



## Review Article: An Alternative Approach to Studying Thailand's Fertility Intention

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### Abstract

The ageing population phenomenon is becoming a global conundrum. One solution to address this problem is to balance the national demographic structure by boosting a country's total fertility. The traditional way of studying this issue is to adopt the rational choice and economic behavior approaches. However, the author is of the opinion that such approaches do not fit within Thailand's context. Thus, the author argues that it would be more appropriate to utilize the Social Institution approach to study and shed light on Thailand's fertility intention.

### Introduction

The ageing population phenomenon, also known as a greying population, is becoming a global problem. Many developed countries such as the United States of America, Canada, most of the countries in Europe, Japan, Singapore, and many other countries have been facing this demographic challenge for almost a decade. The ageing population is challenging because of an imbalance in a nation's population structure. The problem occurs when a nation's fertility and mortality rates decline. In other words, people live longer, and there are fewer newborn babies.

On the one hand, the United Nations, Department of Economic and Social Affairs, Population Division (2013) reported on the situation of Thailand's ageing population and how the proportion of the country's older population dramatically increased by 62 percent in 2010 and is projected to grow by 85 percent in 2030. In addition, Thailand's life expectancy, which has climbed from 55.7 years in 1950 to 68.0 years in 2005,

is projected to reach 77.3 years in 2050. At present, Thailand's life expectancy is 73 years for males and 80 years for females (Institute for Population and Social Research, 2019). Furthermore, Thailand's median age increased from 18.6 years old in 1950 to 27.5 years old in 2000. Thailand's median age is also forecast to more than double in 2025 to 36.6 years and 42.1 years in 2050. However, the recent United Nations reports indicate that Thailand's median age is increasing more quickly than expected, having already reached 38.3 years old in 2019 (United Nations, Department of Economic and Social Affairs, Population Division, 2019). All these statistics lead to the conclusion that a significant number of the elderly population will be a part of Thailand's population structure. On the other hand, Thailand's fertility rate has been dramatically declining from 5.595 children per women in 1970 to 1.671 children per women in 2000, and recent statistics show that Thailand's fertility rate is still continuing to decline to 1.512 children per women in 2016 (World Bank, 2018). Assistant Professor Dr.

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Patama Vapattanawong and Professor Dr. Pramote Prasartkul from the Institute for Population and Social Research, Mahidol University forecast that Thailand's fertility rate would decline to as low as 1.43 children per women in 2030 (Vapattanawong & Prasartkul, 2014).

To reduce the risks associated with an ageing society and the negative consequences, Thailand has to raise the fertility rate of a particular population group, one which is able to provide a better quality of life for newborn babies. At present, there is no official consensus concerning how the country's fertility rate can be used as a guide on how many children per women would ideally increase the country's population ratio. However, peer review research revealed that Thailand's replacement level, or the optimal fertility rate, should be 2.10-2.25 children per woman (Hirschman, Tan, Chamrathirong, & Guest, 1994; Searchinger, Hanson, Waite, Harper, Leeson, & Lipinski 2013; Wilson, 2004).

This paper reviews the alternative approaches to conduct the study on Thailand's fertility intention with the aim of boosting the nation's total fertility.

## Fertility intention

### The theory of Intentionality

Brentano (2014) seems to be the very first scholar who used the word "intention" in 1874. In his famous book entitled *Psychology from an Empirical Standpoint*, he states that Every mental phenomenon is characterized by what the Scholastics of the middle ages called the intentional (or mental) in existence of an object, and what we might call, though not wholly unambiguously, reference to a content, direction toward an object (which is not be understood here as meaning a thing), or immanent objectivity. Every mental phenomenon includes somethings as object within itself, although they do not do so in the same way. In presentation, something is presented, in judgement something is affirmed or denied, in love loved, in hate hated, in desire desired and so on.

The intentional inexistence is characteristic exclusively of mental phenomena. No physical phenomenon exhibits anything like it. We can, therefore, define mental phenomena by saying that they are those phenomena which contain an objective intentionally within themselves (Brentano, 2014). In short, Brentano attempts to explain that intention is the process of mentally directing a behavior toward an object. How people's behaviors represent their mental state is based on the individual experiences and their environment in the past (McIntyre

& Smith, 1989). Therefore, those who have similar intentions do not necessarily behave in a similar manner.

Later, Ajzen (1991) introduces the planned behavior theory in which he suggests that subjective norms, which are the perceived social pressure that influence individuals to perform or not to perform the behavior, would influence the individual's intention to perform a given behavior. Finally, an individual would perform some behavior.

When it comes to the fertility intention, there are a large number of studies on the factors affecting intention (see Social Institutions approach), but the reason behind the intention is rarely found. In Thailand, Chuanwan & Katewongsa (2014) suggest that the intention is to strengthen families' security and to ensure that there is continuity from one generation to another.

## Approaches to studying Thailand's fertility intention

### Rational choice and economic behavior approaches

The ageing society is not a new phenomenon, but it has long been an issue all around the world. This is especially the case in developed countries such as the United States of America, Canada, most of the countries in Europe, and countries such as Japan and Singapore. Recently, the less developed countries and the developing countries are also facing a similar ageing society issue as well. However, there are differences in terms of how the countries are becoming ageing societies when comparing developed countries and developing countries: the population structure in the developed countries are slowly changing, while the population structure in the developing countries are changing rapidly (Cai, 2010; McNown & Ridao-cano, 2004; Ridao-Cano & McNown, 2005).

The reasons for the changes in the population structure which result in an aging society are attributed to the new generation of women who attain higher levels of education (Davia & Legazpe, 2014; Prifti & Vuri, 2013) and the increases in the number of women participating in the labor market (Brewster & Rindfuss, 2000). As a result, the age people get married, the age women give birth the first time, and the length of birth intervals of additional children have all subsequently changed (Davia & Legazpe, 2014; Goedele Van Den & Miet, 2015).

However, many scholars found that the cause of the decline in woman's fertility was not as simple as previously thought. The concepts of rational choice and

economic behavior have been widely used to conduct research on the cause of the fall in woman's fertility in the developed countries. The main idea of the research was that individuals think and act to maximize the benefits they would possibly gain (Day, 1971; Day, 2004). An individual sees that having a baby is a cost, for example the cost of raising a baby, the cost of education, the cost of medication, etc. If the cost is too high, an individual would rather not have a child. If policy makers could lower the cost of having a baby, then the possibility of raising fertility would also be increased (Furtado, 2016). As a consequence, policy makers are more likely to focus on initiating policies which involves a reduction in the cost of having babies such as taxes transferred (Fehr & Ujhelyiova, 2013), childcare subsidies (Masaya, 2013), employment benefits (Prifti & Vuri, 2013; Raymo & Shibata, 2017) and more.

The adoption of the economic behavior and rational choice theories to study the fertility intentions has some advantages, namely that these theories could predict that an economic man would choose the best options in a given situation. The advantage of the theory, however, is the simultaneous disadvantage. In order to predict the outcome, the predictor must possess perfect information on the options available to the economic man. Therefore, it is almost impossible that such information would be available. In addition, the economic behavior and rational choice theories neglect social norms which play an important role in shaping individual behavior. Finally, the economic behavior and rational choice theories tend to lead to a more methodological and individualistic prediction. As a result, it could only explain outcomes at the individual level rather than at a societal one.

To boost the fertility among woman of reproductive age, tax policies have been adopted in a number of developed countries. A tax policy leads to both an increase in income as well as a reduction in expenses. For example, Laroque & Salanié (2014) studied the tax policy on woman's fertility in France. The policy on woman's fertility was that those who have a baby would receive tax reduction, while those who stay single would pay more taxes. Fehr & Ujhelyiova (2013) found that the tax reforms and child benefits in Germany had an impact on the national birth rate after their implementation. Masaya (2013) found that paying a large amount of tax lowers the total household income; therefore, the total fertility was also reduced.

Childcare benefit is also provided to those

woman who have a baby. Fehr & Ujhelyiova (2013) reveal that the birth rate is significantly raised when woman receive childcare benefits. This is because they can get back to work more quickly and have less concerns about their child. In addition, Furtado (2016) found in her study in the United States of America that the existence of large numbers of child care services in the study area lowered the childcare service fees; thus, mothers feel more comfortable to have additional children.

In terms of employment benefits, McNown & Ridao-cano (2004); Raymo & Shibata (2017) suggested that the high rate of male unemployment lowers the total fertility while the high rate of women unemployment affects the rise of total fertility. This is in line with Davia & Legazpe (2014) who suggested that those woman who are participating in the labor market would postpone their pregnancy which would in turn result in the reduction of the number of children they would have. Therefore, providing employment benefits such as leave with pay would be able to increase total fertility.

Although there is empirical evidence that providing benefits to the people of reproductive age could influence their fertility intention, some issues have arisen after the implementation of the policies. First and foremost, the government has to invest a large amount of money to implement these benefits to boost national fertility; hence, there would be a significant burden on the government's coffers as well as an increase in public debt (Fraser, 2001; Ishida, Oguro, & Takahata, 2015). Chen (2011) also suggested that the tax benefits are usually not equally distributed to all income classes, but the tax benefits are more likely to benefit those who are in the higher income class. This kind of problem was also identified in a recent research of Buracom (2011) which revealed that the tax incident and the benefits incidence are not often equally distributed; those who are in the higher income class would gain more benefits from the policies.

In addition to the problem of unequal distribution of benefits, the number of tax payers also plays an important role in the effectiveness of Thailand's fertility-related policies. According to ThaiPublica (2016), there are 55.3 million people who are 15 years old and older in Thailand, and 38.8 million people are participating in the labor market which accounts for 70 per cent of the population who are aged 15 years old and older. However, only 10.3 million people out of 38.8 people who are participating in the labor market file personal

income tax returns. Furthermore, only 4 million people have paid personal income taxes. Such statistics clearly reveal that the fertility-related policies regarding tax benefits may attract at most 4 million people which is a very small number when compared with the total population.

As a result, the policies regarding taxes and transfers may not be efficient enough to attract Thais to boost their fertility. We can also see evidence from the World Bank's data that Thailand's total fertility is still declining despite the implantation of fertility-related policies such as childbearing subsidies, maternity leave, maternity benefits, and long term tax subsidies for a long time.

### **Social institutions approach**

Social institution is the concept which has of late begun to be adopted in studies dealing with population. This is especially the case for social institutions which have employed such theory to explain and distinguish the population growth rates in developed and developing countries in the past. Therefore, the social institutional factors play an important role in prescribing the fertility behavior in a particular area of study.

Scott (2005) states that "Institutional theory attends to the deeper and more resilient aspect of social structure. It considers the process by which structures, including schemas, rules, norms, and routines, become established as authoritative guideline for social behavior". Martin (2004) summarized and used institution and social institution interchangeably, writing that "many socialist equated social institutions with ideas, norms, values, or beliefs with no attention to process or practice". In a similar manner, Miller (1994) suggests that norms and values are associated with social institution. For this reason, social networks such as friends and families are influencing the fertility intention of those women who are in the network. Beside these scholars, there are numerous other scholars such as Zucker (1987); Urpelainen (2011); Parsons (1990); Miller (2019) who define the institution in a similar manner, stating that the institution consists of the values, norms, and beliefs in a particular society which influence the member of that society to make decisions or influence the members' behaviors.

Contrary to the economic behavior and rational choice theories, the institutional theory focuses on social norms which influence individuals in the decision making process which the economic behavior and rational choice theories can not explain. Nonetheless, the institutional theory suggests that the individual relies too

much on social norms. Although the theory reveals that individuals tend to follow social norms, the theory is not able to explain why.

As an extension of the institutional theory, this paper suggests that the researchers focus on and examine the social issues which influence the women's fertility intention. Therefore, the concepts of social institutions need to be explored. According to Miller (2019), the social institution is composed of the rules, norms, and beliefs which have become institutionalized and that regulate the action of different members in the society. This theory describes how different people and actors in society are related to each other and impact one another. Consequently, the collective actions in the society are similar.

The following are social institutions which should be taken into consideration when studying fertility intention.

#### 1. Marriage age and fertility intention

Marriage is the process which facilitates the extension of the social institution unit. The aim of marriage is to strengthen families' security and to ensure that there is a continuity from one generation to another (Chuanwan & Katewongsa, 2014). Although people regard marriage in terms of their desire to value their culture, the younger generation feels financial stability is more important. Hence, they have decided to postpone their marriage and ensure they would have job and financial stability before deciding on marriage and babies (Samutachak & Darawuttimaprakorn, 2014).

Marriage age is one of the important factors which determine fertility intention. Studies in developed countries suggest that the higher age groups have a negative relationship with the reproductive population when it comes to their fertility intention (Fehr & Ujhelyiova, 2013). Billingsley & Ferrarini (2014) studied the fertility intention in 21 European countries and found that women aged 40 years and above tend to lower their fertility intention for their first child. At the same time, women aged 35 years and above have a negative effect when it comes to their fertility intention for their second child. Lastly, all women have a negative effect regarding their fertility intention for their third child and above. In Korea, Park, Cho, & Choi (2010) found similar results for fertility intention when it comes to the second and third child. However, they did not find any relationship among age groups and the fertility intention for the first child. The research results of Luo & Mao (2014) in China suggested that the fertility intention of women

would decrease at the age of 35 and older. McQuillan, Greil, Shreffler, & Bedrous (2015) found that women in the United States of America who are aged 35 and above have a lower fertility intention because they think they are too old to bear children.

In Thailand, the norm for the age of marriage has been gradually increasing since 1960. The average age of marriage in 1960 was 25 years old for males and 22 years old for females. Subsequently, the norm for the age of marriage of Thais shifted to 27 years old for males and 24 years old for females in 2000. In a similar manner, the number of single individuals who are of reproductive age (16-45 years old) accounted for 60 per cent of the total population (Podhisita, 2009). In contrast, married couples accounted for only 37 per cent of the total population. However, the reason cited for marriage postponement is still unknown or inconclusive.

In summary, the research pointed out that age groups have negative effects on the fertility intention. This means that women are less likely to have plans to give birth.

## 2. Family support and division of labor in the Family and Fertility Intention

Family support could be defined as types of family, including nuclear and extended families. In addition, the hours of shared housework must also be taken into account. Having children would consume a great deal of time in order to care for and raise them. Receiving the support of family members such as parents and grandparents would influence the fertility intention (Snopkowski & Sear, 2012). For example, Luo & Mao (2014) found that there is a tendency that women would have a higher fertility intention if there is a person to help mothers take care of their child.

Modernization and the industrialization play important roles in transforming different forms of Thai families. Many Thai families have changed from extended families to nuclear families because the young generation migrate from their hometowns to work in industrialized areas. As a result, the elderly population is left behind in rural areas and the younger population raise their family away from their hometown, resulting in smaller family sizes (Shoichiro, 1997).

In 2018, a survey revealed that the size of the Thai family shifted from an extended family to a nuclear family. A recent survey was conducted in 2018 for the northern region, central region, north-eastern region, and southern region. The result showed that the proportion of extended families accounted for only 28

per cent, and the proportion of single families almost doubled in size, accounting for 43 per cent of the families surveyed (Phuphaibul, Jongudomkarn, Nieamsup, Tejagupta, Kumhom, Wacharasin, & ityasuddhi, 2018). This survey demonstrated that the social value of family members living together has changed.

According to Pimonpan from the Population and Development Newsletter, a similar survey also revealed that the size of Thai families fell from 6.3 people per family in 1964 to 5.3 people per family in 1980. Statistics also showed the size of Thai families shrank even more to an average of 2.7 people per family in 2014 to only 1.6 people per family in 2017. This means that there are large numbers of people who are living alone in Thai society.

When a couple is living together, they need to share their housework. Thus, the division of labor plays a role for people living together. The division of labor in the family does not take into consideration skills, educational level or husband's/wife's qualifications. What the division of labor encompasses are gender, age, and status (Soriano, 1991). Similar to family support, the division of labor in the family is how family members share domestic tasks among each other. Billingsley & Ferrarini (2014) found that family support has a significant effect on fertility intention across European countries. In addition to the support from family members, the hours of shared housework between husband and wife play an important role in the fertility decision. The fertility intention for a second child would increase according to the husband's shared housework and childcare hours (Park, Cho, & Choi, 2010).

## 3. Gendered division of work and fertility intention

Gendered division of work refers to whether husbands or wives are active in paid work (being employed) which has an influence on their fertility intention (Jang, Jun, & Lee, 2017). There is an inverse relationship when it comes to the gendered division of work. More specifically, the increase in employment of wives resulted in lower numbers of total fertility compared with the total fertility of those wives who were not employed (Scanzoni, 1975; Soriano, 1991). Also, the latter tend to also have more children than the former. Hakim (2003) categorized women into three groups: work-focused, home-focused, and combine-focused. She suggested that women who are work-focused, in other words women who are in the workforce, tend to have a lower fertility intention than those who are home-focused

and combine-focused. In addition, Hakim (2003); McQuillan, Greil, Shreffler, & Bedrous (2015) found that women who are employed in a part-time job have a lowered fertility intention. However, they did not find a relationship between women who are employed full-time and their fertility intention. Eguchi, Shimazu, Fujiwara, Iwata, Shimada, Takahashi & Kawakami (2016) conducted a study in Japan, and the results revealed that the fertility intention for additional children is associated with men who are active in the labor market; however, this fact was not associated with women. The study in South Korea also affirmed that gendered division of work influences the fertility intention. Park & Cho (2011) revealed that women who are stay-at-home mothers have higher fertility intention for their second child than women who are employed in full-time employment.

Despite the fact that the women participating in the labor market is not a new phenomenon, there are changes in the family institution from being male dominated with female subordination to one which features more female domination (Soriano, 1991). In the past, most of the women had less participation in the labor market because they had to be responsible for the domestic work and take care of their babies (Scanzoni, 1975). The increase in the number of women participating in the labor market has a direct correlation with the decline in the total fertility in many countries such as Canada, USA, Australia, Japan, UK, Germany, and many more (Brewster & Rindfuss, 2000; Goedele Van Den & Miet, 2015; Soriano, 1991). This is because the woman who are in the labor market are more likely to postpone their motherhood compared to those who are not in the labor market (Davia & Legazpe, 2014). After a certain period of time, these women would feel that they are too old to have a child. Hence, they ultimately decide not to have one (Billingsley & Ferrarini, 2014; Fehr & Ujhelyiova, 2013). However, the participation of the male labor force has an opposite effect on the fertility: the fertility will be reversed when the level of male participation in the labor market reduces (Raymo & Shibata, 2017).

#### 4. Educational level and fertility intention

Formally, Thai social norms viewed that females are unable to attain a high level of education. The National Statistical Office (n.d.) revealed that such social norms in which people do not see the necessity of females attaining a high level of education has changed. The new generation of females attain the same levels of education as males.

Educational level plays an important role when it comes to an individual's fertility intention. Evidently, those women who attain a higher level of education tend to be more modernized. In contrast, those women who are unable to attain a high level of education tend to behave more traditionally. As a result, those women who attain a higher level of education would gain better access to a career path which allows them to have better benefits from society (Scanzoni, 1975; Soriano, 1991). The higher educational level would lead to a better income level; therefore, the population with a higher educational level might not have a higher level of fertility intention if they do not feel that it is worth their while. The evidence has been found in many European countries. Highly educated women are exposed to life course paths that compete with childbearing, but they do not necessarily plan to have larger family sizes than less educated women (Hayford, 2009; Heiland, Prskawetz, & Sanderson, 2008; Mills, Begall, Mencarini, & Tantarri, 2008). Some women in high-status occupations may intend to have fewer children from the beginning of their reproductive careers (Friedman, Hechter, & Kanazawa, 1994), while others may later decide to forgo having some of the children they had initially planned to have over the course of their reproductive careers (Tavares, 2010). Better educated women are more prone to postponing the idea of having children than less educated women (Heaton, Jacobson, & Holland, 1999; Schoen, Astone, Kim, Nathanson, & Fields, 1999); consequently, they are more likely to have fewer children than they had initially intended.

#### 5. Urbanization and fertility intention

People in rural areas were more likely to participate in the agricultural sector; as a consequence, parents hoped that they would gain benefits from having more children to help them carry out their work (Soriano, 1991). Urbanization has played important roles in transforming how Thai families live their lives. Many Thais in rural families have migrated from rural areas to urban areas to work instead of continuing agricultural work from their parents. As a result, the elderly population is left behind and the younger population raise their family someplace else, resulting in smaller family sizes (Shoichiro, 1997).

The data sheds light on the fact that the childbearing rate in the rural areas is much higher than the childbearing rate in urban areas. This is due to the differences of the working styles between those who reside in rural and urban areas. More specifically,

urbanites tend to spend more of their time at their workplaces and spend less of their time at home. In addition, those who are in rural areas are more likely to participate in the agricultural sector. Because of this, the parents hope that they would gain benefits from having more children to help them carry out their work (Soriano, 1991) There is no official study that has been carried out regarding this matter that specifically focuses on Thailand's context. However, revealed in 2000 that the People's Republic of China's life expectancy of their rural population was six years lower than that of the population in the urban areas. In terms of the discrepancy of the fertility rate, *China Daily* reported that there was a large gap when it comes to the fertility rate between people in rural and urban areas. For instance, the average Chinese fertility rate is estimated at two children per woman, but the most urbanized Chinese cities such as Shanghai has a fertility rate of 0.7 children per woman. In addition to this, the urbanization factor was one of the factors influencing fertility intention in China. Therefore, there are valid reasons to believe that urbanization is affecting the national fertility intention.

In summary, the changes taking place in social institutions have led to modern people's fertility intentions. This is an important topic for policymakers to study and understand the demographic changes and their significant impacts in order to determine effective policies to address such issues and mitigate their impacts on the wider society and the country's future economic prospective.

## Conclusion

This paper offers an alternative approach which can be used when studying Thailand's fertility intention. It is argued that the rational choice and economic behavior approaches might not be suitable to Thailand's context because most of the factors which are employed to such studies are related to taxes and transfers. However, in reality, the number/ratio of Thailand's tax payers is small compared to the number/ratio of tax payers in the developed countries where the rational choice and economic behavior approaches were found to be efficient.

Instead of adopting rational choice and economic behavior approaches to study Thailand's fertility intention, the author suggests that the social institutions approach should be adopted. For example, the following questions should be explored. Why do Thais postpone their marriages? How should public policy be

formulated in order to shorten the age at which Thais marry? If the family's support affects the fertility intention of the Thai family, what benefits should the government provide to boost national fertility? What should the Thai government do to deal with lifestyle trends where both the husband and the wife participate in the labor market which in turn result in a lower number of newborn children? How should the government respond to the lower birth rate of people living in the city as a result of urbanization? These could be alternative approaches that have a better fit within Thailand's context, one where family institutions have a greater deal of influence on people's lifestyle choices and behaviors.

## References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Billingsley, S., & Ferrarini, T. (2014). Family policy and fertility intentions in 21 European countries. *Journal of Marriage and Family*, 76(2), 428-445.
- Brentano, F. (2014). *Psychology from An Empirical Standpoint*. London: Taylor & Francis Ltd.
- Brewster, K. L., & Rindfuss, R. R. (2000). Fertility and women's employment in industrialized nations. *Annual review of sociology*, 26(1), 271-296.
- Buracom, P. (2011). The Determinants and Distributional Effects of Public Education, Health, and Welfare Spending in Thailand. *Asian Affairs: An American Review*, 38(3), 113-142.
- Cai, Y. (2010). China's below-replacement fertility government policy or socioeconomic development?. *Population and development review*, 36(3), 419-440.
- Chen, D. (2011). Can countries reverse fertility decline? Evidence from France's marriage and baby bonuses, 1929-1981. *International Tax and Public Finance*, 18(3), 253-272.
- Chuanwan, S., & Katewongsa, P. (2014). *Why women are not married: where have men gone missing*. Bangkok: Institute for Population and Social research, Mahidol University.
- Davia, M. A., & Legazpe, N. (2014). The Role of Education in Fertility and Female Employment in Spain: A Simultaneous Approach. *Journal of Family Issues*, 35(14), 1898-1925.
- Day, R. H. (1971). Rational choice and economic behavior. *Theory and Decision*, 1(3), 229-251.
- Day, R. H. (2004). Behavioral economics: implications for economic theory and policy. *Journal of Socio-Economics*, 33(6), 715-724.
- Eguchi, H., Shimazu, A., Fujiwara, T., Iwata, N., Shimada, K., Takahashi, M., & Kawakami, N. (2016). The effects of workplace psychosocial factors on whether Japanese dual-earner couples with preschool children have additional children: a prospective study. *Industrial Health*, 54(6), 498-504.

- Fehr, H., & Ujhelyiova, D. (2013). Fertility, Female Labor Supply, and Family Policy. *German Economic Review*, 14(2), 138-165.
- Fraser, C. D. (2001). Income Risk, the Tax- Benefit System and the Demand for Children. *Economica*, 68(269), 105-125.
- Friedman, D., Hechter, M., & Kanazawa, S. (1994). A theory of the value of children. *Demography*, 31(3), 375-401.
- Furtado, D. (2016). Fertility Responses of High-Skilled Native Women to Immigrant Inflows. *Demography*, 53(1), 27-53.
- Goedele Van Den, B., & Miet, M. (2015). Female employment reduces fertility in rural Senegal. *PLoS ONE*, 10(3), 1-15.
- Hakim, C. (2003). A new approach to explaining fertility patterns: Preference theory. *Population and development review*, 29(3), 349-374.
- Hayford, S. (2009). The evolution of fertility expectations over the life course. *Demography*, 46(4), 765-783.
- Heaton, T. B., Jacobson, C. K., & Holland, K. (1999). Persistence and Change in Decisions to Remain Childless. *Journal of Marriage and Family*, 61(2), 531-539.
- Heiland, F., Prskawetz, A., & Sanderson, W. (2008). Are Individuals' Desired Family Sizes Stable? Evidence from West German Panel Data. *European Journal of Population / Revue européenne de Démographie*, 24(2), 129-156.
- Hirschman, C., Tan, J., Chamratrithirong, A., & Guest, P. (1994). The path to below replacement-level fertility in Thailand. *International Family Planning Perspectives*, 20(3), 82-107.
- Institute for Population and Social Research. (2019). *Mahidol Population Gazette: Population of Thailand, 2019*. Retrieved September 29, 2020, from <http://www.ipsr.mahidol.ac.th/ipsr/Contents/Documents/Gazette/Gazette2019TH.pdf>
- Ishida, R., Oguro, K., & Takahata, J. (2015). Child benefit and fiscal burden in the endogenous fertility setting. *Economic Modelling*, 44(C), 252-265.
- Jang, I., Jun, M., & Lee, J. E. (2017). Economic actions or cultural and social decisions? The role of cultural and social values in shaping fertility intention. *International Review of Public Administration*, 22(3), 257-275.
- Laroque, G., & Salanié, B. (2014). Identifying the response of fertility to financial incentives. *Journal of Applied Econometrics*, 29(2), 314-332.
- Luo, H., & Mao, Z. (2014). From fertility intention to fertility behaviour. *Asian Population Studies*, 10(2), 195-207.
- Martin, P. Y. (2004). Gender As Social Institution. *Social Forces*, 82(4), 1249-1273.
- Masaya, Y. (2013). Can child-care support policies halt decreasing fertility?. *International Journal of Economics and Financial Issues*, 3(2), 409-419.
- McIntyre, R., & Smith, D. W. (1989). Theory of intentionality. In W. R. McKenna & J. N. Mohanty (Eds.), *Husserl's Phenomenology: A Textbook*. Washington D.C.: University Press of America.
- McNown, R., & Ridao-cano, C. (2004). The Effect of Child Benefit Policies on Fertility and Female Labor Force Participation in Canada. *Review of Economics of the Household*, 2(3), 237-254.
- McQuillan, J., Greil, A. L., Shreffler, K. M., & Bedrous, A. V. (2015). The importance of motherhood and fertility intentions among U.S. women. *Sociological Perspectives*, 58(1), 20-35.
- Miller, S. (2019). Social Institutions. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Summer 2019 ed.): Metaphysics Research Lab, Stanford University.
- Miller, W. B. (1994). Childbearing motivations, desires, and intentions: a theoretical framework. *Genetic, social, and general psychology monographs*, 120(2), 223.
- Mills, M., Begall, K., Mencarini, L., & Tanturri, M. L. (2008). Gender equity and fertility intentions in Italy and the Netherlands. *Demographic Research*, 18(1), 1-26.
- Park, S. M., & Cho, S. i. (2011). Factors associated with second childbirth intention: focusing on value of children in Korean married women. *Journal of Reproductive and Infant Psychology*, 29(3), 292-304.
- Park, S. M., Cho, S. I. L., & Choi, M. K. (2010). The effect of paternal investment on female fertility intention in South Korea. *Evolution and Human Behavior*, 31(6), 447-452.
- Parsons, T. (1990). Prolegomena to a Theory of Social Institutions. *American Sociological Review*, 55(3), 319-333.
- Phuphaibul, R., Jongudomkarn, D., Nieamsup, T., Tejagupta, C., Kumhom, R., Wacharasin, C., & ityasuddhi, D. (2018). Structural Change of Thai Families, according to Family Life Cycle: A Preliminary Study. *Journal of Demography*, 34(1), 1-15.
- Podhisita, C. (2009). Nuptiality Change in Thailand, 1960-2000 :Implication for Future Fertility. *Songklanakarin : E-Journal of Social Sciences & Humanities*, 15(5), 140-165
- Prihti, E., & Vuri, D. (2013). Employment protection and fertility: Evidence from the 1990 Italian reform. *Labour Economics*, 23(C), 77-88.
- Raymo, J., & Shibata, A. (2017). Unemployment, Nonstandard Employment, and Fertility: Insights From Japan's "Lost 20 Years". *Demography*, 54(6), 2301-2329.
- Ridao-Cano, C., & McNown, R. (2005). The effect of tax- benefit policies on fertility and female labor force participation in the United States. *Journal of Policy Modeling*, 27(9), 1083-1096.
- Samutachak, B., & Darawuttimaprakorn, N. (2014). *Lifestyle, life plans and the decision to have children among generation Y*. Paper presented at the Birth and Security in Population and Society, Bangkok.
- Scanzoni, J. H. (1975). *Sex roles, life styles, and childbearing : changing patterns in marriage and the family*. New York: Free Press.
- Schoen, R., Astone, N. M., Kim, Y. J., Nathanson, C. A., & Fields, J. M. (1999). Do Fertility Intentions Affect Fertility Behavior? *Journal of Marriage and Family*, 61(3), 790-799.



- Scott, W. R. (2005). Institutional theory: Contributing to a theoretical research program. *Great minds in management: The process of theory development*, 37(2), 460-484.
- Searchinger, T., Hanson, C., Waite, R., Harper, S., Leeson, G., & Lipinski, B. (2013). *Achieving replacement level fertility*. Retrieved September 29, 2020, from [http://www.wri.org/sites/default/files/achieving\\_replacement\\_level\\_fertility\\_0.pdf](http://www.wri.org/sites/default/files/achieving_replacement_level_fertility_0.pdf)
- Shoichiro, T. (1997). *Family, community, and modernization in Asian societies : Japan, Vietnam, and Thailand*. Fukuoka, Japan: Fukuoka, Japan : Asian-Pacific Center.
- Snopkowski, K., & Sear, R. (2012). Kin influences on fertility in Thailand: Effects and mechanisms. *Evolution and Human Behavior*, 34(2), 130-138.
- Soriano, G. (1991). *The changing role of the family as a social institution in development in the Asia-Pacific region*. New York : ESCAP.
- Tavares, L. (2010). *Yearning, learning and conceding: (Some of) the reasons people change their childbearing intentions*. In (Vol. 029): "Carlo F. Dondena" Centre for Research on Social Dynamics (DONDNA), Università Commerciale Luigi Bocconi.
- The National Statistical Office. (n.d.). *Gender Statistics*. Retrieved September 29, 2020, from <http://web.nso.go.th/gender/edu.htm>
- ThaiPublica. (2016). *Unveiling the Latest Data Base of Tax Payers for 2016*. Retrieved September 29, 2020, from <https://thaipublica.org/2016/01/personal-income-tax-structure-29/>
- United Nations, Department of Economic and Social Affairs, Population Division. (2013). *World Population Ageing 2013*. New York: The United Nations.
- United Nations, Department of Economic and Social Affairs, Population Division. (2019). *World Population Prospects 2019*. Retrieved September 27, 2020, from <https://population.un.org/wpp/>
- Urpelainen, J. (2011). The origins of social institutions. *Journal of Theoretical Politics*, 23(2), 215-240.
- Vapattanawong, P., & Prasartkul, P. (2014). *The situation of births during the past half century*. Paper presented at the Birth and Security in Population and Society, Asia Hotel, Bangkok.
- Wilson, C. (2004). Fertility below replacement level. *Science (New York, N.Y.)*, 304(5668), 207.
- World Bank. (2018). *Fertility rate, total (births per woman)*. Retrieved September 29, 2020, from [https://data.worldbank.org/indicator/SP.DYN.TFRT.IN?locations=TH&name\\_desc=true](https://data.worldbank.org/indicator/SP.DYN.TFRT.IN?locations=TH&name_desc=true)
- Zucker, L. G. (1987). Institutional Theories of Organization. *Annual Review of Sociology*, 13(1), 443-464.