexes showing the fertility preferences of couples. This issue is currently more important as Iranian policy makers are revising population policies to improve fertility rate.

Objectives: As a result, the main goal of this study was to investigate factors influencing the number of desired children among married women in the reproductive age. A theoretical framework was constructed based on demographic transition theory, demand-supply theory and diffusion theory.

Methods: This study was a quantitative research and its research technique was survey. The population of the study included all married women at the reproductive age (15-49), who were living in Shiraz County (Shiraz city and surrounding rural areas). Data was collected by interviews with 626 women, who were selected by multi cluster sampling and purposive sampling during year 2014. Data was analyzed by the SPSS (version 22) software.

Results: The findings showed that the desired number of children both in Shiraz city and its surrounding rural areas was exactly below the replacement rate. In addition, findings of this study demonstrated that the desired number of children as a dependent variable is affected by a set of socioeconomic and cultural factors. Results have revealed that the main predictors are couple agreement on the number of children, respondents' income, son preference, respondents' authority and ethnicity.

Conclusions: Overall, the variables considered in the research model explained only 32.7% of change in the dependent variable. This means that 67.3% of change in the number of desired children is related to factors that are not included in the research model. Moreover, most of the women in Shiraz County desired to have a small family size and this fact can result in further decline of fertility rates in the future because couples respect their desires in fertility. As a result, it is recommender for policy makers to pay more attention to factors influencing the desired number of children.

Keywords: Desired Number of Children, Fertility, Family Planning, Health Policy, Population Policy, Shiraz County-Iran

1. Background

Fertility trends can be predicted and population growth can be controlled by recognizing the factors that affect fertility preferences and desires. In fact, permanent population policies cannot be planned without a comprehensive and accurate study of factors influencing fertility (1). Bankole and Audam (2) believed that most spouses respect their fertility preferences, whether in terms of desired number of children or desire for a future birth. As a result, the investigation of the number of desired children has great importance in fertility studies. In addition, the desired number of children has great importance in

determining the tendency of people to use contraception (3). In the case of Iran, it should be mentioned that due to the success of the Iranian family planning program and socioeconomic development, the fertility rate declined dramatically from an average of more than 6.58 births per woman in the early 1980s to 1.92 births per woman in 2006 (4). As a result, some policy makers are worried about the low fertility rate. Consequently, investigation on factors influencing the desired number of children has great importance.

2. Objectives

Accordingly, this research focused on the number of desired children among married women in Shiraz County-Iran and influencing social, cultural and economic factors. The theoretical framework of this study was drawn based on the demographic transition theory, the demand-supply theory and the diffusion theory (5, 6).

3. Methods

This study was quantitative and its research technique was survey. The population of this study was all married women at the reproductive age (15 to 49), who were living in Shiraz County (include Shiraz city and surrounding rural areas) in 2014. The sample size (398) was determined by Krejcie and Morgan's formula. To avoid sample attrition problem, 700 (400 in Shiraz city, 300 in rural areas) questionnaires were distributed. However, only 626 questionnaires were useable, as 74 questionnaires were found to be incomplete. The representative sample was selected from 20 regions of Shiraz City and five rural districts. Data was collected from 626 women, who were selected by multi cluster sampling. The data collection tool was a questionnaire, which was filled by an interviewer. The reliability of the subscale was determined by Cronbach's alpha. The validity of the questionnaire was determined by sending the instrument to a panel of expert, which consisted of lecturers in the relevant academic field, to obtain their feedback regarding its content validity. Based on the recommendations from academic experts, the survey instrument was redrafted, where the intangible terms were rephrased and ambiguous questions were dropped. Finally, data analysis was done by the SPSS (version 22) software. In addition, Poisson Regression was employed to predict the number of desired children and to investigate the difference between Shiraz City and its rural areas in the number of desired children, respectively

4. Results

Table 1 and 2, Figure 1 compare the number of actual births with desired children of women in Shiraz city and rural areas. Table 1 shows that the average number of desired children per woman in Shiraz County is two, while the number of actual births is 1.98. However, the average number of desired children per woman in Shiraz city (1.86) is lower compared to rural areas (1.91). In addition, the number of children desired by rural women is lower than their actual birth while this relationship is entirely opposite for urban women.

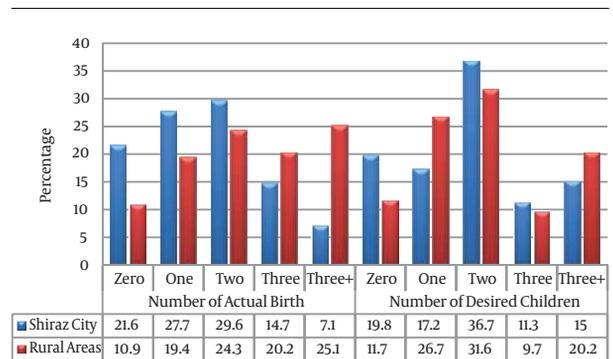


Figure 1. Number of Actual Births and Desired Children According to Place of Residence (n = 626)(7)

Figure 1 demonstrates that the highest percentage both in Shiraz city (36.7%) and rural areas (31.6%) is related to women who desire to have two children. Moreover, 17.2% of women in Shiraz city and 26.7% of women in rural areas desired to have only one child. Results also illustrate that 19.8% of urban women and 11.7% of rural women do not like to have any child.

It should be noted that the findings related to the desired number of children illustrated in Figure 1 and Table 1 include all women regardless of the number of actual births. Accordingly, Table 2 only demonstrates the percentage of women without childbirth, who said that they did not want to have any child. In more details, 84.7% of urban women and 41.0% of rural women without child birth did not like to have any child.

4.1. Prediction of the Desired Number of Children

Poisson Regression was employed to predict the desired number of children based on various potential predictors. As can be seen in Table 3, son preference is the strongest predictor that has a positive and significant relationship with the desired number of children ($B = 0.395$, $Ex(B) = 0.647$, $P < 0.001$). It means women who prefer a boy over girl, desire a greater number of children.

5. Discussion

This finding is in agreement with previous studies, which reported that preference to have a son has direct and positive relationship with fertility rate (8-10). As mentioned by Knight, Shi and Quheng (11), the preference for boys may be cultural but it can also reflect an economic incentive if parents expect to benefit more from their sons than from their daughters. They found that Chinese couples prefer to have a son over a daughter in order to obtain a higher income (12-14). However, Shavazi (15) believed

Table 1. Mean Actual Birth and Desired Children According to Place of Residence (n = 626) (7)

Residential Place	Actual Birth				Desired Number of Children			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Shiraz city	1.62	1.33	0	8	1.86	1.47	0	8
Rural areas	2.51	1.72	0	8	1.91	1.77	0	8
Total (including Shiraz city and rural areas)	1.97	1.57	0	8	1.88	1.59	0	8

Table 2. Percentage of Women Without Childbirth and No Desire to Have Children (n = 626) (7)

Residential place	F	%
Shiraz city	70	84.7
Rural areas	11	41.0

that regarding fertility, decision-making among couples in Iran, gender preference and particularly son preference are no longer an issue. Besides, Chaudhuri (16) assumed that the impact of son preference in low-fertility societies is weak since only a few couples want to have excess of one or two children, even if they do not succeed in having their ideal number of daughters and sons.

The second strongest predictor is ethnicity (Fars) that negatively and significantly affect the desired number of children ($B = 0.154$, $Ex(B) = 1.16$, $P = 0.018$). It is true that each ethnicity has its own special values but other factors can create a difference in the desired number of children. One of these important factors is residential area. In more details, most women with Fars ethnicity are living in Shiraz City. Clearly, women who are living in urban areas have more access to educational and job opportunities as well as more access to family planning services as main factors influencing fertility behavior. The results of this research are in agreement with the study of Grady et al. (17) and Yuce-sahin and Ozgur (18) that found a significant relationship between ethnicity and fertility behavior.

Female authority is the third strongest predictor of the desired number of children ($B = .060$, $Ex(B) = 0.942$, $P < 0.001$). This means that women who have higher power in family structure desire to have a smaller family. Obviously, the demographic transition and modernization process in Iran has changed the position of women both within the family, and in the society. The women in Shiraz County are not exempt from these changes either. The women's status has been enhanced by taking steps like providing extra educational opportunities and labour participation, and increasing the access and control of resources like health services to women (5, 12, 13).

Couple agreement on the number of children is the

fourth strongest predictor that has a negative and significant relationship with the desired number of children ($B = -.049$, $Ex(B) = 0.959$, $P < 0.001$). This means that respondents desire lower number of children when they agreed with their husband on the number of children. Once couples have a consensus on the number of desired children, their agreement on the issues, like the interval between childbirth and contraception usage, is considered greater. The results of this study also revealed that about half of the husbands wanted the same number of children as their wives do in both rural areas and Shiraz city. Overall, it can be said that the number of desired children has declined amongst men as well as women. Additionally, these findings are in agreement with findings of other studies, which found that couple agreement on different aspects of fertility behavior would increase women's ability with fertility decisions, use of contraceptive methods and planning for childbearing (2, 19-25).

Exposure to media is the fifth strongest predictor of the desired number of children. Findings in Table 1 demonstrate that there is a significant and negative relationship between the desired number of children and exposure to media ($B = -0.004$, $Ex(B) = 1.004$, $P = 0.040$). Similarly, Barber and Axinn (26) discussed that mass media has the ability to alter behaviors by providing new information or options (a type of structural change) and by modeling the self-identity of consumers (a type of ideational change). Mass media is capable of delivering some health and family planning information to the population. Hornik and McAnany (27) believed that television, radio, and newspaper campaigns increase knowledge and communication about family planning and contraceptive usage and reduce family size preferences. Dreze and Murthi (28) also claimed that the desire to limit childbearing varies with exposure to mass media. Women are 19% more likely to decide to limit childbearing if they are exposed to at least one of the three media sources, radio, TV and newspapers, as compared to women with no access. Barber and Axinn (26) conducted an empirical research on 1091 couples in some rural areas of Nepal. The results of their study showed that individuals exposed to mass media sources preferred smaller families, had weaker preferences for sons, and

were more positive towards contraceptive usage. They believed that mass media shaped individual behavior primarily through ideational mechanisms.

The sixth strongest predictor is respondent's income ($B = -.010$, $Ex(B) = 1.01$, $P = 0.013$). Income is an economic factor that was considered in many population research studies. According to the standard economic theory of fertility, the distinction between male and female income is crucial since women are assumed to be more likely the ones that take time off from work to participate in the care of young children (29). Schultz (30) similarly found that there is an inverse association between income per adult and fertility among countries, and across households. Furthermore, as illustrated by the demand-supply theory, the opportunity cost of the couple's time, especially women's time is raised by education and, usually, excavates better job opportunities for women that sometimes clash with recurrent childbearing (28). In addition, both in relation to household labour and in the control of fertility, women who have higher levels of income and education are considered to be more empowered in their decision-making (12-14). Besides, income of women might decrease their dependence on sons for social recognition or support at an older age in countries like Iran, which are known to give preference to have a son. This results in a decline in desired family size, to an extent that large families are the result of a desire for an adequate number of surviving sons. Another factor that might also decrease the desired family size is the trade-off between the number of children and the time available for each child (28).

Finally, the results from Poisson Regression did not show any significant relationship between residential place and the number of desired children ($B = -0.100$, $Ex(B) = 0.905$, $P = 0.181$). This can be considered a sign of cultural changes among rural women. Although, there is a difference between Shiraz city and rural areas in development indexes, but factors such as promotion of education, especially among women and diffusion of new ideas play a crucial role in these cultural changes.

5.1. Conclusion

The results showed that the desired number of children is a complex issue, which is affected by a set of socioeconomic and cultural factors. In more details, variables considered in the research model explained only 32.7% of change in the dependent variable. This means that 67.3% of change in the number of desired children is related to factors that are not included in the research model. In addition, the findings show that couples in Shiraz county desire to have small family size and this fact can result in further decline of fertility rates in the future because, as

discussed earlier, couples respect their desires. More importantly, there is no difference between urban and rural women in the number of desired children although there is a difference between them in terms of actual births (7). This reveals the fact that the fertility preferences of couples in Shiraz County cannot be explained only by the differential development and the economic analysis of having children. In other words, cost-benefit analysis of couples for having children is also affected by diffusion of new ideas.

Furthermore, findings of this study revealed that considerable percentage of change in the number of desired children can be explained by factors related to women's status in the society and family. Factors such as women authority and income play a vital role in the number of desired children by women. Obviously, there is a positive relationship between women authority and factors such as education and income. However, income and education are not only factors affecting the status of women and their authority. Mass media is another important element that can change ideas and beliefs regarding issues such as women status, desired family size, gender preference and lifestyle. As a result, with attention to increase in the importance of education and job among Iranian women as well as their access to mass media, it is expected that this issue negatively affects the number of desired children by women. On the other hand, clearly, the solution of improving the desired number children is not limited to women's access to opportunities such as education and job and their access to mass media and social networks. As mentioned by Luci and Thevenon (31), the increase of investments in education may have positive effects on fertility levels if the obstacles that prevent educated women from combining family responsibilities and career are removed through adequate policy measures. In other words, support of women to reach their desires can positively affect their desired number of children. In spite of the importance of women status, men play a vital role in making decisions about issues related to fertility and family planning. Results of this study also showed the considerable percentage of couples that agree on the desired number of children. Accordingly, it would be better for policy makers to also consider men in population policies.

Acknowledgments

We wish to thank the staff of both private and public health centers of Shiraz City as well as women who supported us during the collection data.

Table 3. Prediction of the Number of Desired Children by Poisson Regression

Parameter	B	Std. Error	95% Wald Confidence Interval		Ex (B)	Sig.
			Lower	Upper		
Intercept	2.209	0.4314	1.36	3.054	9.107	0.000
Son preference	0.395	0.0814	0.554	0.235	0.674	0.000
Ethnicity (non-fars)	0.154	0.0654	0.026	0.282	1.16	0.018
Respondent income	-0.010	0.0041	-0.002	-0.018	1.01	0.013
Couple agreement on number of children	-0.041	0.0076	-0.056	-0.026	0.959	0.000
Exposure to media	-0.004	0.0017	-0.000	-0.007	1.004	0.040
Woman authority	-0.060	0.0172	-0.094	-0.026	0.942	0.000
Residence place (Shiraz city)	0.100	0.0748	-0.247	0.047	0.905	0.181

Footnote

Conflict of Interests: The authors declare that they have no conflict of interests.

References

1. Beyeza-Kashesy J, Neema S, Ekstrom AM, Kaharuzi F, Mirembe F, Kulane A. "Not a boy, not a child": A qualitative study on young people's views on childbearing in Uganda. *Afr J Reprod Health*. 2010;**14**(1):71-81. [PubMed: 20695140].
2. Bankole A, Audam S. Fertility preferences and contraceptive use among couples in sub-Saharan Africa. *African Popul Stud*. 2011;**25**(2):556-86.
3. MacDevitt TM, Adlakha A, Fowler TB, Harris-Bourne V. Trends in adolescent fertility and contraceptive use in the developing world. US: Diane Publication Company; 1996.
4. World Bank . Fertility decline in the Islamic Republic of Iran 1980-2006 A Case Study Washington: World Bank; 2010. Available from: <http://www.worldbank.org>.
5. Kirk D. Demographic transition theory. *Popul Stud (Camb)*. 1996;**50**(3):361-87. doi: 10.1080/0032472031000149536. [PubMed: 11618374].
6. Pendleton BF, Yang SO. Socioeconomic and health effects on mortality declines in developing countries. *Soc Sci Med*. 1985;**20**(5):453-60. [PubMed: 3992286].
7. Asadi Sarvestani Kh. Determinants of fertility behavior and contraceptive usage among married women in the productive age: a case study of shiraz county [Dissertation]. Malaysia: University of Sains Malaysia; 2016.
8. Kumar A, Kshatriya GK. Sex Preference and Fertility: A Study among the Ansaris of Meerut District, Uttar Pradesh. *Stud Home Com Sci*. 2013;**7**(2):109-17.
9. Filmer D, Friedman J, Schady N. Development, modernization, and son preference in fertility decisions. *World Bank Policy Res Working Paper*. 2008(4716).
10. Kamal SM, Islam MA. Contraceptive use: socioeconomic correlates and method choices in rural Bangladesh. *Asia Pac J Public Health*. 2010;**22**(4):436-50. doi: 10.1177/1010539510370780. [PubMed: 20659903].
11. Knight J, Shi L, Quheng D. The curious case of son preference and household income in rural China. UK: Centre for the Study of African Economies, University of Oxford; 2008.
12. McDonald P. Low Fertility and the State: The Efficacy of Policy. *Popul Dev Rev*. 2006;**32**(3):485-510. doi: 10.1111/j.1728-4457.2006.00134.x.
13. Sen G, Batliwala S. Empowering women for reproductive rights. In: Presser HB, Sen G, editors. Women's empowerment and demographic processes: moving beyond Cairo. England: Oxford University Press; 2000. pp. 15-36.
14. Wyndow P, Li J, Mattes E. Female empowerment as a core driver of democratic development: A dynamic panel model from 1980 to 2005. *World Dev*. 2013;**52**:34-54.
15. Shavazi MJ. Fertility revolution in Iran. *Popul So*. 2001;**37**:3-4.
16. Chaudhuri S. The desire for sons and excess fertility: a household-level analysis of parity progression in India. *Int Perspect Sex Reprod Health*. 2012;**38**(4):178-86. doi: 10.1363/3817812. [PubMed: 23318167].
17. Grady CD, Dehlendorf C, Cohen ED, Schwarz EB, Borrero S. Racial and ethnic differences in contraceptive use among women who desire no future children, 2006-2010 National Survey of Family Growth. *Contraception*. 2015;**92**(1):62-70. doi: 10.1016/j.contraception.2015.03.017. [PubMed: 25863228].
18. Yucesahin MM, Ozgur EM. Regional fertility differences in Turkey: persistent high fertility in the southeast. *Popul Space and Place*. 2008;**14**(2):135-58. doi: 10.1002/psp.480.
19. Esber A, Foraker RE, Hemed M, Norris A. Partner approval and intention to use contraception among Zanzibari women presenting for post-abortion care. *Contraception*. 2014;**90**(1):23-8. doi: 10.1016/j.contraception.2014.03.006. [PubMed: 24809805].
20. Almuallm A, Khamis Y. Knowledge, attitude and practice of husbands towards modern family planning in Mukalla, Yemen [Dissertation]. Malaysia: University of Sains Malaysia; 2007.
21. Morse JE, Rowen TS, Steinauer J, Byamugisha J, Kakaire O. A qualitative assessment of Ugandan women's perceptions and knowledge of contraception. *Int J Gynaecol Obstet*. 2014;**124**(1):30-3. doi: 10.1016/j.ijgo.2013.07.014. [PubMed: 24156991].
22. Agha S. Intentions to use contraceptives in Pakistan: implications for behavior change campaigns. *BMC Public Health*. 2010;**10**(1):450. doi: 10.1186/1471-2458-10-450. [PubMed: 20673374].
23. Kulczycki A. Husband-wife agreement, power relations and contraceptive use in Turkey. *Int Fam Plan Perspect*. 2008;**34**(3):127-37. doi: 10.1363/1471-2458-10-450. [PubMed: 18957355].
24. da Silva RM, de Araujo KN, Bastos LA, Moura ER. Family planning: significance for women of reproductive age [in Portuguese]. *Cien Saude Colet*. 2011;**16**(5):2415-24. [PubMed: 21655714].
25. Gizaw A, Regassa N. Family planning service utilization in Mojo town, Ethiopia: A population based study. *J Geogr Reg Plann*. 2011;**4**(6):355-63.

26. Barber JS, Axinn WG. New ideas and fertility limitation: The role of mass media. *J Marriage Fam.* 2004;**66**(5):1180-200. doi: [10.1111/j.0022-2445.2004.00086.x](https://doi.org/10.1111/j.0022-2445.2004.00086.x).
27. Hornik R, McAnany E. Mass media and fertility change. In: Casterline JB, editor. *Diffusion Processes and Fertility Transition: Selected Perspectives*. Washington: The national academic press; 2001. pp. 208-39.
28. Dreze J, Murthi M. Fertility, education, and development: evidence from India. *Popul Dev Rev.* 2001;**27**(1):33-63.
29. Huttunen K, Kellokumpu J. The effect of job displacement on couples' fertility decisions. *MARA.* 2012.
30. Schultz TP. *Fertility and income: Economic Growth Center Discussion Paper*. New Haven, USA: Yale University; 2005.
31. Luci-Greulich A, Thevenon O. Does Economic Advancement 'Cause' a Re-increase in Fertility? An Empirical Analysis for OECD Countries (1960-2007). *Eur J Popul.* 2014;**30**(2):187-221. doi: [10.1007/s10680-013-9309-2](https://doi.org/10.1007/s10680-013-9309-2).