

**VASECTOMY INTENTION AMONG MALE LIMITERS
IN INDONESIA**

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Thesis
entitled
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IN INDONESIA**

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ABSTRACT

During the last five decades, Indonesia has not had any significant increase of vasectomy adoption as a result of strong stigmatization and beliefs against this method. Socio-economic and demographic factors, subjective norms, attitude toward vasectomy, and role of the media are considered important issues among currently married males regarding intention to have a vasectomy. This study aimed to investigate vasectomy intention among current married males who no longer want to have any more children and would consider vasectomy as their family planning method (male limiters) in Indonesia and analyze factors that are associated with vasectomy intention among male limiters in Indonesia.

This study is based on a cross-sectional study among 2,385 participants of IDHS 2012. Questions on vasectomy intention were from the standard IDHS 2012 current married male questionnaire. Descriptive statistics and bivariate analysis (χ^2 test) were employed. It was found that 16.6% of male limiters had intention to use vasectomy, and 83.4% had no intention to use vasectomy in the future. The vasectomy intention among male limiters in Indonesia is statistically significantly associated with ideal number of children, castration, and achieved ideal family size, attitude towards vasectomy, and printed media (pamphlets) with p -value < 0.05 . This implies that promotion of male intention to use on vasectomy is strongly required. Higher monetary incentives, seminars on vasectomy benefits, and reversible clinics should be provided. Also, the government should develop cooperation with religious associations and religious leaders. Activities involving males in family planning occasions, advertisements for vasectomy for newly married couples, and revised family planning advertisement content are also recommended. These would help improve vasectomy prevalence in Indonesia.

KEY WORDS: CURRENT MARRIED MEN / VASECTOMY/FAMILY
PLANNING / MALE LIMITERS / INDONESIA

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CHAPTER I

INTRODUCTION

1.1 Background of the Study

Initially, male sterilization (vasectomy) has been found as one of human reproductive control regulations for more than 100 years ago, (Huber, 1983) but it seems not having any significant correlation on assisting family planning program to be more advanced and able to control birth adequately. It might have correlation to the controversies confounding to social, philosophic, demographic, legal, and medical aspect for more than a century, which spurred the acceptor for constantly not believing this safe and efficient method (Sheynkin, 2009).

Recently, sterilization has shown large disparity on its proportions between male and female sterilization in developing countries, particularly Indonesia (IDHS, 2007). Even the method ever had a success story in some countries such as, India with their massive official movement of vasectomy during early 1950's to 1970's with 78,000 annual sterilization cases conducted in Ernakulam camp (Sheynkin, 2009). However, statistically, vasectomy services started to decline gradually compared to other types of contraceptive methods afterwards until these days (Atkins, 1983). In India, vasectomy lost its credibility and never regained its popularity and even became one of the crucial factors in bringing down Gandhi government who applied male coercive compulsory sterilization (Sheynkin, 2009).

In 1986, the vasectomy prevalence in India was nearly 22% while Panama was the highest among developing countries with 30%. Furthermore, Korea and China stood at 28%, and nearly 25% of couples relied on vasectomy, respectively (Ross, 1986). It was considered as the extraordinary achievement at that time regarding to their huge number of population. Ross (1986) also described that Thailand as the adjacent country to Indonesia had 22% of vasectomy prevalence, which means Indonesia was outnumbered since the last four decades in terms of vasectomy utilization among Asian countries (Ross, 1986).

Based on data collected in mid-1990, it was revealed that the highest prevalence of vasectomy only available in industrialized world. However, there were only 2 developed countries among top 10 countries, namely Australia and Canada had highest prevalence of male and female sterilization (Glasier, 2010). In 2003, 4.5% vasectomies were performed globally. However, those numbers were varied among countries (Glasier, 2010).

Table 1.1 Worldwide Use of Vasectomy among Married Women of Reproductive Age (15-49), 2007

Region	Percent Married Women of Reproductive Age Using	Number of Users (000)
Africa	0.1	0.2
Asia	3.0	22.5
Latin America/Caribbean	2.0	1.9
Europe	3.0	2.9
North America	12.0	4.1
Oceania	10.0	0.5
World	2.9	32.8

Source: UN, World Contraceptive Use 2007 (wall chart). New York: United Nations, Department of Economic and Social Affairs, Population Division; 2008 and PRB. Family planning worldwide 2008 data sheet. Washington DC; PRB; 2008 (Pile & Barone, 2009)

In the developed countries normally have more than 5 percent of couples relied on vasectomy. While in the developing countries, the overall vasectomy prevalence rate was 2.5 percent (Pile & Barone, 2009). For instance, in USA, vasectomy is considered as underrated in comparison to other contraceptive methods, especially tubal ligation with just around 6% of males relied on sterilization compared to 17% of females who perform surgical procedures for tubal ligation (Shih, Turok, & Parker, 2011). Vasectomy prevalence exceeded more than 10% in eight countries namely, Australia, Bhutan, Canada, Netherlands, New Zealand, Republic of Korea, Great Britain, and USA (Pile & Barone, 2009).

If we focused on the most populous country, China and India as the representatives of Asia had contributed almost two-thirds out of 32 million couples worldwide who used vasectomy. China and India themselves had 20 million vasectomy performed (Pile & Barone, 2009).

In contrast, as the fourth most populous country in the world, Indonesia was less likely to fully adopt this reversible method. Glasier (2010) argued that vasectomy was an irreversible method - with just only 0.2% of total CPR. As the result, vasectomy was proven unable to support birth control as the main purpose of family planning in Indonesia, which might affect Total Fertility Rate, indirectly. Where, TFR was rated to be stagnant at 2.6 in last decades (IDHS, 2012).

In Indonesia, men are less likely to go for vasectomy due to stigmatization or rumors which spread out among societies (NPFPPB of Kepri, 2008). It is predicted that the prospective adopter's reluctance to accept vasectomy engaged to several factors; most men believed vasectomy would decrease masculinity and manhood, fear of surgical procedures, and "norms" towards family planning, which is becoming a common belief that contraceptive use is supposed to be wife's responsibility (IDHS, 2012).

However, the National Population and Family Planning Board (NPFPPB) of Indonesia have set a priority to promote male sterilization since 1970 by sending their officers to attend a training in Thailand (NPFPPB of Kepri, 2008). Beside that, NPFPPB also provides some amount of incentives to increase the number of vasectomy acceptors throughout the country. The incentives aimed to support vasectomy services over 50 years of family planning history in Indonesia. It was distributed to the stakeholders that involve in any vasectomy events, such as health attendance (midwives, medical doctors) from the Ministry of Health, acceptors, and the FP field officers (Basic Unit Price of NPFPPB of Indonesia, 2013).

However, giving the incentives was likely to be useless due to "fatwa"¹ haram stated by the religious leaders of MUI (Clerical Association of Indonesia) against sterilization. The suggestion not to go for vasectomy law was enacted in 13 June 1979, and then it was revised several times in 1983, and 2009, where it was not

¹ Fatwa : decision or formal advice taken by an organization or individual who recognized his authority, given by a mufti or cleric, as responses or answers to questions posed by requesting a fatwa (mustafti) that has no bound. Thus fatwa requester does not have to follow the contents or legal fatwa given to him (taken from :<http://wikipedia.org.id> 31 August 2014)

too different in terms of contents compared to the previous regulations. MUI suggested Islam followers to avoid vasectomy as means of birth control (Lubis, 2009). But later on, MUI gave the permission to the constituents to be vasectomy adopters in 2012 (Tempo, 2012). However there was no significant effect to the increase of vasectomy adopters. In the meantime, Prof. Dr. Abdullah Syah, the leader of MUI of North Sumatera Province stated different point of views regarding sterilization. He insisted vasectomy and tubal ligation to be forbidden. "Vasectomy is haram (forbidden), the government suggested not campaigning openly on vasectomy either publicly as a form of contraception to the public". (<http://sumut.kemenag.go.id/index.php?a=berita&id=110410>, accessed on August 30th, 2014).

In addition, the phenomenon is also happening among the Catholic followers in Indonesia, which has slightly similar viewpoint as the Islamic religious leaders towards vasectomy. Church teaching believed sexuality is unitized and has procreative dimension, the intention of sexual intercourse is done in the context of a valid marriage bond in order to maintain unity, goodness and happiness of husband and wife (*bonum coniugum*), and also focused on the birth of a new human (*bonum proles*) (Tarpin, 2012).

Meanwhile, in the eastern region of Indonesia, for instance Bali Province, as the majority of Hindu followers, concept of male sterilization is more likely to be widely acceptable among men. Hinduism believes that contraceptives are created from science, and science is used for human well-being, will be approved by the Hindu Dharma and considered as not against with their teachings. Even the use of contraceptives is set to match the village or place, time, and *patra* (condition) (<http://repository.usu.ac.id/bitstream/123456789/21977/3/Chapter%20II.pdf> as accessed on 21 April 2014).

However, it was revealed that the number and proportion of the vasectomy prospective adopters in Bali was relatively similar to the other big provinces in Indonesia (IDHS, 2012).

1.2 Problem Identification and Justification

Even though Indonesia is well-known as one of South East Asian countries with a success history of fertility decline for more than 40 years since 1970. There are some unsolved problems remain “haunting” the policy makers associated to family planning program, since this remarkable provision applied in Indonesia in early 1968 in line with the establishment of National Family Planning Board.

It seemed that male sterilization (vasectomy) showed unpromising development over the last 4 decades. Male sterilization (vasectomy) as one of effective and reversible method was less likely became the ultimate option for family planning of the married couples in Indonesia. It was proved where only 0.2 percent of family planning acceptors used vasectomy as their main methods (IDHS, 2012). In contrast, Contraceptive Prevalence Rate (CPR) in Indonesia shows a convenient progress in the last 20 years by reaching almost 65 percent in 2012 (see Figure 1.1).



Figure 1.1 CPR Trend in Indonesia

Source : IDHS 2007 & IDHS 2012

As shown in Figure 1.1, Indonesia showed a positive progress on decreasing the Total Fertility Rates (TFR) during those periods. However, it was revealed that TFR remained steady at 2.6 within the last 10 years.

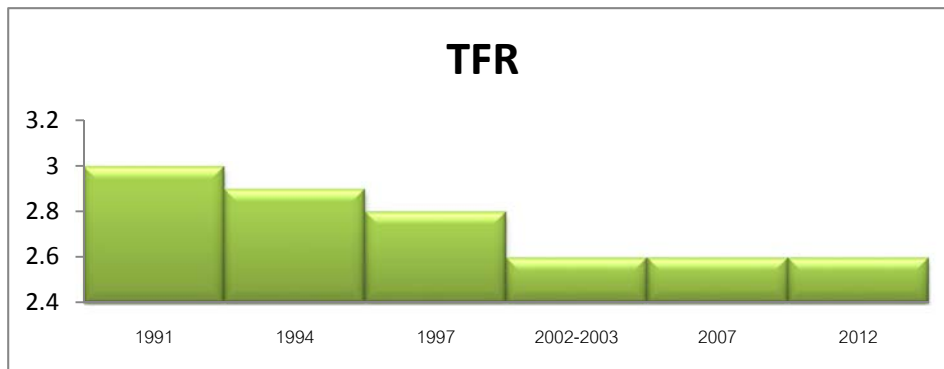


Figure 1.2 TFR Trends in Indonesia 1991-2012

Source: IDHS (2003); IDHS (2007); IDHS (2012)

Furthermore, starting from 1987 when first IDHS survey was conducted till the most recently one in 2012; the total number of males involved in long term contraceptive method, especially vasectomy was the lowest among the other contraception methods. It was only less than 1 percent of males used this method. Moreover, in comparison to the previous IDHS 2002/2003 and 2007, the declining trends showed from 0.4 in 2002 percent to 0.2 percent in 2007 (Wahyuni & Oktriyanto, 2011).

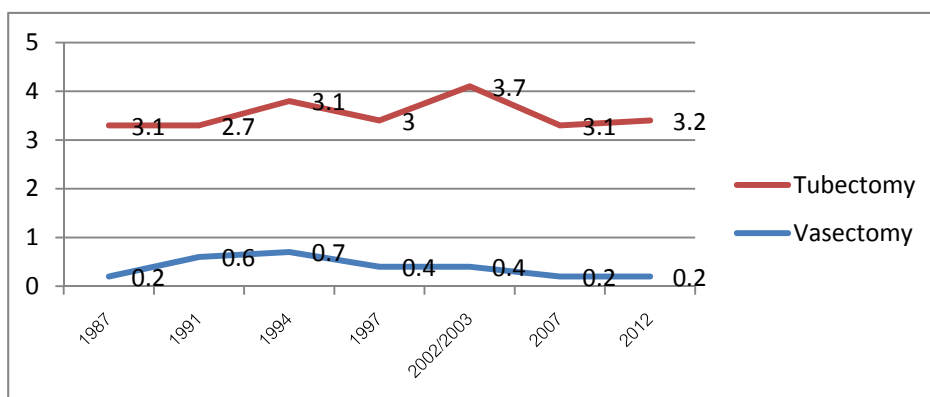


Figure 1.3 Trends of Male and Female Sterilization in Indonesia

Source: (Wahyuni & Oktriyanto, 2011) (IDHS 2012)

From the figures above, it confirms that the number of participants on male sterilization (vasectomy) was very low. It also shows a declining trend with just around 0.2% in 2012 compared to 0.4% in IDHS 2007. Thus, male sterilization contraceptive method showed a slow pave increase since 1987, except in 1991 and 1997.

Ironically, it was found that the age group with the highest rate of sterilization was 45-49 years old cohort with 0.5 percent for both males and females.(IDHS, 2012). As the result, the promotion of permanent method as one of the supporting factors of long acting contraceptive methods regarded to be unsuccessful. It is heavily influenced by many factors, for instance, the lack of male participation in the success of family planning programs, especially the use of contraceptive methods. It is assumed that this fact can't affect the fertility rate in general. NFPPB regards sterilization didn't give any support for the fertility level in Indonesia (Wahyuni & Oktriyanto, 2011).

A study conducted by the Central Research and Development of Biomedical and Health Reproduction of NFPPB in Jakarta, DI Jogjakarta, West Java, and South Sumatra in 1999 found that less of health services, wife disapproval, and lack of knowledge on family planning program method especially male sterilization and less option on male contraception became the most influenced factors of male participation (Wahyuni & Oktriyanto, 2011).

On the other hand, a study conducted in Korea showed different fact. In this country, vasectomy has become the most popular method to prevent birth by most of males. Since vasectomy was established in 1962 by the government, it was noted that more than 47,000 males had voluntarily participated in this campaign by the end of 1974. This success was affected by the serious and consistent policy of their government to give free services for males who decided to manage their birth control. Worldwide, it was estimated for around more than 20 million males were participated in vasectomy in those periods. More than 10 percent of them were accounted as Indian and American males with just around 16.5 million adopters (Lee HY, 1975 in Schima and Lubel, 1976).

Based on the findings of the international conference on vasectomy in 1982 in Sri Lanka which had main purposes addressing the major barriers of vasectomy in 25 countries, many factors that affected the low interest in using vasectomy men linked to the socio-cultural aspects, such as blatant misinformation of vasectomy, castration, loss vitality or body hair, and change the voice and personality (Atkins and Jezowski, 1983).

The other obstacles are the dominant profiles of men in various aspects of life which are known as “Machismo Complex” in Latin America and Middle East of Asia culture as well as many other patriarchy societies worldwide. The other barrier are perceived physiological changes such as postoperative side effects and stigmatization (Atkins, 1983).

In addition, IDHS 2012 report illustrated that males have tendencies to avoid family planning practice themselves but rather leave their responsibility to their wives by letting them using contraception rather than taking the initiative to prevent the birth and STD by themselves.

In terms of regional development, male population in western region (Sumatera, Java), which consists of 16 provinces reported that as much as 0.1% of males involved in using vasectomy/male sterilization. This data were taken from 6,763 married female respondents in IDHS 2012 based on their contraceptive method use. This fact wasn't relevant with the high level of the knowledge of modern methods which illustrated around 96% of male respondents knew about birth prevention methods (IDHS, 2012). This condition is not too much different from the Eastern Region of Indonesia (Bali, Nusa Tenggara, Kalimantan, Sulawesi, Maluku and Papua). Region, which consists of 17 provinces, reported that just around 0.13% of males participated in male sterilization. This data were based on 5,834 female respondents (IDHS, 2012).

It is assumed that this condition was engaged with the strong stigma of manhood, which still exists as a part of patriarchy societies. In fact, men were less likely to have their interest on this permanent and effective method due to their perception and misinformation from their friends. (Landry, 1995). Probably, most males in Indonesia believe that being sterilized will affect their sexual activities such as erectile dysfunction and also their worries of the side effects will affect their sexual orientation in terms of their passion to have sexual intercourse with their couples, and other related reasons. Wahyuni and Oktriyo (2011) argued that the low level of male sterilization was affected by the gender “bias” and the uncertainty of two majority religious leaders, namely Islam and Christian on religious doctrines towards male sterilization.

In addition, spousal communication towards vasectomy selection is believed to be a stimulus factor for men having sterilized. Over decades, men have an important role on influencing woman decision-making on contraceptive methods. It is more important to explore how joint responsibility among husbands and wives would affect vasectomy decision in Indonesia. Therefore, the previous study in 6 different countries revealed that in US, women played a significant role in making their choice either tubal ligation or vasectomy.(Landry, 1995). The questions on vasectomy were included in IDHS 2012 survey in order to explore married men's perception, knowledge and their intention to undergo vasectomy when reaching their ideal family size. There were no questions to explore married women perception and their willingness to support their couples for vasectomy adoption.

1.3 Research Question

What are the factors affecting vasectomy intention among married male limiters in Indonesia?

1.4 Objectives

1.4.1 Ultimate Objective

This study is aimed to provide research findings to support the policy makers to design strategies and programs related to vasectomy promotion.

1.4.2 Specific Objectives

- To identify socio-economic and demographic backgrounds that may affect male limiters to adopt vasectomy.
- To describe the inference of subjective norm factors on vasectomy intentions as the primary contraceptive methods among married male limiters.

- To explore the inference of attitudes towards vasectomy (advantages and disadvantages) and vasectomy intention among married male limiters
- To explore the inference of source of information and vasectomy intentions among married male limiters
- To explore the effect of spousal communication and vasectomy intention among married male limiters

CHAPTER II

LITERATURE REVIEW

This chapter presents about review of the theoretical and empirical literatures that contribute to the concept in the study model and the relationship among the concepts which results in the analytical framework factors vasectomy intention among male limiters in Indonesia.

Perhaps, not everyone is familiar with male sterilization (vasectomy) particularly in Indonesia with less than 30% of current married male age 15-54 knew about vasectomy.(IDHS, 2012) Vasectomy is one of medical procedure and methods due to prevent pregnancies for male that have been known for centuries. However, it was only 40 years of social science research conducted engaged to this modern and effective methods.(Ringheim, 1993) Human Reproduction Program of the WHO carried out research that has contributed to the understandings of factors, which affect the acceptability, and prevalence of use of male sterilization, in 1972. (Ringheim, 1993)

Cambridge dictionary defines vasectomy as the medical operation of cutting the tubes through which a man's sperm move, in order to stop his partner getting pregnant. Other definition describe that vasectomy is a surgical procedure designed to make a man sterile by cutting or blocking both the right and left vas deferens, the tubes through which sperm pass into the ejaculate.(medterm.com) While National Family Planning and Population Board (NFPPB) of Kepulauan Riau Province, Indonesia in one of their official publication (2008) defined vasectomy as a method of permanent contraception for men (the way the family planning) with a low cost, effective, simple, and safe, that is by cutting both vas deferens (vas deferens) that at the time of ejaculation semen no longer contains sperm removed so there will be no pregnancy.

In this study, vasectomy intention is defined as current married men ages 15-54 year old who know vasectomy and the willingness of married male limiters to

adopt vasectomy when they no longer desire for any more children. The target groups included married men aged 15-54 and their wives did not have tubal ligation.

2.1 Vasectomy History

Sheynkin (2009) in his essay "History of Vasectomy" described that vasectomy definition actually less explored the actual procedure of vasectomy operation itself, because only part of the vas deferens are cut in the procedure.

In Europe, Marie Stopes International foundation has a significant role on promoting vasectomy in England since 1958.(The Simon Population Trust, 1969 in Sheynkin 2009). Between 1970 to 1980, several western european countries published a new statutory provisions engaged to vasectomy legalization. Soon afterwards, England and Wales applied vasectomy into National Health Service in 1972.(Sheynkin, 2009).

Meanwhile, decades later, Chinese expert in Vasectomy, Dr. Li Shunqiang, the Director of Chong Qiang Family Planning Scientific Research Institute, began to introduce the no-scalpel vasectomy (VTP) as a means of permanent contraception surgical technique and equipment are simple non-invasive and safer in 1974.(NPFPB, 2013)

In another part of Asia, Thailand has established themselves as one of the pioneers for vasectomy. It was proven by large numbers of men received vasectomies during festivals held on the King's Birthday. (Nirapathpongporn, 1990 cited in (Sheynkin, 2009). In addition, Muangman and Gojaseni (1990) cited in (Jacob, 1992) wrote that 185 out of 292 men who were adopters at Ramathibodi Hospital, Bangkok acknowledged that vasectomy was well accepted by participants, because it was regarded as safe and efficient method.

Behind all of that success, vasectomy history also had controversial elements due to promotion in Asia. It was known that the government gave some incentive payment to the stakeholders, such as, providers and acceptors. In some countries, major incentive payments with coercion were used because the money offered for sterilization equaled or surpassed monthly salaries. These aggressive programs were focused on mostly poor and less informed social groups. This approach

to vasectomy reached a new level during India's emergency period (1975-1977). Over these 2 years, during which government made an extraordinary effort toward the goal of reducing the population, almost 7 percent of all Indian couples were sterilized. A total of 6.2 million vasectomies were performed in 1976, almost 5 million more than in 1975. (Liskin, 1983 et al, on (Sheynkin, 2009)

In Indonesia, vasectomy has begun to introduce to the people soon after government officially established The National Family Planning Board (NFPB) in 1970 by enacted President Decree No. 8 1970. After changing name several times due to institutional reason since 1957. Historically, NFPB was pioneered from Indonesia Family Planning Association (PKBI, in Bahasa). (NFPB, 2013)

Initially, BKKBN sent a team of the surgeons to review about vasectomy field application towards family planning program to India in 1970. Immediately afterwards, Indonesia began to adopt this method and started to apply in some big cities, such as, Jakarta (capital city), Semarang (Central Java Province), Surabaya (East Java Province), and Yogyakarta. (NFPB, 2013)

Later on, in 1988, Dr. Aphicart Narapathpongorn from Thailand introduced Non Scalpel Vasectomy (NSV) to some expert in Indonesia, and in the following year, Prof. Dr. Widjoseno Gardjito, and his colleagues flew to Thailand to learn NSV in the First International Training Course on no-Scalpel Vasectomy which was conducted in Bangkok. (NFPB, Bing and Huang, 2000 cited in (Sheynkin, 2009).

2.2 Vasectomy Review

Globally, after remaining increase in the 1990, the number of vasectomy recipients has fell down to similar level in 1980's. In 2005, 38 million men were predicted underwent vasectomy surgery, it was sharply decline from 1990 periods where 42 million couples relied on vasectomy as their main contraception methods. (Pile & Barone, 2009)

The upward and downward trends of male participation in Family Planning Program especially Vasectomy has been recognized since this method began to introduce almost centuries ago. (Sheynkin, 2009)

From the US history, vasectomy reached their popularity since 1960. It was proven by the number of men underwent surgical procedures in this developed country. It was marked around 45,000 men has voluntarily chose this long acting contraceptive method as their birth control method.(Province, 2008) In addition, from the newer study discussed that nearly a half million men were undergo vasectomy annually in US. (Marquette et al 1995 on (Sandlow, 2001) It is noted both US and Canada have 13 percent of men used vasectomy.

While Einkbeiner, Wieland, and Mosher (1992) on (Purwoko, 2000) in his thesis wrote that there were 550,000 male in US underwent vasectomy surgery in 1970. It means 1 out of 7 married male in 30-44-age cohort has had vasectomy.

On a world scale, even though there was no any concrete data or related in conditions and recent survey of vasectomy in the early phases of the development of family planning programs which began to be widely accepted among governments all over the world in after World War II, but it can be said, vasectomy had their upward and downward trends.(Sheynkin, 2009)

At the moment, worldwide, less than 3 percent of married women of reproductive age rely on their partner's vasectomy for contraception.(United Nation, Bureau PR, 2008 on(Shih et al., 2011)) Female sterilization is approximately twice as common as vasectomy in the developed world, 8 times more common in Asia, and 15 times more common in Latin American and the Caribbean.(Pile and Baron, 2009 on (Shih et al., 2011)

Vasectomy is only more popular than female sterilization in five countries, namely, Bhutan, Canada, Netherland, New Zealand, and Great Britain. New Zealand has the highest vasectomy prevalence among married couples of reproductive age at 20 percent. (Pile and Baron, 2009 on (Shih et al., 2011)

A study conducted in US proved that there was a significant distinction between tubal ligation and male sterilization (vasectomy). Approximately, 17 percent of women between 15 and 44 years have had tubal sterilization, while only 6 percent rely on male sterilization. Based on the National Survey of Family Growth (NFSG) in the United States, approximately 10.3 million women used female sterilization and approximately 3.7 million men received vasectomy as their form of contraception. (Mosler and Jones, 2010 on (Shih et al., 2011)

In another study conducted in US described that vasectomy was less popular than tubal ligation. In 1995, a proportion of women counted on female sterilization were nearly three times compared to male sterilization (vasectomy), or around 28 percent to 11 percent.(Hendrix et al, 1999, Kjersgaard AG et al, 1989, Smith, Taylor and Smith KF, 1985 on(M. A. Barone, Hutchinson, Johnson, Hsia, & Wheeler, 2006)) US has had a golden periods of sterilization during 1960 -1970, however, vasectomy rate was gradually decline and they got stagnant and remain stable ever since.(Chandra, 1998 on (Barone, Huthcinson, Johnson, Hsia, & Wheeler, 2006)

For instance, in 1991 and 1995, as much as 500,000 vasectomies were up to the operating theatre. Based on the number of male population at that time, it was represent 10 out of 1000 US men aged 25-49 were undergo surgical procedure.(Magnani et al, 1999 on (M. A. Barone et al., 2006)

In addition, in a newer study which conducted in US estimated that there were approximately, 3,646,339 (6.6%) male who have undergone vasectomy. (Sharma et al., 2013)

On the contrary, in Indonesia, vasectomy has never obtained their golden periods and popularity in one or two decades as likely as other upward vasectomy trends around the globe, i.e.; 1980 to 1990. Despite of those periods, government and international organization has fully support to assist family planning programs including modern male contraception methods. (Wahyuni, 2011) Nationally, government has set the priority for men to be involved regarded to family planning as well described in Short Plan of National Development Goals 2004-2009.(Ekarini, 2008)

For instance, in Boyolali District of Central Java Province, the local authority has set the appropriate strategy to increase male participation since 2007 to eliminate stigma that family planning always confounding to women only. They made a pilot project in 10 sub-district to encourage and boost up men involvement.(Ekarini, 2008)

However, IDHS 2007 reported the proportion of vasectomy used among married couples during 5 years period from the IDHS 2002/2003 to 2007 remained steady, with just around 0.4% of men choose vasectomy from entire CPR. It has a

downward trends compare to 1991 with almost reached 0.6 percent of all CPR. (IDHS 1991)

In contrast, the latest survey revealed that vasectomy has declined sharply to about 0.2% from all CPR. However, all methods recorded an upward trend gradually within 5 years. It was marked that 62 percent of current married women were using contraception of all methods. (IDHS, 2012)

2.3 Background Theory

Some theories, which are used in this study, will be described here. These theories are supposed to help identifying factors, which related to the human intention. To some extent, this study will explain about the intention of current married male aged 15-54 years to adopt vasectomy after completion of their ideal family size.

Firstly, initial section will mention some related theories, and then determine which one is most suitable theory to explain the intention of men as mentioned above.

2.3.1 The Theory of Reasoned Action (TRA)

According to Fishbein and Ajzen (1975) in their model "The Theory of Reasoned Action" stated that action of someone will be preceded by the presence of intention. Furthermore, Ajzen (1980) suggested that the intention to do or not do a certain behavior is influenced by two basic determinants; the first dealing with the attitude (attitude towards behavior) and the other is related to social influence subjective norms (subjective norms). Generally speaking, TRA discussed that an effort to reveal the influence of an attitude and subjective norm on the intention to do or not do the behavior. Fishbein et al (1975) proposed that attitude comes from confidence in the behavior (behavioral beliefs), whereas subjective norms derived from normative beliefs (normative beliefs). (Fishbein and Ajzen 1975).

Below is described the core of the theory of reasoned action in diagram format;

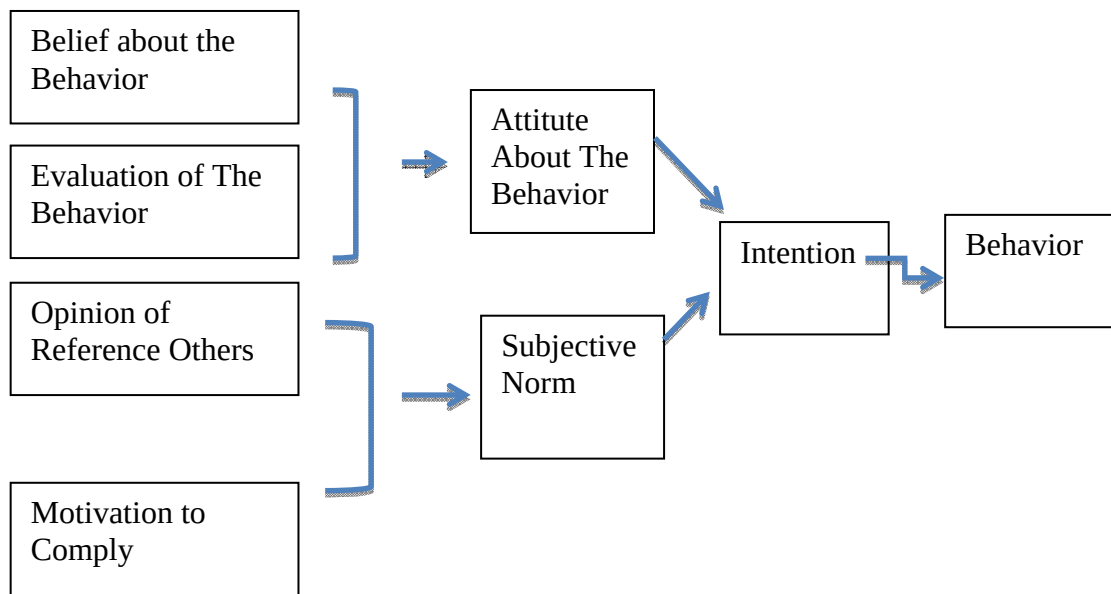


Figure 2.1 Theory of Reasoned Action (TRA) taken from from Fishbein and Ajzein (1975)

Source: <http://www.soc.iastate.edu/sapp/soc415FAM.html>

Attitude toward the behavior is defined as the individual's positive or negative feelings about performing a behavior. It is determined through an assessment of man's beliefs regarding the consequences arising from behavior and evaluation of the desirability of these consequences. Formally, overall attitude can be assessed as the sum of the individual consequence desirability assessments for all expected consequences of the behavior.(Fishbein and Ajzein, 1975)

Subjective norm defined as an individual's perception of whether people important to the individual think the behavior should be performed. The contribution of the opinion of any given referent is weighted by the motivation that an individual has to comply with the wishes of that referent. Hence, overall subjective norm can be expressed as the sum of the individual perception and motivation assessments for all relevant referents.

When applied to the intention of prospective vasectomy acceptors/adopters, TRA is assumed able to explain male limiters intention to use vasectomy in the future after they have positive individual perception of adopting vasectomy, after weighting the obtained information which comes from environment as subjective norms.

From this theory we can measure the perception of male limiters which lead to their acceptance on particular things after being exposure by external factors surrounding. Therefore, this theory is fit for this study since it is aimed to measure the intention.

2.3.2 Theory of Planned Behavior

TPB is quite famous among behavioral scientists. Theory of Planned Behavior is an extension of the TRA. In theory that was also initiated by Fishbein and Ajzein in 1985. There was a new additional construction in the TRA models namely, perceived behavioral control.

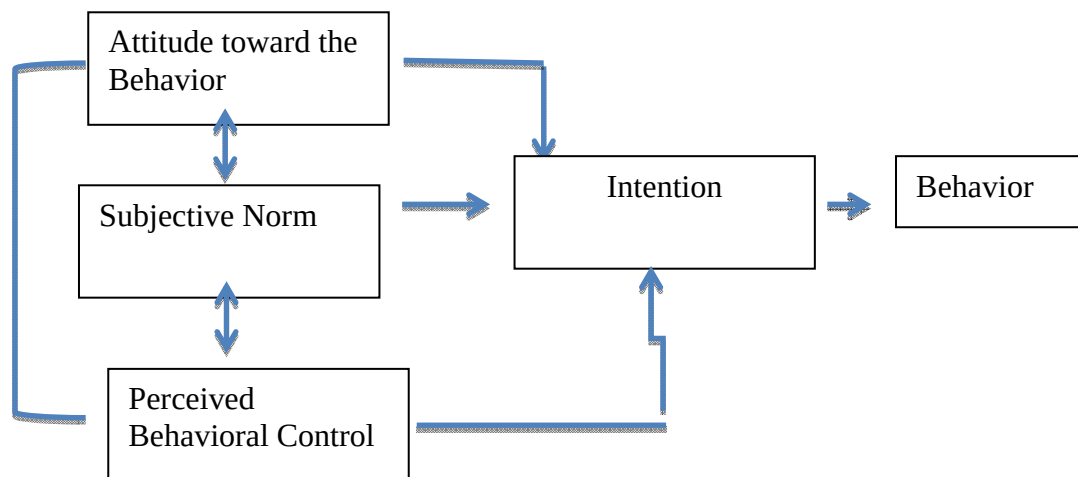


Figure 2.2 Theory of Planned Behavior (TPB) taken from Fishbein and Ajzein (1985)

Based on the diagram of TPB above, we may see instead of attitude toward the behavior and subjective norm, the perceived behavioral control also influence prospective adopters (male limiters) intentions to adopt vasectomy. Perceived behavioral control itself is influenced by past experience and estimates regarding difficult or not a person to perform a particular behavior (Azwar, 2003). In this case, Azwar believed that private past experiences of somebody can be influencing factors as well as other people experiences, since the subjective norms is coming from common belief as the outcome of environment's custom or experiences. The value of that past experience may affect intention regarding to particular objects.

2.3.3 Triandi's Interpersonal Behavior Model (1977)

According to Triandi's, intention is an immediate antecedence for behavior. Crucially, habits also mediate behavior. Facilitating conditions moderates both of these influences. Triandis' model believed that intention is affected by social and affective factors as well rational deliberations.

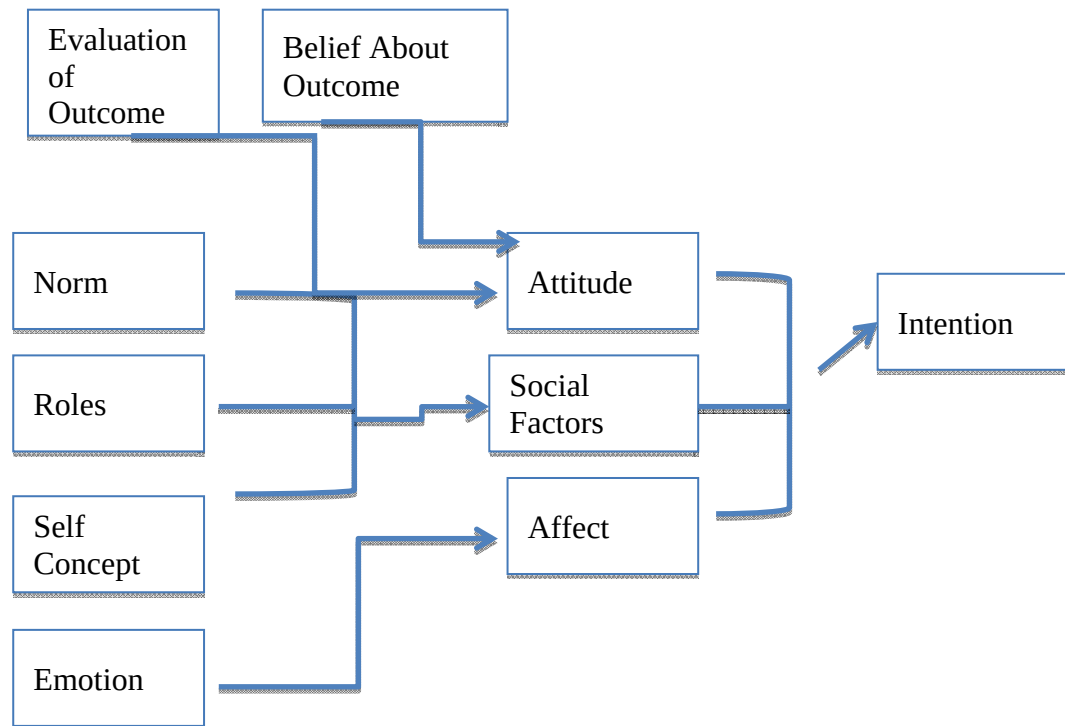


Figure 2.3 Theory of Interpersonal Behavior (TIB) taken from from Triandi's (1977)

Behavior in any situation is, according to Triandis, a function partly of the intention, partly of the habitual responses, and partly of the situational constraints and conditions. One is neither fully deliberative, in Triandis' model, nor fully automatic. One is neither fully autonomous nor entirely social. Behavior is influenced by moral beliefs, but the impact of these is moderated both by emotional drives and cognitive limitations.

Social factors include norms, roles and self-concept. Norms are the social rules about what should and should not be done. Roles are 'sets of behaviors that are considered appropriate for persons holding particular positions in a group. (Triandis, 1977). Self-concept refers to the idea that a person has of his/herself, the goals that it is

appropriate for the person to pursue or to eschew, and the behaviors that the person does or does not engage in.

Emotional responses to a decision or to a decision situation are assumed distinct from rational-instrumental evaluations of consequences, and may include both positive and negative emotional responses of varying strengths. Affect has a more or less unconscious input to decision-making, and is governed by instinctive behavioral responses to particular situations.

2.3.4 Interpersonal Communication Theory (Wood, 2010)

Initially, Watzlawik, et al or Palo Alto Group (1967) established the theory of Interpersonal Communication, which mainly focuses on family interaction with behavioral pathologies. According to them, there are five main axioms of communication which are; impossibility of not to communicating, content and relationship level, the problem of punctuation, digital and analogic communication, complementary and symmetrical communication.

This axiom is also well described by Wood in her book with titled “Interpersonal Communication; Everyday Encounters”, which was published in 2010. According to the Wood of the eight principles of interpersonal communication are; (1). Impossible to not communicate, (2) Irreversible, (3) Involves Ethical Choice, (4) People Construct Meaning, (5) Metacommunication affect Meaning, (6) Develop and Sustain Relationship, (7) Not a Panacea, (8) Can be Learned.(Wood, 2010)

Wood described that impossible of not to communication described as every single gesture and actions which taken against anybody else by someone has regarded as communication. In this case, according to Dainton in his book “Explaining the Interpersonal Communication Theory” the silent treatment of wife to her husband in a family settings or receiving phone call in a formal meeting of an office regard as actions that demonstrate the superiority of a person even not through verbal communication has symbolized the communication of communicators to the others around him.

Therefore, those eight principles is fit to measure on how people get affected from other people, especially those who they already known and get in touch or familiar whole life start from early morning up to bed time.

In case of male intention to adopt vasectomy closely related to their ability to communicate each other in a proper way. Those basic principles are able to explain that male limiters must have verbal and non-verbal communication regarding to contraception method and the ideal family size that they wanted to have. By communicating, spouse will be able to maintain their relationship. Particularly in terms of ideal family size and family planning which determine on how their future will be. Besides that, spouse also need to prepare either financial or accommodation, and many other things by having interpersonal communication.

2.3.5 Influenced Factors of Contraceptive Acceptance (Bertrand, 1980)

According to Bertrand (1980), the most influenced factors for contraception acceptance are:

2.3.5.1 Socio demographic factor

In this category, the associated factors described are education, family quintile, job status, residence type, nutrient, age, race/ethnicity, and religion. Those factors are suitable to measure how far male limiters intention to adopt vasectomy in Indonesia which have various socio-economic and demographic background as well as geographical conditions. However, this study will only select some variables which have generalization such as education, income, job (occupation), type of residence, and age.

1. Socio-Physiological Factor

Attitude and belief regard as the key factor for contraception, in this case vasectomy, to be widely accepted by the people. Another key point is son value among the families, attitude towards family planning program, ideal family size, couples communication, and perception of the child death.

2. Health Services Factor

The most influential factor in this category is the source of family planning knowledge's, residence distance to the health provider, and mass media involvement. Thus, this study will describe knowledge of male limiters and source of knowledge which confounding to government policy implication on setting appropriate information using three commonest media, namely television, radio, and newspaper.

Suhermi, et al (1999) on (Ekarini, 2008) believed that the low participation of male on family planning program is engaged to low level of knowledges of male towards male and female contraceptive methods just around 6.2 percent of currently used contraception male. In contrast, based on (IDHS, 2007) revealed that there were 94 percent of married men familiar with any modern contraception methods.

2.3.6 Factors Affecting Vasectomy Acceptability Model (Bunce et al, 2007)

In accordance to Bunce et al (2007) whose conducted research in Tanzania, there are six themes consider as main contributor to vasectomy decision-making process; Economics, Spousal Influence, Religion, Provider Reputation and Availability, Uncertainty about The Future, and Poor Vasectomy knowledge and Understanding.

This study will adopt Bunce et al model and modified it as described below;

1. Economics

Family or individual financial status (income) has a great role on determining male limiters to adopt vasectomy, since they have to be breadwinners; undoubtedly male tends to evaluate their ability to feed the family more, if they had great family size. It assumes that high-income male limiters will take the chance to adopt vasectomy due to their economic stability and affects by their level of education as a general proxy to gaining more income.

2. Spousal Influence

Spousal Influence (husband-wife communication) plays major role on male limiters to trust and adopt vasectomy as long as they able to initiate the discussion. In this study, spousal influence will represent whole aspect of communication, namely Husband-wife discussion, Permanent methods is female concerns, wife disapproval, and health personnel and male limiters communication.

3. Religion

Religion has many good teachings that set the followers on how to deal with man-to-man relationship, and also man to God relationship. In this

case, in 2 major religions in Indonesia, Islam and Christian have similar basic principle towards vasectomy; suggests their followers to deny sterilization both male and female due to some opposite religious law. But, those laws are not extremely binding constituents. There are some exceptions in case of biological problems of the people.

4. Provider Reputation and Availability

National Population and Family Planning Board (NPFPB) of Indonesia has good reputation and popular as the family planning promoters and contraception methods provider for many years together with other government and non-government institution. However, the latest IDHS surveys showed different evidence particularly related to number of vasectomy adopters.

5. Uncertainty about the future

Male limiters is assumed easily accept or have any intention to adopt vasectomy, if they were unsure about their future ahead. It might relate to less of self-confidence of male limiters base on their current financial status.

6. Poor Vasectomy Knowledge and Understanding

Poor vasectomy knowledge and understanding has always become major constraints in developing world, including Indonesia. Despite of much information can be obtained from several kinds of media, male limiters still believe that vasectomy cannot be reversible, and it is a result of strong stigma and socio-cultural norms which imply in mostly predominant male society.

2.4 Related Previous Research

Below are described some of the findings of past studies which found that there is a strong link between socio-economic and demographic factors, subjective norm, attitude toward behavior, source of family planning information, and spousal communication with the intention of male adopting vasectomy. From previous findings, age of men, location of residence, income status, and many other factors including cultural norms, the role of media in society, as well as spousal communication becomes determinant married men in deciding to accept vasectomy. This may be due to the culture of acceptance of one's particular case is determined by

several factors above, according to the basic theory that will be used in this study, the Theory of Planned Behavior. Where, a person's intention will be measured by several factors, such as, attitude toward behavior, subjective norm, and perceived behavioral control which are available in the societies.

2.4.1 Socio-Economic & Demographic Factors

2.4.1.1 Age

The age at which male married is an important variable in terms of accepting the vasectomy. Because it is related assuring convenient access to sexual relations, marriage constitutes a commitment to support the vasectomy as one factor of sexual activity satisfaction. Age also significantly influence person's maturity level viewing problems in their life. One study identified that time and experience in working also closely related to how male limiters choose contraception, in line with the increase in information and knowledge that they looking for.(Indrayani; Fatma, 2013).

Likewise, Indrayani revealed that more than 30 percent of vasectomy recipients were 30 years or above. It was relevant with the other study, which suggested that most of the vasectomy acceptor were mainly not the main target of age group populations. (IDHS, 2007; IDHS 2012)

In addition those findings also relevant with study conducted in US which found that 28 percent of vasectomy acceptor were 40-44 year age group, while only just around 2.5 percent of men in 25-29 age cohort receiving vasectomy. (Anderson et al., 2010)

Furthermore, In Indonesia and Nepal, three out of four wives of vasectomy recipients were 35 years old or older. This fact also founded in India and Sri Lanka which have four and three of five were 35 year old or older. (Pile & Barone, 2009).

2.4.1.2 Type of Residence

Numerous studies have been conducted on vasectomy intention and acceptance according to type place of residence. It was found that there are an equal chance that the number of married male who received or not received vasectomy as their main contraceptive methods residing in urban area is higher than of

rural residents; this differential were more or less stable. This fact was founded in IDHS 2007, where 4.2% rural resident ever considered to adopt vasectomy in the future. In contrast, there were only 1.7% of rural's who intent adopting vasectomy.(IDHS, 2007) In another study which was conducted in Indonesia, Nepal, Sri Lanka, and Thailand four out of five vasectomy acceptors lived in rural area, whereas In India and Philippines 3 out of four and two out of three acceptors live in rural, respectively. (Pile & Barone, 2009)

2.4.1.3 Education

Education is acknowledged as one of the most influential determinant factors towards vasectomy acceptance among married couples in most of survey associated with sterilization. Numerous studies believed that education has an enormous impact on people to choose their contraception methods due to their advanced knowledge and perception.

Barone, Johnson, Luick, Teutonico, and Magnani (2004) revealed that less educated men were abandoned among the vasectomy acceptors. Whereas, there were 28 percent of vasectomy recipients had bachelor degree than 17 percent of general US male population. Most of them were graduated from high school or beyond. Likewise, another study conducted in US also revealed that most of the vasectomy adopters were highly educated.(M. A. Barone et al., 2006)

In contrast, in another study conducted in US found that there was no significant differentiation between less educated men compare to more educated men which divided in to 4 group of education level. It was stated that proportion of men received vasectomy was just around 10 to 20 percent of each groups using vasectomy.

2.4.1.4 Occupation

Based on findings from previous study in Pakistan, various type of job also became a proxy towards male sterilization (vasectomy) practice. There were 56% of men believed that they were unable to work hard after having sterilization in a study where more than a half of respondent were labor/farmer/daily wages worker.(Rashid, 1998).

2.4.1.5 Income Status

Income status often associated with male limiters intention to select male sterilization (vasectomy), since wealth was considered one element of people not to have any burden by childbearing any other future babies. But some people also assume that higher income would also become one aspect of receiving male sterilization due to their ability to overcome financials constraint.

In one small scope study conducted among husband of postpartum women in Rajvithi Hospital, Thailand in 1992 revealed that 71 percent of low income group respondent was non-prospective adopters.(Jacob, 1992) It was relevant with recent study in US among 30-45 year old age group claimed the odds of higher income male's group with annual income > 50,000 US\$ to receive vasectomy is twice than less income group.(Eisenberg, Henderson, Amory, Smith, & Walsh, 2009)

In contrast, in India and Bangladesh, those who adopt vasectomy were lower socio-economic status.(Engender Health on (Glasier, 2010)

2.4.1.6 Number of Living Children

Numerous study has proved a linkage between number of living children with the male desires to adopt vasectomy. One study conducted in US found that the average number of children were 2.5 of each respondent.(M. A. J. Barone, Christopher H; Luick, Melanie A; Teutonico, Daria L; Magnani, Robert J, 2004) Similarly, newer study which also conducted in US revealed that 84 percent of adopters were those who have 2 or more children. (Sharma et al., 2013)

2.4.1.7 Ideal Number of Children

Ideal number of children has strong inference on vasectomy adoption among men worldwide. In Indonesia, It was found that 18% among current married men age 15-54 still desire to have more children as one the reason to reject vasectomy. Interestingly, 2 children of family lineage still considered as an ideal size for current married men in Indonesia provided by 45.5%, while 3 and 4 children were the the second and third rank with 26.7% and 15.3%, respectively. (IDHS 2007)

2.4.2 Subjective Norm Factors

Male limiters personal perspective of using any contraception methods has a significant role due to vasectomy selection. It is strongly affected by the socio-norms

and stigmatization, which existed within their communities. It has become a common issue worldwide that vasectomy will face problems associated to predominantly male societies. After having a golden period in some western countries and some part of Asia in 1 decade's periods (1970 -1980) vasectomy face similar obstacles as the first time this surgical procedure being promoted 4 decades ago.(Pile & Barone, 2009)

In Indonesia, there were 85 percent vasectomy male acceptors decided not to adopt vasectomy as their contraception methods in the future or just around 25 percent from total number of married men. Most of them gave "there are another contraception methods" as the alibi to about 44 percent.(IDHS 2007)

2.4.2.1 Regarding Contraception as Female Concern's

In mostly predominant male society in South East Asia, sterilization still regards as women concerns. It was come from the social norms, which consider men as "Bread Winner" and work hard for the family wealth. Soonthornthada (1987) revealed that almost 75 percent of men in Buriram Province, Thailand argued that male sterilization (vasectomy) must be undertaken by housewives rather than themselves. Furthermore, this study also found that wives feared that their husband could be unhealthy.(Soonthornthada, 1987)

It is relevant with the main reason of why vasectomy still underused where people still have lack of awareness and misperception about contraception, particularly vasectomy. Generally, provider and program stakeholder still bias, with largely perceived as a female concern's. (Expert Consultation on Vasectomy, 2003 on (Glasier, 2010)

2.4.2.2 Feeling Castrated

Most of previous studies carried out by researcher or survey found that most of male were still more likely felt like being castrated or unable to reverse if they had vasectomy. It is related to the strong public opinion that family planning is women business, because female are engaged to the childbearing and pregnancies. Rasyid one of Indonesia Urologist from Medical Faculty of University of Indonesia in his essay with titled "Vasectomy doesn't Affect Erectile Dysfunction" (2008) revealed that "being castrated" still haunted men perspective and more likely become one of major barrier against vasectomy.

This fact was relevant with IDHS 2007 survey, which revealed that 4 percent of male respondent fear of lost their masculinity.

According to Rasyid (2008) most male in Indonesia still consider vasectomy recipients will lose their sexual desire, tend to be overweight, and will not be able to ejaculate.

2.4.2.3 Achieved the Ideal Family Size

The tendency of current married men intend to adopt vasectomy, generally, also influenced by their personal perceptions of the ideal number of children compared with children living they have today which mean gaining the ideal family size. Ideal number of children in Indonesia based on the 2007 survey results IDHS was 2 children raised by 41% of current married men. These number were slightly increased from the previous survey which revealed that there were 40 % of current married men considered 2 children as the ideal size in 2003.

2.4.3 Attitude towards Vasectomy

Male limiters attitude on adopting vasectomy is crucial to predict their involvement in family planning in the future. Those who regard vasectomy as advantageous contraceptive methods will have tendency to have positive attitude and willing to perform vasectomy. In contrast, those who think that vasectomy is a disadvantageous will have negative attitude towards vasectomy.

2.4.3.1 Advantageous

Generally, male who undertake vasectomy believe that it is simpler and safer.(Glasier, 2010) In one study, which was conducted in US revealed, that 50% out of 719 men receiving vasectomies stated that vasectomy was the most effective and secure in terms of preventing pregnancy.(M. A. J. Barone, Christopher H; Luick, Melanie A; Teutonico, Daria L; Magnani, Robert J, 2004)

Likewise, as much as 62,9% and 69.6% male in North India admitted that vasectomy didn't need prolonged bed rest and didn't affect sexual performance.(Garg, Jain, Choudhary, Chaurasia, & Pandey, 2013)

2.4.3.2 Disadvantageous

Attitude towards contraceptive methods, particularly vasectomy varied markedly according to the cultural background. There was 41% of

male in North India feared the surgical procedure, 10.5% were afraid of decreasing in sexual function, and affecting their daily earnings provided by 7.5% of all participants.(Garg et al., 2013)

2.4.4 Source of FP Information

Any contraceptive methods information among married male become important factors due to the tendency of selecting appropriate and comfortable contraception methods. It will determine how far those information will affect their decision to choose vasectomy.

However, it's more than 30 percent of married couples admitted to be exposure by FP program in 4 decades since vasectomy was being promoted by NFPPB in late 1970 which has no significant increase until now.

In Buriram Province, Thailand there were 87.6 percent men agreed with vasectomy, however they didnt have any intention to undergo the vasectomy surgery. It was just around 30 percent of respondents have intention to receive vasectomy.(Soonthorndhada, 1987) In addition, Latino men had 54% knowledge about vasectomy compare to 96% white men in US.(Shih et al., 2011)

The number of information which obtained from media such as, television, radio, and newspaper are expected become proxy to increase male sterilization (vasectomy) practice. In fact, study which was conducted in Thailand in 1992, showed that there were 56,3% of prospective adopters of vasectomy had high proportion of knowledge towards vasectomy.(Jacob, 1992)

2.4.4.1 Mass Media (TV, Radio, Newspaper, Poster, and Pamphlet)

In one study conducted in North India in 2013 revealed that among male who aware of Non Scalpel Vasectomy, television has being reported as the main source of information provided by 47.7% of participants. While, other source of information were radio (16.7%), magazines (4.5%), poster (3.5%), newspaper (2.3%), and pamphlet (0.7%).(Garg et al., 2013)

2.4.4.2 Peer Educator

The communication between health providers (Peer Educators) in terms of sterilization is one of the most influential factors due to contraceptive

methods selection. Even though at the beginning of vasectomy already introduced by NFPFB decades ago, not every health center provided vasectomy surgery. On the other hand, some trained physician scattered in Java Island were inactive. There were only 59 service points served vasectomy in four big provinces in Java Island.(Huber, 1983)

This condition also happened in US where many service providers didn't believe men would choose vasectomy. In contrast, in Latin America and Africa, based on their experiences, men were seeking for vasectomy if the policy maker believed to provide service points.(Sandlow, 2001)

However, those situations are getting better nowadays, due to strong government support. In Indonesia, NFPFB collaborate with MoH inform the community by the assistance of health attendants and field officer visits door-to-door services as well as public facilities available in the district or sub district.(IDHS, 2012) The ultimate purpose of this occasion is to give the proper information regarding family planning programs and whole methods included, particularly vasectomy. Interestingly, 32.6 percent of current married men age 15-54 years old in Indonesia acknowledged that they were exposure by health visitors engaged to family planning program.(IDHS, 2012)

2.4.5 Spousal Communication

Communication between partners apparently appear to be a precondition of male sterilization acceptance.(Ringheim, 1993) Spousal communication spesifically means that any dicussion of partners have significant role due to methods of family planning. Male attitudes and viewpoint towards family planning tend to have inference of how far responsibility that they had in order to construct ideal family.

As we know, most Asian men have a tendency to let female deal with contraception methods due to naturally childbearing process. In this case, men should have any persuasive information from the nearest environment especially wife and external source of communication, i.e. health personnel as the representative of government to deliver the appropriate knowledge to the communities.

2.4.5.1 Husband and Wife Communication

Traditionally, family planning was targeted to women. However, new evidence suggests that joint decision of men and women are necessary due to family planning uptake.(Kabagenyi et al., 2014) Husband and Wife Communication engage to the ideal family size and contraception method is necessary to be discussed.

At the moment, it is quite uncommon for couples not talking about the family formation, since the mass media and technology advances growing and reaching the rural residence. Besides that, government has provided peer educator and various kinds of informatory tools in order to expose the family planning program up till sub-district and village level, especially male sterilization which is well known as “Kontap” in Indonesia.

It is relevant with study in Buriram Province, Thailand, which figured that of 92 percent spouses talked about family planning while 40.8 percent of spouses have ever talked about vasectomy, positively. (Soonthorndhada, 1987)

Likewise, in Kenya, 83 percent of spouse admitted that they decided to use any methods after obtaining discussed with their partners in the previous year.(Lasee, 1997)

Meanwhile, in Jordania revealed that among the general public, 74 percent of women and 58 percent of men regarded the option to use family planning methods was a joint decision between husband and wife. (Underwood, 2000)

In addition, in one study carried out in US confirmed that US men needed less than 1 year to decide making appointment to receive vasectomy to the service points. Their decision was supported by wife who convinced them to do so. Furthermore, study also revealed that 91 percent of adopters admitted that wife together with relatives and friends became the major reason of their decision.(Sandlow, 2001) Likewise, Glasier in her study wrote that male partner are morelikely to express their responsibility in family planning (“it’s my turn to be acceptors”).(Glasier, 2010)

Likewise, in Northern India, 89.7% male believed that men should contribute to family planning program.(Garg et al., 2013)

2.7 Conceptual Framework

This study tries to describe the relation between male limiters intention and associated factors by constructing a new model based on TPB, TRA, Triandi's Interpersonal Behavior, Wood's Interpersonal Communication theory's, and past researches. Besides that, this study will focus at men's perspective on vasectomy adoption. In case of gender issues will be measured to identify male's participation in family planning program by discussing family matter with their spouses. By this point, this study also expected to able to measure whether currently married men in Indonesia still regard family planning as female concerns or not.

Intention itself is identified as crucial elements for human to behave that is explained by TPB model as mention in previous section. Furthermore, subjective norm factors and attitude are mentioned in TPB together with TRA model. Source of information it is used to explain the role of mass media on affecting male limiters uptake vasectomy is taken from Bunce model. In addition, this study also put spousal communication as factor confound to intention which is taken from Bunce model and previous findings.

In certain scenario some the components included in TPB, TRA, TIB and previous findings, may not be fruitful in studying intention. There might be a need of certain modification or construction of a new model utilizing those models, by combining other past researches in accordance with the demand of study.

As the result, new model is constructed which able to explain intention of male limiters in adopting vasectomy in the future. Theory of Planned Behavior (TPB) comes to the top as the best fit for measuring male limiters intention for up taking vasectomy in Indonesia.

The reason of this study uses TPB because this theory is the most appropriate models to be applied in measuring human intention toward something. Theory of Planned Behavior emerged as major framework for understanding, predicting, and changing human social behavior. (Ajzen, 1976) Empirical support for this theory came from host of co-relational studies demonstrating its ability to predict intention and behavior as well as interventions showing that changes in behavior, normative, and control beliefs can produce change in intentions. As an immediate antecedence for behavior, intentions usually not performed mindlessly but follows

reasonably, and consistently from the behavior relevant information available to humans.(Ajzen, 1976)

In addition, the TPB has been used successfully to predict and explain a wide range of health behaviors and intentions including smoking, drinking, health services utilization, breastfeeding, and substance use, among others. The TPB states that behavioral achievement depends on both motivation (intention) and ability (behavioral control). It distinguishes between three types of beliefs - behavioral, normative, and control.(<http://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/SB721-Models/SB721-Models3.html>, accessed on Saturday, 23rd August 2014)

However, there are several limitations/weakness of the TPB, which are:

- It assumes the person has acquired the opportunities and resources to be successful in performing the desired behavior, regardless of the intention.
- It does not account for other variables that factor into behavioral intention and motivation, such as fear, threat, mood, or past experience.
- While it does consider normative influences, it still does not take into account environmental or economic factors that may influence a person's intention to perform a behavior.
- It assumes that behavior is the result of a linear decision-making process, and does not consider that it can change over time.
- While the added construct of perceived behavioral control was an important addition to the theory, it doesn't say anything about actual control over behavior.
- The time frame between "intent" and "behavioral action" is not addressed by the theory.

The TPB has shown more utility in public health, but it is still limiting in its inability to consider environmental and economic influences. Over the past several years, researchers have used some constructs of the TPB and added other components from behavioral theory to make it a more integrated model. This has been in response to some of the limitations of the TPB in addressing public health problems.(<http://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/SB721-Models/SB721-Models3.html>, accessed on Saturday, 23rd August 2014).

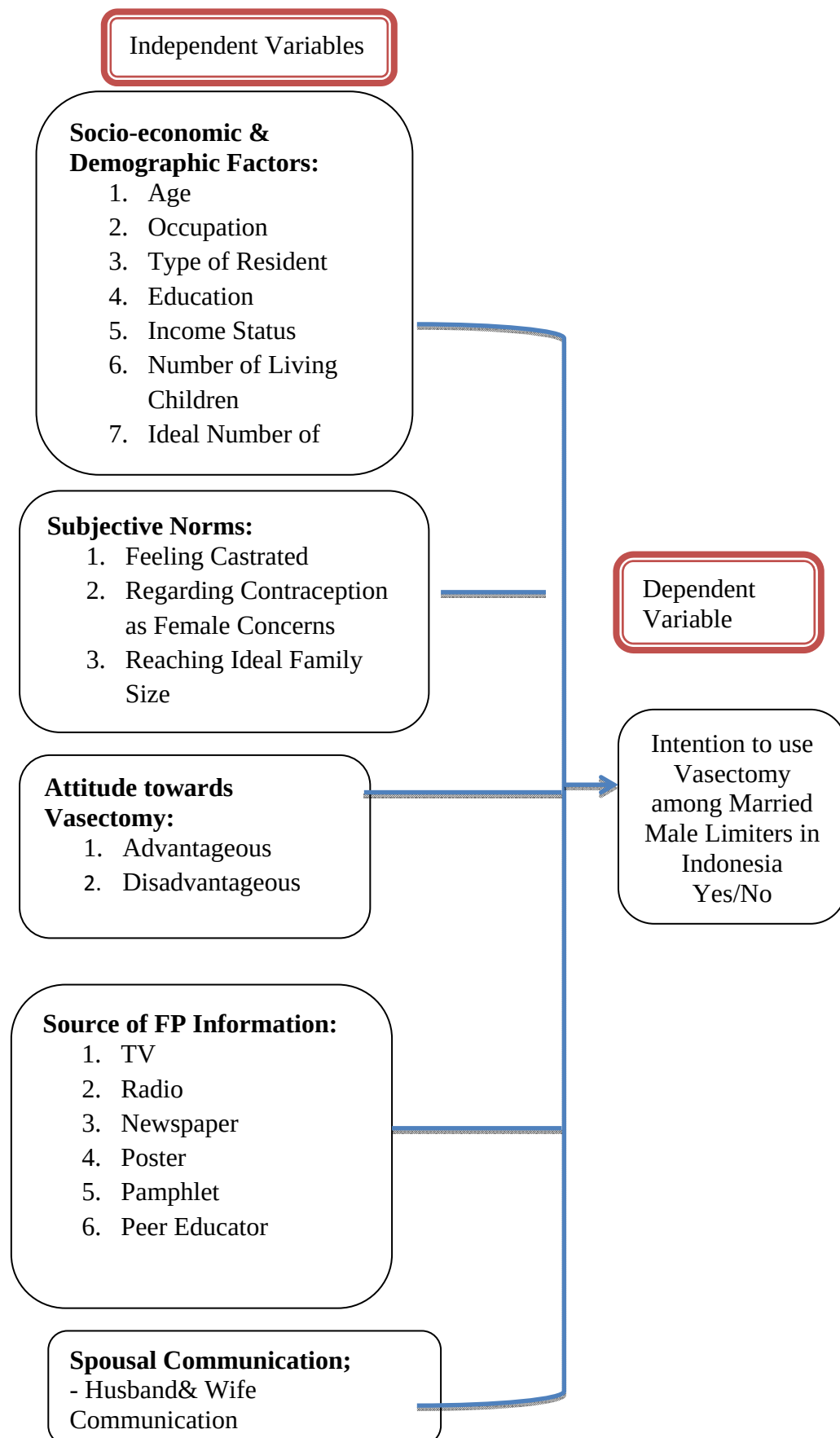
To investigate male limiters intention toward vasectomy two additional components which are socio-economic and demographic factors, source of family

planning information, other than that mentioned in each of theories above are included in this model. This addition is solely based on the literature reviews that showed some impact of socio-economic demographic factors on vasectomy adoption.

Meanwhile, interpersonal communication theory of Wood's would assist this study to explain that communication between husband and wife or partners as the initial condition of vasectomy intentions. One of the axioms of interpersonal communication theory, which is impossible not to communicate, is very appropriate to describe the probabilities of husband and wife to talk about family planning in their daily lives. It is assumed that impossible that a spouse does not talk about reproductive between wives with husband's in a many circumstances of their daily lives.

In accordance with the studies as discussed above, one part of TPB models are unused to study intention of male limiters to adopt vasectomy in Indonesia, i.e.; perceived behavior control. Since this study doesn't have appropriate information regarding to the elements.

Finally, the model constructed is based on combination between TPB, Triandis', TRA, Interpersonal Communication model and related previous studies. Some essential components of TPB, TIB, TRA, and Interpersonal Communication theory and some other components (from previous studies) based on the need of this study are used.



2.8 Research Hypotheses

1. There will be a significant inference between socio-economic and demographic factors with vasectomy intentions among married male limiters in Indonesia.
2. Older married male limiters are more likely to have positive vasectomy intentions than those who are younger.
3. Those married male limiters who live in urban area more likely to have vasectomy intention than those who reside in rural area.
4. Those married male limiters who have higher education are more likely to have positive vasectomy intentions than those who have lower level of education.
5. Those married male limiters who have higher economic status are more likely to have positive vasectomy intentions than those who have lower economic status.
6. Male limiters who have more than 2 children are more likely to have vasectomy intentions than those who have less children.
7. Those married male limiters who work in professional/technical/managerial field are more likely to have positive vasectomy intention than those who work in other field.
8. Those married male limiters who perceive vasectomy as castration are less likely to have positive vasectomy intention than those who do not.
9. Those married male limiters who do not regard contraception as female concerns are more likely to have positive vasectomy intention than those who do.
10. Those married male limiters who already reached their ideal family size are more likely to have positive intention than those who do not.
11. Those married male limiters who regard vasectomy as an advantageous contraceptive method are more likely to have positive intention than those who do not.

12. There will be a significant inference between source of family planning information with vasectomy intentions among married male limiters in Indonesia.
13. Those married male limiters who ever discussed about family planning matters with their wives are more likely to have positive vasectomy intentions than those who do not.

CHAPTER III

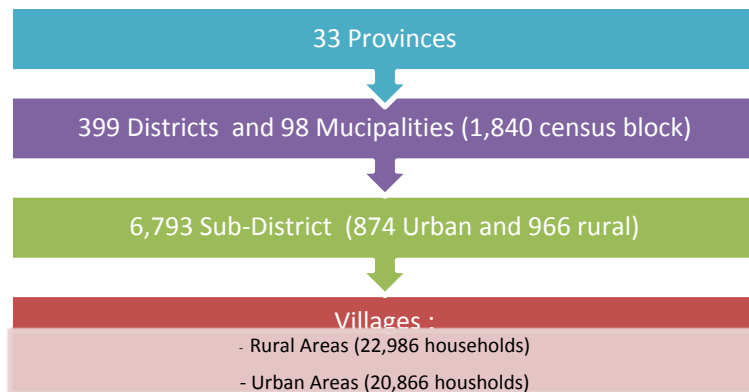
RESEARCH METHODOLOGY

This chapter describes the research methodology used in this study. The contents are divided into 5 sections. The first section shows the description of data source. The next section explains the sample size and ethical consideration. The third section introduces the method of data analysis and how to measure the variables in order to answer the research question within the scope of conceptual framework illustrated in chapter II. The fourth and five sections describe methods of data analysis and limitation of the study.

In addition, this study takes data from the Indonesia Demographic Health Survey (IDHS) 2012 which was conducted collaboratively among the Macro International Organizations (ICF International, Measure DHS, and USAID), Central Bureau of Statistic (CBS) of Indonesia, Ministry of Health of Indonesia, University of Indonesia, and the National Population and Family Planning Board of Indonesia (NPFPPB) as a descriptive and cross sectional studies.

3.1 Study Areas and Population Data

The study areas covered 33 provinces in Indonesia, 399 districts and 98 municipalities, scattered out from western to eastern regions. Based on the latest official census in 2010, total of male population stood at 119,630,913, while female populations were 118,010,413. (Indonesia, 2010). A stratified multi-stage random sampling method is used to identify population under studies.

Figure 3.1 Population Sampling, IDHS, 2012

Source: IDHS, 2012

3.1.1 Sampling Design

The sampling design of 2012 IDHS gives the estimation at the national and provincial levels including districts, sub-districts, villages classified as urban or rural areas. The survey began from May 2012 to July 2012 using stratified multi-stage sampling method to randomize the number of population.

In IDHS 2012, households and individuals were grouped into sample domains and the response rates (groups of cases for which response rates are calculated) calculated for each domain. The individual weight of a respondent's case is the household weight multiplied by the inverse of the individual response rate of response rates grouped. (IDHS, 2012)

Therefore, there were 9,306 samples of currently married men aged 15-54 years old were particularly taken from every three households which derived from 44,302 households occupied on the survey. However, there would be some invalid (missing) cases due to survey errors.

3.1.2 Sample Size

The 2012 IDHS was covered 9,306 currently married men (aged 15-54 years old), which were eligible to be interviewed taken from individual's questionnaire from 43,582 households.

The original set of data contained details about all the participants who were 15-54 years old. All of them are not included in this study according to the

research objective. Only those who have ever heard of vasectomy were included for the analysis.

Therefore, after data cleaning, out of 9,306 current married males the total eligible numbers of 2,385 respondents are identified in this study. The excluded number of population are those whose wives had undergone the tubal ligation (48 cases), 39 missing cases. The reason of exclusion those two groups are:

- a. Indonesia is a predominant male society. Men are less likely to go for any contraceptive methods if their partners have been sterilized. It was proved by 22% of current married men in Indonesia still regarded contraception as female's concerns.(IDHS, 2007)
- b. The missing value consist of 39 cases

The number of weighted sample of 2,385 is applied for the analysis. However, after applying weights to represent the proportion of selection, the number of the weighted sample is 2,385 which is applied for the analysis. SPSS and STATA program are applied for univariate and bivariate analysis. The total samples occurred through reconstructing original sample weight in to new generated weight by dividing it into 1,000,000 based on IDHS instructional use.

The reason why this study using mixed methods is because the findings will be more accurate in representing the population and essential to make valid inferences based on sample data. If a sample design deviates from simple random sampling (or, more generally, from equal probability sampling), it is necessary to take design weights into consideration to account for the effects of the sample design.

The populations are selected under the following criteria;

1. Having heard of vasectomy and the knowledge about vasectomy
2. Age between 15-54 years old
3. Wives not having sterilized

In addition, this study includes current married men who have no children by the time of the survey for the reason that the study aims to measure vasectomy intentions on the condition that whether men will accept vasectomy or not if they do not desire to have any additional children.

Table 3.1 Number of Survey population by Residence

Result	Residence		
	Urban	Rural	Total
Interviews with married men age 15-54			
Number of eligible men	4,836	5,250	10,086
Number of eligible men interviewed	4,417	4,889	9,306
Eligible men response rate	91.3	93.1	92.3
Number of male limiters (weighted)	1,546	839	2,385

Source: (IDHS, 2012)

3.2 Ethical Consideration

To reserve the ethical requirements, the author has been granted the official permission from the National Population and Family Planning Board (NPFPPB) of Indonesia for data use. In addition, this study has received approval from the Board of IRB Committee Institute for Population and Social Research (IPSR), Mahidol University. The code for reference is as follows: COA.2014/1-1-31.

3.3 Operational Definition of the Variables

3.3.1 Dependent Variables

The dependent variable deployed in this study is vasectomy intention of male limiters. The male limiters mean those currently married men aged 15-54, ever heard of vasectomy and have a prospective vasectomy intention when no longer expect to have any more children. The dependent variable is measured by nominal (categorical/dummy) scale with yes (1) and no (0). The variable is generated from the screening question with 5 multiple choices namely; the wives had tubal ligation (1), would consider (2), would not consider (3), unsure/depends (4), and missing/no answer (9). Of those five answers, “wife already sterilized” (1) and “missing” value (9) will be excluded, while “unsure/depends” will be categorized into yes (1) category.

3.3.2 Independent Variables

The independent variables will be categorized into five categories; socio-economic and demographic, subjective norms, attitude towards vasectomy, source of family planning information, and spousal communication.

Firstly, socio-demographic characteristics are divided into seven variables (1) age, (2) residence, (3) education, (4) occupation, (5) income status, (6) number of living children, and (7) ideal number of children. Secondly, subjective norms will cover three sub-variables, namely (1) regarding contraception as female's concerns, (2) feeling castrated, and (3) Achieved ideal family size.

Thirdly, attitude towards vasectomy which consists of: (1) disadvantageous, (2) advantageous. Fourthly, source of family planning information comprise; (1) television (2) radio (3) newspaper (4) posters (5) pamphlets, and (6) peer educators. The last variable is spousal communication.

Details of each independent variable are as follows;

3.3.2.1 Socio-Economic and Demographic Factors

3.3.2.1.1 Age : Age refers to the current age of male limiters at the time of the survey. In this study, age of respondents are divided into four groups; (1) 15-24, (2) 25-34, (3) 35-44, and (4) 45-54.

3.3.2.1.2 Residence: Residence refers to the geographical area where the respondents live at the time of survey, which is divided into two categories; urban (1) and rural (0).

3.3.2.1.3 Educational Level : Educational level refers to the level of schooling at the time of survey: primary or lower (1), secondary (2) and higher (3).

3.3.2.1.4 Occupation: Occupation refers to type of job at the time of the survey. This sub-variable will be classified into seven categories; Professional/Technical/Managerial (1), Clerical (2), Sales (3), Agricultural-Self Employed (4), Services (5), Skilled Manual (6), and Other (7).

3.3.2.1.5 Income Status: The income status is a background characteristic that is used throughout the report as a proxy for long-term standard of living of the household. It is based on the data for household ownership of consumer goods; dwelling characteristics; source of drinking water source; toilet

facilities; and other characteristics related to the socio-economic status of households.(IDHS, 2012). It is categorized into three different quintile groups namely poor (0); middle (1); and rich (2).

3.3.2.1.6 Number of Living Children: Number of living children refers to the current number of the children by the time of the survey. It is categorized into four different categories namely No Children (0); 1-2 Children (1); 3-4 Children (2); 5 or more children (3).

3.3.2.1.7 Ideal number of children: This refers to the desired number of the children. It is categorized into 3 different categories namely 2 Children or less (0); 3-4 Children (1); 5 or more children (2).

3.3.2.2 Subjective Norm Factors

Subjective norm factors refer to self-perception (personal viewpoints) in case of environment and norms influences due to contraceptive methods preferably. Those include:

3.3.2.2.1 Regarding Contraception as Female's Concerns : This refers to the common perception of male limiters that still regard any kind of contraceptive methods as the female responsibility. This variable is divided into 2 categories, namely; (0) Disagree; (1) Agree.

3.3.2.2.2 Feeling Castrated : This refers to the perception towards vasectomy that might cause male sexual malfunction or being castrated. This variable is divided into 2 categories namely; (0) Disagree; (1) Agree.

3.3.2.2.3 Achieved the Ideal Family Size: This refers to the self-perception of male limiters towards the number of children they desire for their ideal family size which come from the actual number of living children minus by number of desired children. If the number of living children is equal to or less the ideal number, then they will be considered as those who achieved the ideal family size. It is categorized as yes (1), and no (0).

3.3.2.3 Attitude towards vasectomy

This variable is taken from eight different attitudinal questions applied in IDHS 2012. Those items are combined and measured by giving the score 0 to 5 scale of measurement, since there were no participants reached maximum 8 score. Therefore, each participant was required to answer 8 different questions regarding to

their viewpoint towards vasectomy which consist of 'yes' and 'no' option. The score is calculated into 0-5. If they had less than 1 score, they would consider as those who regarded vasectomy as disadvantageous.

After generating new dummy variable created from original variables and analyzing, the mean score is 0.28. As the result, the variable is categorized into two category; (0) Disadvantageous, and (1) Advantageous.

3.3.2.3.1 Disadvantageous : Disadvantageous refers to whether male limiters regard vasectomy as a disadvantageous practice which consider vasectomy as (1) Can't put man in control, (2) Not an effective method, (3) Not safe, (4) Less safer than tubal ligation, (5) Operation is expensive, (6) Much cost than Tubal Ligation, (7) Operation is not simple, (8) Not give men freedom.

3.3.2.3.2 Advantageous : Advantageous refers to whether male limiters regard vasectomy as an advantageous choice which consider vasectomy as (1) put man in control, (2) effective method, (3) safe, (4) safer than tubal ligation, (5) Operation is inexpensive, (6) Less cost than tubal ligation, (7) Operation is simple, (8) give men freedom.

3.3.2. 4 Source of Family Planning Information

This independent variables will consist of six sub-variables namely obtaining family planning through television, radio, newspaper, poster, pamphlet, and peer educators. All of these sub-variables are measured by nominal (categorical) scale which is divided into two categories; yes (1), and as no (0).

3.3.2.4.1 Obtaining Family Planning information from TV : Obtaining family planning information from TV refers to the possibility of male limiters being exposed to family planning program through television within the last 6 months prior to the survey. It will be categorized into two categories; No (0), and Yes (1).

3.3.2.4.2 Obtaining Family Planning information from Radio: Obtaining FP information through radio refers to the possibility of male limiters being exposed to family planning programs from radio within the last 6 months prior to the survey. It will be categorized in to two categories; No (0), and Yes (1).

3.3.2.4.3 Obtaining Family Planning information from Newspaper: Obtaining FP information from newspaper refers to the possibility of male limiters being exposed to family planning program from Newspaper within the last 6 months prior to the survey. It will be categorized in to two categories; No (0), and Yes (1).

3.3.2.4.4 Obtaining Family Planning information from Poster : Obtaining FP information from posters refers to the possibility of male limiters being exposed to family planning program from poster within the last 6 months prior to the survey. It will be categorized in to two categories; No (0), and Yes (1).

3.3.2.4.1 Obtaining Family Planning information from Pamphlet : Obtaining FP information from pamphlets refers to the possibility of male limiters being exposed to family planning program from pamphlets within the last 6 months prior to the survey. It will be categorized in to two categories; No (0), and Yes (1).

3.3.2.4.2 Obtaining FP Information from Peer Educator : The variable refers to the possibility of male limiters being exposed to family planning information by the peer educators within the last 6 months prior to the survey. It will be categorized in to two categories; No (0), and Yes (1).

3.3.2.5 Spousal Communication

This variable refers to the communication between male limiters and their spouse within the last 6 months prior to the survey. The variable is categorized into two categories; Yes (1) and No (0).

3.4 Methods of Data Analysis

SPSS software version 19 and Stata software packages version 12 are carried out for data analysis to describe the vasectomy intention among male limiters in Indonesia. Thus, frequency tables (univariate) and bivariate crosstab with Pearson Chi-Squared will be presented in order to establish the relationship between independent variables and dependent variable.

To measure the correlation between dependent variables with independent variables and their controlling variable the Logistic Regression Analysis will be used to see the significant association between those variables after concentrating on other explanatory power from the controlling variables.

3.5 Limitation of the Study

This study uses secondary data from 2012 IDHS as the only source of data, so variable determinants of acceptance of male sterilization that could be investigated is limited due to the survey nature. This study only concentrates on currently married men aged 15-54 who know male sterilization (vasectomy) method but haven't sterilized yet, with total 2,385 cases of total respondents across the nation.

CHAPTER IV

RESEARCH FINDINGS

This chapter comprises three different analytical levels namely univariate, bivariate, and multivariate analysis. Univariate analysis based on percentage and frequency distribution is run for the purpose of compiling the characteristics of the male limiters. Chi-Squared test for bivariate analysis is carried out to study the relationship between each independent variable and dependent variable. Logistic regression model is used to determine those factors that influence vasectomy intentions among male limiters in Indonesia.

4.1 Background Characteristics of the Respondents

Frequency distribution and percentage of all the factors with male's vasectomy intentions is applied in this study.

4.1.1 Vasectomy Intention

This study found that only 16.6% of the male limiters have their intention to undergo vasectomy when they reach their desired number of children.

Table 4.1 Percentage Distribution of Vasectomy Intentions among Male Limiters in Indonesia

Vasectomy Intention	Frequency	Percentage
No	1,990	83.4
Yes	395	16.6
Total	2,385	100.0

4.1.2 Socio-Economic and Demographic Characteristics

Table 4.2 describes the frequency and percentage distribution of male limiters by socio-demographic characteristics. Based on socio-economic & demographic profiles, this study found that those who are 35-44 years old group population is the majority among the other age groups. The proportion of this age is about 43.7% of the participants. While 29.6% of the participants are 45-54 years old, and 24.6% are 25-34 years old group. The youngest group comprises the lowest proportion, only 2.1%.

Regarding the place of residence, 64.8% of the respondents live in urban area, while 35.2% of them are rural population. In association with educational level, more than a half of male limiters obtains a secondary level of education (51.3%), while 28.9% of them have a higher education level, and 19.8% have a primary educational level or no education. Regarding income status, 63.4% of the participants are rich and the rest of them are categorized as poor and middle economic status with 18.8%, and 17.8% respectively.

In terms of the number of living children, 62.6% have 1-2 children, 25.7% have 3-4 children, and 7.1% have no children yet. While, 4.6% have 5 or more children.

The population distribution by occupation is compiled and found that the majority of the participants are skilled manual workers (26.3%), while 21% are professional/technical/managerial workers, 15.2% work as self-employees and agricultural workers. Those who work in sales, clerical, and services sectors are 13.4%, 9.8%, 8.2% respectively. Meanwhile, 6.1% belong to other occupations.

Regarding the ideal number of children, half of the respondents (50.3%) prefer 2 children or less. Likewise, 44.6% of male limiters expect to have 3 or 4 children. Only 5.1% prefer 5 or more children.

Table 4.2 Percentage Distribution of Male Limiters by Socio-Economic & Demographic Characteristics

Socio-Economic & Demographic Characteristics	Frequency	Percentage
<i>Age (years)</i>		

Table 4.2 Percentage Distribution of Male Limiters by Socio-Economic & Demographic Characteristics (cont)

Socio-demographic Characteristics	Frequency	Percentage
15-24	51	2.1
25-34	588	24.6
35-44	1042	43.7
45-54	705	29.6
Place of Residence		
Rural	839	35.2
Urban	1,546	64.8
Education		
Primary or lower	471	19.8
Secondary	1,224	51.3
Higher	690	28.9
Income Status		
Poor	448	18.8
Middle	425	17.8
Rich	1,512	63.4
Number of Living Children		
No Children	170	7.1
1-2 Children	1,493	62.6
3-4 Children	612	25.7
5 or more	111	4.6
Type of Occupation		
Professional/Technical/Managerial	502	21.0
Clerical	234	9.8
Sales	319	13.4
Agricultural/Self Employed	362	15.2
Services	195	8.2
Skilled Manual	628	26.3
Other	146	6.1

Table 4.2 Percentage Distribution of Male Limiters by Socio-Economic & Demographic Characteristics (cont)

Socio-demographic Characteristics	Frequency	Percentage
<i>Ideal Number of Children</i>		
2 Children or less	1,199	50.3
3-4 Children	1064	44.6
5 or more	123	5.1
<i>Total</i>	2,385	100.0

4.1.3 Subjective Norms

Table 4.3 describes the subjective norms towards vasectomy. This study found that 76.9% of the respondents disagreed that vasectomy is similar to castration, while the rest of them (23.1%) believe that vasectomy is to be castrated. Regarding the common belief which assumes that contraception is a female concern. This study found that 69.7% of the respondents disagree with this perception. In association with the ideal family size, this study found that 51.7% still expect more children, while 48.3% had fulfilled their expectation by having number of living children equals or smaller than their ideal number of living children.

Table 4.3 Percentage Distribution of Male Limiters by Subjective Norms

Subjective Norms	Frequency	Percentage
<i>Feeling Castrated</i>		
Disagree	1,834	76.9
Agree	551	23.1
<i>Regarding Contraception as Female's Concerns</i>		
Disagree	1,633	69.7
Agree	722	30.3
<i>Reaching Ideal Family Size</i>		
No	1,234	51.7
Yes	1,152	48.3

Table 4.3 Percentage Distribution of Male Limiters by Subjective Norms (cont)

Subjective Norm	Frequency	Percentage
<i>Total</i>	2,385	100.0

4.1.4 Attitude towards Vasectomy

One of the objectives of this study is to explore how men perceive vasectomy as one of their family planning methods. The study revealed that three-fourths (74.7 %) of male limiters considered vasectomy disadvantages, while 25.3% of them recognized that vasectomy would be advantages.

Table 4.4 Frequency and Percentage Distribution of Male Limiters by Attitude towards Vasectomy

Attitude towards Vasectomy	Frequency	Percentage
<i>Disadvantages</i>	1,782	74.7
<i>Advantages</i>	603	25.3
<i>Total</i>	2,385	100.0

4.1.5 Source of Family Planning Information

A list of family planning source of information was identified to assess how much the respondents were exposed to those sources of information within the last six months. Table 4.5 describes the percentage of information exposure related to source of family planning information. Table 4.5 describes that 65.4% of the participants were exposed to family planning information from television in the last six months. Only 21.6% of the participants learned from the radio. Among all the respondents, it is found out that 40.6% of male limiters obtained any family planning information from the newspaper, but more than a half (59.4%) admitted that they never read it at all and 54.2% learned from posters. Furthermore, 68.7% of the participants stated that they learned from the pamphlets, while 31.3% of them did not. In addition, it is found that almost an equal proportion of those who learned from peer educators and those who did not (50.9% and 49.1%).

Table 4.5 Frequency and Percentage Distribution of Male Limiters by Source of Family Planning Information

Source of FP Information	Frequency	Percentage
<i>Television</i>		
No	825	34.6
Yes	1,561	65.4
<i>Radio</i>		
No	1,871	78.4
Yes	515	21.6
<i>Newspaper</i>		
No	1,416	59.4
Yes	970	40.6
<i>Poster</i>		
No	1,093	45.8
Yes	1,292	54.2
<i>Pamphlet</i>		
No	1,639	68.7
Yes	747	31.3
<i>Peer Educator</i>		
No	1,214	50.9
Yes	1,171	49.1
<i>Total</i>	2,385	100.0

4.1.6 Spousal Communication

Communication between the couples is important for family planning practice. It is hypothesized that the couples who often discussed with their spouse are more likely to have positive vasectomy intention when no longer expect to have more children. This study reveals that 34.8% of the participants have ever communicated with their spouse about family planning within the last 6 months.

Table 4.6 Frequency and Percentage Distribution of Male Limiters by Spousal Communication

Spousal Communication	Frequency	Percentage
<i>Husband-Wife Communication</i>		
No	1,554	65.2
Yes	831	34.8
<i>Total</i>	2,385	100.0

4.2 Bivariate Analysis

Pearson Chi-Squared test is applied to assess the relationships between independent variables and dependent variable among male limiters in Indonesia.

4.2.1 Cross Tabulation (Chi-Squared)

The correlation between vasectomy intentions and independent variables used in this study are described as follows.

4.2.1.1 Socio-economic & demographic factors and vasectomy intentions: The findings reveals that age has correlated with vasectomy intentions significant at $p\text{-value}=0.000$. The respondents in the age group of 35-44 showed the highest tendency of vasectomy adoption whereas those who are in the age group of 15-24 years old had the lowest intention compared to their older counterparts. While 3.6% of those who are 45-54 years old compared to 4.4% of those who are 25-34 years old shared the similar opinion. Among those who have no intention to adopt vasectomy, this study found that 2.0% and 35.3% disagreed to accept vasectomy as a means of birth control.

Regarding place of residence, it is found that there is no correlation between vasectomy intention and place of residence ($p\text{-value}=0.648$). Therefore, the hypothesis is rejected.

Likewise, educational level is observed to predict vasectomy intentions. It is hypothesized that male limiters who have higher education are more likely to have positive vasectomy intention than those who have lower level

of education. However, this study found that there is no association between those variables ($p\text{-value}=0.131$). Therefore, the hypothesis is rejected.

Income status is observed in this study to explore the vasectomy intentions among those who have different economic status. The result shows a high association between variables ($p\text{-value}= 0.001$). Among male limiters who have poor economic status, only 12.3% are willing to perform vasectomy in the future, whereas 87.7% are not. Among the middle economic status, it is revealed that 21.5% have intention to adopt vasectomy, while 78.4% do not. In addition, among those who belong to the rich group, only 16.4% are prospective adopters, in comparison to 83.6% of those who are not. In terms of economic status, among those who have vasectomy intention, those who are rich have 10.4%, middle have 3.9% and poor have 2.3%. The results are relevant with hypothesis where male limiters who have higher economic status are expected to be more likely to adopt vasectomy than those who have lower economic status. Therefore, the hypothesis is accepted.

Regarding the number of living children, it is revealed that vasectomy intention shows no association with the number of living children with $p\text{-value}= 0.088$. Therefore, the hypothesis is rejected.

In contrast, type of occupation is associated with vasectomy intention. It is found that there is a significant correlation between these determinants with $p\text{-value}= 0.035$. This study found that those who work in the skilled manual sectors have a higher tendency to adopt vasectomy. While, the lowest group is those who work in services sector with just only 1.4% of total respondents. This implies that there is no association between occupation and vasectomy intentions. This study hypothesized that male limiters who work in professional/Technical/managerial are more likely to have positive intention to adopt vasectomy in the future. Therefore, the hypothesis is rejected.

Ideal number of children is observed to predict vasectomy intentions. This study found that the ideal number of children has a strong relationship with vasectomy intentions ($p\text{-value}= 0.000$). The participants who prefer to have 2 children or less is willing to perform vasectomy (20.4%), while 79.6% are not. On the other hand, about 20.3% of those who have more than 5 children show a positive intention. Only 11.7% of those who have 3 or 4 children show their positive

intention. Interestingly, those who prefer one or two children have the highest intention to adopt vasectomy. Therefore, the hypothesis is rejected.

Table 4.7 Distribution of Vasectomy Intentions among Male Limiters by Socio-Economic & Demographic Factors

Socio-Economic & Demographic Factors			
A. Age group***	Vasectomy Intention		Total
	No (%)	Yes (%)	
15-24	90.2	9.8	100%
25-34	81.9	18.1	100%
35-44	80.9	19.1	100%
45-54	87.9	12.1	100%
Pr = 17.840	df = 3	Asymp. Sig. (2-sided) = 0.000	
B. Place of Residence			
Rural	83.9	16.1	100
Urban	83.2	16.8	100
Pr = 0.208	df = 1	Asymp. Sig. (2-sided) = 0.648	
C. Educational Level			
Primary or Lower	85.8	14.2	100
Secondary	82.0	18.0	100
Higher	84.4	15.6	100
Pr = 4.063	df = 2	Asymp. Sig. (2-sided) = 0.131	
D. Income Status***			
Poor	87.7	12.3	100
Middle	78.5	21.5	100

Table 4.7 Distribution of Vasectomy Intentions among Male Limiters by Socio-Economic & Demographic Factors (cont)

Socio-Economic & Demographic Factors			
	Vasectomy Intentions		
Rich	83.6	16.4	100
Pr = 13.798	df = 2	Asymp. Sig. = 0.001	
E. Number of Living Children			
No Children	80.0	20.0	100
1-2 children	84.9	15.1	100
3-4 children	80.9	19.1	100
5 or more children	83.6	16.4	100
Pr = 6.543	df = 3	Asymp. Sig. (2-sided) = 0.088	
F. Type of Occupation			
Professional/Technical/Managerial	83.3	16.7	100
Clerical	82.9	17.1	100
Sales	82.1	17.9	100
Agricultural/Self Employed	89.5	10.5	100
Services	82.6	17.4	100
Skilled Manual	82.5	17.5	100
Other	78.1	21.9	100
Pr = 13.540	df = 6	Asymp. Sig. (2-sided) = 0.035	
G. Ideal Number of Children***			
2 children or less	79.6	20.4	100
3 or 4 children	88.3	11.7	100

Table 4.7 Distribution of Vasectomy Intentions among Male Limiters by Socio-Economic & Demographic Factors (cont)

Socio-Economic & Demographic Factors			
	Vasectomy Intentions		
	No (%)	Yes (%)	
5 or more children	79.7	20.3	100
Pr = 32.120	df = 2	Asymp. Sig. (2-sided) = 0.000	
N = 2,385	83.4	16.6	100

4.2.1.2 Subjective Norm Factors: Table 4.8 asserts male perception towards vasectomy and vasectomy intentions. The results show that among those who disagree with the perception of castration, 18.8 express their positive intention compared with 9.3% of those who perceive that vasectomy is associated with castration. This study hypothesizes that those who do not perceive that vasectomy is similar to castration will not consider vasectomy as a method of limiting their family size. Therefore hypothesis is accepted with p-value=0.000.

Unlikely, regarding male's perception towards contraception as female's concern, this study found that there is no correlation between the subjective norms regarding family planning is female's concern and vasectomy intention. Hypothesis is rejected with p-value=0.165.

The ideal family size and vasectomy intention is also observed in this study. Table 4.8 illustrates no relationship between achieved ideal family size and vasectomy intention among male limiters in Indonesia. Therefore, the hypothesis is rejected with p-value=0.689.

In contrast, between attitude towards vasectomy and vasectomy intentions there is a significant relationship. Table 4.8 shows that among those who consider vasectomy disadvantageous, 14.9% have a positive intention compared with 21.6% of those who think that vasectomy is advantageous and will accept vasectomy to limit their family size. Hypothesis is rejected with p-value=0.000.

Table 4.8 Distribution of Vasectomy Intention based on Subjective Norm factors

Subjective Norm Factors			
A. Being Castrated	Vasectomy Intention		Total
	No (%)	Yes (%)	
Disagree	81.2	18.8	100%
Agree	90.7	9.3	100%
Pr = 27.677	df = 1	Asymp. Sig. = 0.000	
B. Regarding Contraception as Female Concerns			
Disagree	82.7	17.3	100
Agree	85.0	15.0	100
Pr = 1.926	df = 1	Asymp. Sig. = 0.165	
C. Achieved Ideal Family Size			
No	83.1	16.9	100
Yes	83.8	16.2	100
Pr = 0.160	df = 1	Asymp. Sig. (2-sided) = 0.689	
D. Attitude towards Vasectomy			
Disadvantageous	85.1	14.9	100
Advantageous	78.4	21.6	100
Pr = 14.583	df = 1	Asymp. Sig. (2-sided) = 0.000	
N = 2,385	83.4	16.6	100

4.2.1.3 Source of family planning information: Table 4.9 illustrates association between all subset variables of source of family planning information, namely television, radio, newspaper, poster, pamphlet, and peer educator with vasectomy intention.

Among the participants who gained family planning information from television in the last six months prior to the survey, 18.7% showed their intention to adopt vasectomy, while 81.3% of them did not. Meanwhile, among those who did not learn any family planning information from television, 12.5% had

their intention to adopt vasectomy compared to 85.1% who did not have their intention to do so.

Similarly, family planning information from radio also has a strong correlation with vasectomy intentions. Apparently, those were exposed to family planning information by radio had role on vasectomy intention among male limiters; where 21.7% of respondents tend to adopt vasectomy compared to 15.1% of those who did not receive the information from the radio.

Likewise, those who learned from newspaper, 20.0% intend to adopt vasectomy compared to 14.2% of those who did not receive information from newspaper. Furthermore, among those who gained their knowledge from the posters, 23.4% have positive intention compared to 13.4% of those who did not.

Correspondingly, among participants who obtained any family information from the pamphlet, it is found that 23.4% of them will accept it as a means of family planning measure. Among those who did not get family information from the pamphlet, it is revealed that as much as 13.4% of male have a positive intention, towards vasectomy.

In addition, it is found that participants who gained family planning information from peer educators in the last six months, 20.1% have intention to adopt vasectomy in comparison to 13.4% of those had no contact with peer educators but showed a positive intention of vasectomy.

All in all, from 6 subsets of source of family planning information, all variables show significantly a correlation between independent and dependent variables with $p\text{-value}=0.000$. Therefore, hypothesis is accepted.

Table 4.9 Distribution of Vasectomy Intention based on Source Information of Family Planning Program

Source of Family Planning Information in the Last Six Months			
A. Television	Vasectomy Intention		Total
	No (%)	Yes (%)	
No	87.5	12.5	100%
Yes	81.3	18.7	100%

Table 4.9 Distribution of Vasectomy Intention based on Source Information of Family Planning Program (cont)

Source of Family Planning Information in the Last Three Months			
	No (%)	Yes (%)	Total
Pr = 15.171	df = 1	Asymp. Sig. = 0.000	
B. Radio			
No	84.9	15.1	100
Yes	78.3	21.7	100
Pr = 12.819	df = 1	Asymp. Sig. = 0.000	
C. Newspaper			
No	85.8	14.2	100
Yes	80.0	20.0	100
Pr = 14.129	df = 1	Asymp. Sig. = 0.000	
D. Poster			
No	87.5	12.5	100
Yes	80.0	20.0	100
Pr = 23.684	df = 1	Asymp. Sig. = 0.000	
E. Pamphlet			
No	86.6	13.4	100
Yes	76.6	23.4	100
Pr = 37.176	df = 1	Asymp. Sig. = 0.000	
F. Peer Educator			
No	86.8	13.2	100
Yes	79.9	20.1	100

Table 4.9 Distribution of Vasectomy Intention based on Source Information of Family Planning Program (cont)

Source of Family Planning Information in the Last Three Months			
	No (%)	Yes (%)	Total
Pr = 20.469	df = 1	Asymp. Sig. (2-sided) = 0.000	
N = 2,385	83.4	16.6	100

4.2.1.4 Spousal Communication: It is hypothesized that those who have communicated with their spouses are more likely to have a positive intention towards vasectomy and to undergo vasectomy when no longer expect additional children. Table 4.10 shows no correlation between vasectomy intention and spousal communication. However, it is found that among those who had spousal communication about family planning in the last six months, 18.0% expressed their intention to adopt vasectomy compared to 82.0% of those who did not. Meanwhile, those who did not discuss with their spouses about family planning matters, only 15.8% are willing to go for vasectomy, in comparison to their counterparts with 84.2%. The results do not support the study hypothesis. Therefore, hypothesis is rejected with p-value=0.189.

Table 4.10 Distribution of Vasectomy Intention Based on Spousal Communication

Husband & Wife Communication	Vasectomy Intentions		Total
	No (%)	Yes (%)	
No	84.2	15.8	100
Yes	82.0	18.0	100
Pr = 1.728	df = 1	Asymp. Sig. = 0.189	
N = 2,385	83.4	16.6	100

4.3 Multivariate Analysis

A binary logistic regression model is deployed in this study to observe factors that influence vasectomy intentions among male limiters.

To test data reliability that would fit into a logistic regression model, it is essential to confirm whether there is any multicollinearity among the controlling variables. In order to investigate the multicollinearity among the variables, Spearman's correlation is run (Spearman's correlation is used because it is a good fit for categorical variables). After running the analysis, it is recognized that 16 variables (out of 18 independent variables) of the correlation coefficient among the independent variables is low (less than 0.6).(check appendix). It means that almost all independent variables do not show multi-collinearity as manifested in the Spearman's correlation matrix.

However, from the spearman's correlation analysis it is found that only two variables that have multi-collinearity and biased estimation among the variables used with coefficient 0.7583, namely *Husband-wife communication* (subset of Spousal Communication) and *Obtaining family planning information from peer educator* (a subset of source of family planning information). Furthermore, to proclaim that the assumption for logistic regression is not violated by not including collinearly correlated variables, one of those variables is *dropped* in order to run logistic regression. In this case, this study drops *husband-wife communication variable will be dropped out*, since it showed to be insignificant on the bivariate findings in previous section.

Based on the finding of collinear coefficient, 17 out of 18 variables are run through logistic regression model to identify the impact of several independent variables on dependent variable (vasectomy intention). The main findings of this analysis are mentioned here:

For socio-economic and demographic factors almost all subsets of this variable failed to predict vasectomy intention among male limiters in Indonesia. However one sub-variable of ideal number of children (male limiters who have 3 or 4 children) is found out to be the only sub-variable which foresee male limiters intention to adopt vasectomy significant with p-value= 0.000.

Regarding to age group, with 15-24 years old age as referral group and after controlling other covariance, it is found that all age groups are not a significant predictor for vasectomy intentions among male limiters in Indonesia.

Likewise, type place of residence also failed to foresee vasectomy intentions among male limiters with significance level of 0.983. Similarly, the level of education can't be a significant predictor among male limiters to perform vasectomy as well. It can be seen from the level of insignificant between male limiters who have secondary education with 0.755, and higher education level with $p\text{-value}=0.397$. Furthermore, income status also failed to foresee vasectomy intentions. It is found that male limiters with middle income status have 0.062, while those in the rich income status have 0.596 of significance level.

Similarly, number of living children cannot be concrete predictors for vasectomy intentions among male limiters in Indonesia with level of significant 0.511 (1 or 2 children), 0.088 (3 or 4 children), and 0.220 (5 or more children).

Likewise, after controlling another variables, and using professional/technical/managerial fieldwork as the referral group, type of occupation also failed to predict vasectomy intentions among male limiters in Indonesia with $p\text{-value}$; 0.661 (Clerical), 0.707 (sales), 0.195 (agricultural/self employed), 0.820 (services), 0.935 (skilled manual), and 0.441 (others) .

In contrast, ideal number of children is proved to be a potential predictor for vasectomy intention among male limiter in Indonesia significant with $p\text{-value}=0.000$. As the referral group is male limiters who have 2 children or less, obviously male limiter who have 3 or 4 children are 0.42 times less likely to have positive vasectomy intention than those who have 2 children or less.

For the factors associated with subjective norms, castration is very crucial predictor which is significant at $p\text{-value}=0.001$. It is identified that male limiters who think vasectomy is similar to castration are 0.44 times less likely to go for vasectomy than those who did not. In contrast, the finding reveals that male limiters who think that contraception are female's concerns is insignificant predictor ($p\text{-value} = 0.786$).

Furthermore, for male limiters who already achieved yet their ideal family size are proved to be a significant predictor towards vasectomy intention among male limiters in Indonesia, significant at $p\text{-value}=0.035$. Those who have not achieved yet

their ideal family size as referral group, it is revealed that male limiters who achieved their ideal family size are 0.57 times less likely to adopt vasectomy.

Regarding attitude towards vasectomy, male limiters who perceived vasectomy as advantageous is proved to be the concrete predictor for vasectomy intention among male limiters in Indonesia with 95% level of confidence (p-value=0.014). Male limiters who regarded vasectomy as advantageous are 1.59 times more likely to have intention than those who did not.

Furthermore, this study found that the pamphlets played major role as a significant predictor for vasectomy information and intention. The pamphlet is the strongest predictor after controlling other variables (p-value=0.042). Male limiters who learned about any family planning information in pamphlet are 1.55 times more likely to adopt vasectomy than those who did not.

Table 4.11 Logistic Regression for Vasectomy Intention with Independent Variables

Vasectomy Intention	OR	Robust SE	z	P>z	95% CI	
A. Socio-economic & Demographic Factor						
- Age (10 Years age group) 15-24®						
25-34	1.99	1.08	1.27	0.205	0.69	5.74
35-44	2.34	1.29	1.54	0.123	0.80	6.87
45-54	1.35	0.82	0.50	0.615	0.42	4.41
- Type Place of Residence Rural ®						
Urban	1.00	0.22	-0.02	0.983	0.65	1.54
- Educational Level Primary or Lower ®						
Secondary	0.91	0.26	-0.31	0.755	0.52	1.60
Higher	0.74	0.26	-0.85	0.397	0.37	1.48
- Income Status Poor ®						
Middle	1.72	0.50	1.87	0.062	0.97	3.05
Rich	1.17	0.34	0.53	0.596	0.66	2.05
- Number of Living Children No Children ®						
1 or 2 children	0.79	0.28	-0.66	0.511	0.40	1.58

Table 4.11 Logistic Regression for Vasectomy Intention with Independent Variables (cont)

Vasectomy Intention	OR	Robus t SE	z	P>z	(95% CI)	
3 or 4 children	2.09	0.91	1.71	0.088	0.90	4.89
5 or more children	2.16	1.36	1.23	0.220	0.63	7.42
- Ideal Number of Children 2 Children or Less ®						
3 or 4 children	0.42	0.09	-4.05	0.000	0.28	0.64
5 or more children	0.59	0.27	-1.16	0.248	0.24	1.45
- Type of Occupation Proff/Managerial/Technica l ®						
Clerical	0.87	0.28	-0.44	0.661	0.45	1.65
Sales	0.88	0.30	-0.38	0.707	0.45	1.71
Agricultural / Self Employed	0.62	0.23	-1.30	0.195	0.30	1.27
Services	0.92	0.34	-0.23	0.820	0.44	1.90
Skilled Manual	0.98	0.29	-0.08	0.935	0.54	1.76
Other	1.37	0.57	0.77	0.441	0.61	3.09
- Being Castrated Disagree®						
Agree	0.44	0.11	-3.29	0.001	0.27	0.72
- Regarding Contraception as Female Concern's Disagree®						
Agree	0.94	0.20	-0.27	0.786	0.63	1.42
- Achieved Ideal Family Size No®						
Yes	0.57	0.15	-2.11	0.035	0.33	0.96
- Attitude towards Vasectomy Disadvantages®						
Advantages	1.59	0.30	2.47	0.014	1.10	2.29
- Obtaining Family Information from Television No®						
Yes	1.23	0.26	1.01	0.313	0.82	1.85
- Obtaining Family Information from Radio No®						
Yes	1.29	0.30	1.09	0.277	0.82	2.02

Table 4.11 Logistic Regression for Vasectomy Intention with Independent Variables (cont)

Vasectomy Intention	OR	Robus t SE	z	P>z	(95% CI)	
- Obtaining Family Information from Newspaper No®						
Yes	1.03	0.21	0.13	0.897	0.69	1.52
- Obtaining Family Information from Poster No®						
Yes	1.14	0.25	0.59	0.557	0.74	1.75
- Obtaining Family Information from Pamphlet No®						
Yes	1.55	0.34	2.03	0.042	1.02	2.38
- Obtaining Family Information from Peer Educator No®						
Yes	1.42	0.26	1.88	0.060	0.99	2.04
Constanta	0.0994 1	0.06557	-3.5	0.000	0.02729	0.362

Number of Observation	=	2,385
Wald chi2(29)	=	82.25
Prob> chi2	=	0.000
Log pseudolikelihood	=	-971,56027
PseudoR2	=	0.0927

CHAPTER V

DISCUSSION & RECOMMENDATION

5.1 DISCUSSION

Investigating the relationship between several independent variables and dependent variable, it is found that some independent variables namely; ideal number of children, being castrated, achieved ideal family size, regarding vasectomy as advantageous, and obtaining family planning information from pamphlet are the significant predictors of vasectomy intentions among male limiters in Indonesia.

The significant predictors include: the ideal number of children, being castrated, achieved ideal family size, vasectomy as advantageous method, and gaining family information from the pamphlet. The other observed variables cover age group, place of residence, educational level, income status, number of living children, and type of occupation are categorized under socio-economic and demographic factors, The variable of regarding contraception as female's concern is observed under the subjective norm factors. Obtaining FP information from TV, radio, newspaper, and poster are also observed under source of FP information factors and they did not show any influence on vasectomy intention among male limiters in Indonesia in this study.

The multivariate analysis is described below;

5.1.1 Socio-economic & Demographic Factors

In total, there are 7 sub-categories, namely age, place of residence, educational level, income status, number of living children, type of occupation, and ideal number of children. Noticeably, only the ideal number of children showed a positive association with the dependent variable in multivariate analysis. Male limiters who currently have 3 or 4 children are less likely to go for vasectomy compared to those who have no children after controlling for other covariates. It is possible because these group feel that they already fulfilled their ideal number of children. In Indonesia,

people prefer 2 children as their ideal family size. As we may see from the background characteristics of male limiters in this study, 50.3% of participants prefer having 2 children or less.

According to IDHS 2002/2003, and 2007 almost a half of the respondents (45.5%) preferred two children as their ideal number.(IDHS 2007). This more or less implies that the government has succeeded in promoting the family planning program with the main theme 'birth control' with a certain ideal number of children into the public mindset.

In the era of President Soeharto who ruled out Indonesia for 32 years, family planning was very popular among the Indonesians. The government introduced the famous slogan "two kids is enough" which became a common standard for couples. However, vasectomy is not yet popular among men regardless the number of living children they have. Other methods of contraception are their preferable choices.

Age is proved not to be a strong predictor for vasectomy intention among male limiters in Indonesia. However, based on the bivariate analysis in this study found that age has a significant correlation with vasectomy intentions. This finding is contradictory to the previous studies when age usually became a significant predictor of vasectomy intentions. Studies in India and Sri Lanka where the wives of vasectomy acceptors were 35 years or more.(Pile & Barone, 2009). Likewise, the same pattern was found in the USA, which revealed that 28 percent of vasectomy acceptors were men aged 40-44.(Anderson et al., 2010). Another previous study conducted in Indonesia also revealed that more than 30 percent were men aged 30 years and over.(Indrayani; Fatma, 2013)

The inconsistent result regarding age factors towards vasectomy intention might be due to the number of the non-intended and intended respondents who mostly are in the group of 35-44. In addition, 35-44 years old age group are the majority of those who are defined as the limiters in this study.

Regarding place of residence, this study found that there is no correlation between place of residence and vasectomy intentions for both bivariate and multivariate analysis. This could be possible due to no clear significant distinction between rural and urban differences in association with vasectomy information and education. According to the latest census the proportions of people who live in urban

and rural area were almost equal, 49.79% for urban, and 51.21% for rural residents.(BPS, 2010). It also assumes that male limiters have been exposed to family planning information due to the intensive promotion policy and services. Furthermore, cultural norms in rural and urban areas are closely connected. A strong religious belief and teachings play a major role and to some extents obstruct the couples particularly men not to easily accept vasectomy as a means of birth control.

However, the finding of this study is similar to the previous studies which found that place of residence can determine vasectomy intention. In 2007, 4.2% of rural population in Indonesia considered to adopt vasectomy in the future. Whilst, there were only 1.7% of rural's who intent adopting vasectomy.(IDHS, 2007) The studies conducted in Indonesia, Nepal, Sri Lanka, and Thailand found that four out of five vasectomy acceptors lived in rural area, whereas in India and Philippines 3 out of four and two out of three acceptors live in rural area, respectively. (Pile & Barone, 2009)

However, this study found that place of residence has no relationship with vasectomy intention. Similarly, the level of education is also not a strong predictor to predict vasectomy intentions. The finding found in this study is different from some of the previous studies in which the level of education is associated with vasectomy intentions. For example, the study conducted in Sargodha, Pakistan found that married men who had attained secondary or higher education tend to accept vasectomy as their contraceptive method.(Rashid, 1998)

Income status, number of living children, type of occupation are also not the predictors for vasectomy intentions among male limiters in Indonesia.

Interestingly, the number of living children generally is a significant predictor for the vasectomy intentions. However, this study did not show its significance. In this study male limiters prefer to have 2 children or less. This family norm could be inhibited as a result of the national family program campaign. This study found that 62.6% have 2 living children or less but the intention to undergo vasectomy is not their mindset. This finding is contradicting with other studies which confirmed that number of living children is strongly associated with vasectomy intentions. The study in US found that 80 % of vasectomy adopters are those who have 2 or more children.(Sharma et al., 2013)

5.1.2 Subjective Norm Factors

Regarding the subjective norms, 3 different norms are observed. Feeling castrated, regarding contraceptive as female's concern, and achieved ideal family size. It is identified that male limiters who feel being castrated if having vasectomy are less likely to go for vasectomy than those who did not. This finding is similar to previous to the previous research which revealed that "being castrated" prevent males to undergo vasectomy. This might be a common misperception among males towards vasectomy. As found in West Java and South Sumatra, 47% of men admitted that they have heard about the rumor with fears.(Wahyuni, 2011) In another research conducted by Rasyid (2008) also supported this finding. Men considered that vasectomy reduces their sexual desire, or are overweight. The finding is also similar to IDHS 2007 survey, which revealed that 4 percent of male respondents fear of masculinity dysfunction.(IDHS, 2007)

In Indonesia, sterilization has negative connotations among the majority moslem religious leaders. Even in the past time, words "vasectomy" or "tubal ligation" should only used in the context of medical indication due to strong stigmatization.(Samekto, 1982) Until now, most married men in Indonesia still strongly believe in this normative rules since the religious fatwa still have a bias decision-making whether they should allowed sterilization as one of the contraceptive methods. Frankly speaking, it was half-hearted provision of MUI. However, actually, government has terrific opportunities to deliver message about vasectomy for men which is marriage advises which normally conducted in sub-district level of each pre-married couples. Marriage advises itself normally delivered to the couples before they stated holy "vow" in front of "penghulu"¹ as a collaborative program between Ministry of Religion and NFPFB of Indonesia did not specifically talk about vasectomy.

Achieved ideal family size is a significant predictor for vasectomy intentions among male limiters in Indonesia (p-value=0.035). It can be described as follows; Although current married men achieved their ideal number of family size, they are reluctant to adopt a permanent method of birth control. In IDHS 2007 found

¹ Penghulu : a person who lead marriage ceremony in Islam

that 43.9% current married men in Indonesia argued that they could rely on other types of contraceptive methods rather than vasectomy. They believed that vasectomy would decrease their sexual desire (4.7%), manhood (4.2%), as well as still desire to re-marry.

Furthermore, these findings can explain the basic theory which underlying this study, namely Theory of Planned Behavior and models from Bunce, as well as Bertrand model's. In the Theory of Planned Behavior (TPB), subjective norms are strongly influenced the opinions of reference and views of the community within the recipient/individual live. In addition, the "motivation to comply" as the subset subjective norms and its final purpose as intention in TPB, also affect a person decision in terms of intentions. So that, personal desires can be obscured by the "general view" of something, like in this case the intention to use vasectomy. Married men may worry about violating the "general view" that applies in the surrounding community. General view here means normative and religious belief which implemented within societies and strongly affects current married men not to choose permanent/long acting contraceptive methods.

The other variables provided as regarding contraception as female's concerns which fall under subjective norm factor do not show the significant association with vasectomy intentions in this study. This may be due to a small number of male limiters which 69.7% who have no intention still believe that vasectomy is female's concerns as well as the perception towards vasectomy as disadvantageous practice. So it can be assumed that they already know the essence of vasectomy comprehensively such as put man in control, cheaper than tubal ligation, safer, gives man freedom, and etc. Unfortunately, this study has some limitations due the nature of the survey data which did not allow for any deeper analysis.

5.1.3 Attitude towards vasectomy

Based on this study, male limiters who have "advantageous" attitude are more likely to adopt vasectomy than those who do not. Surprisingly, as mentioned earlier, male limiters that have the intention and those who do not, have the same attitude towards vasectomy. It can be seen in the bivariate findings that 78.4% considered vasectomy as advantageous but have no intention to undergo vasectomy.

This may be due to a change in the behavior of the Indonesian men towards the modern contraceptive methods that lead to more positive behaviors than married men in the past. They are more familiar with of the positive benefits that can be utilized from using this reversible contraception. Moreover, it is cheaper, more efficient, harmless operation, and it's time for male to have their role in family planning. The information from the mass media in Indonesia was provided by the related institution is also assumed to play a major role in changing their mindset. This is evidenced by the nearly 83% of men who have intention to use vasectomy claimed that they ever heard of information about family planning on television compared with men who have no intention of 18.7%. (table 4.7)

It also can be seen from the proportion of married men who ever heard family planning information from radio in the last six months, 66.6 percent said they ever learned family planning from radio, even though they do not have the intention to use a vasectomy. (table, 4.7). In addition, this is supported by a research finding, which says that half of men reported choosing vasectomy over a reversible method because it was the safest method in terms of preventing pregnancy, and 62% couples rely on vasectomy over female sterilization because it was considered as simpler and safer.(M. A. J. Barone, Christopher H; Luick, Melanie A; Teutonico, Daria L; Magnani, Robert J, 2004)

This finding also able to explain the basic theories which underlying this study namely TPB. In the Theory of Planned Behavior (TPB), attitude is strongly influenced by the belief and evaluation of the behavior. This is consistent with findings in several countries in South East Asia, where 62.3% of the husbands of postpartum women in Thailand will likely not to be a candidate for prospective vasectomy acceptors if they believe that vasectomy is not a good thing.(Jacob, 1992) Another supported finding in Sargodha, Pakistan also revealed that 81% of men who have good viewpoint on vasectomy were more likely to perform vasectomy.(Rashid, 1998)

5.1.4 Source of Family Planning Information

Obtaining family planning information via the pamphlets as the subset of source of family planning information is proven to be an accurate predictor of the intention to use vasectomy. This may happen because the majority of male limiters

read pamphlets taped in public open spaces, such as maternity clinics, hospitals, field personnel, or circulars of certain events related to vasectomy. Besides that, the pamphlet usually 'armed' by very attractive visualizations which attract men to read the information provided. This might be one reason of why male limiters acknowledge the role of pamphlets as an influential media and give different impact on their decision-making towards vasectomy. The other reason is NFPFB of Indonesia regularly provide many kinds of printed media, especially pamphlet to be source of family planning information's. Financial budget for advocating and counseling are mainly used to promote family planning.

Since NFPFB of Indonesia already spread out in all provinces which is supported by local authorities to encourage and promote the community to use any modern male methods, particularly vasectomy. This fact is supported by the official statement of NFPFB Head Chief, Fasli Jalal who emphasized that 98% of Indonesian are familiar with family planning.(Nurhayat, 2014) However, there is still no such huge intention to use any methods in lining with the proportions. Furthermore, government has set up some monetary incentives for adopters which also are familiar in the societies as the times goes by since NFPB introduced vasectomy in early 1970.

Likewise, it may also associate with information which has been widely spread out in all regions in Indonesia. This study indicates uniformity of understanding about vasectomy acceptance in all the provinces where indicated by the rejection and acceptance of sterilization, although the province is located in Java show much larger number of vasectomy intention than the other islands.(IDHS 2012)

However this finding is different from other previous study, which conducted in North India in 2013 which revealed that among males who are aware of Non Scalpel Vasectomy, 47.7% reported that television is the main source of information.

In contrast, other source of information include radio (16.7%), magazines (4.5%), poster (3.5%), newspaper (2.3%), and pamphlet (0.7%).(Garg et al., 2013). It might happen because NFPFB are reluctant to promote sterilization publicly and openly. Eventhough NFPFB has set specific annual budgets and also institute particular divisions to promote family planning, called by; Advocation, Data, and Information (Adpin in Bahasa abbreviation) Sub-divison in each provinces level. But

no specific budgets provided to promote vasectomy. It can be seen on NPFPPB official advertisements, talk show, soap opera, and even comedy show in television, newspaper, as well as radio did not discuss vasectomy. They usually provide general information on family planning.

5.1.5 Spousal communication

Regarding spousal communication, especially husband-wife communication although it was excluded from multivariate analysis, results of bivariate is fail to foresee the correlation among male limiters who discuss any family planning program with their wives and vasectomy intention among male limiters in Indonesia. This may be due to a discussion between husband and wife does not mention essentially vasectomy but only a general discussion about family planning.

However, the finding of this study is different from previous study which found that spousal communication was normally a significant predictor regarding vasectomy intention and acceptance. In Jordania where majority of muslim population revealed that 74 percent of women and 58 of men expressed that their joint decision between husband and wife was the major reason behind vasectomy adoption.(Underwood, 2000)

In another earlier study which was conducted in Kenya, 83 percent of spouse admitted that they decided to use any methods after having a discussion with their partners.(Lasee, 1997).

5.2 CONCLUSION

This study revealed many factors that prevented males from vasectomy intention as one of the family planning method when no longer in need of any more children. Only 16.6% of male limiters intend to adopt vasectomy. Socio-economic and demographic characteristics are proved not fully the influential factors to the family planning program, especially vasectomy. It is noted that only the ideal number of children as the only subset of socio-economic & demographic factors is predictor for the vasectomy intentions. Among three subsets of subjective norm factors, 2 of

them namely; being castrated and achieved ideal size of children become significant predictors towards vasectomy intention among male limiters in Indonesia.

Pamphlet plays a major role to persuade married male to accept vasectomy by providing adequate and attractive information using public area and health providers and health centre as the main focus. Meanwhile, spousal communication is proved to be unable to support male limiters decision to have intention on sterilization. This is related to the subjective norm and attitude towards vasectomy which is commonly applied in predominant male societies, solely Indonesia.

5.3 RECOMMENDATIONS

The outcomes from this study lead to the following recommendations that one subset of socio-economic & demographic backgrounds i.e; ideal number of children, being castrated and reaching ideal family size of subjective norm factors, also pamphlet have significantly relationship with vasectomy intention among male limiters in Indonesia. Therefore, the family planning program should strictly focus on how to promote vasectomy as well as men role's in family planning using those determinants.

The specific efforts to promote vasectomy as one of family planning methods as follows;

- To promote married male to have positive attitude towards vasectomy and have a tendency to choose this method when no longer desire for additional children. More information about safety procedure under the medical specialist should be strongly emphasized.
- A meeting among the stakeholders will promote more participation and better understanding towards vasectomy. This would help to mitigate all misperception such as castration, masculinity dysfunction..
- Based on the theoretical concepts and framework adopted in this study, it is advisable to increase mutual understanding between government, religious leaders and prospective adopters by providing correct information regarding vasectomy advantages and its beneficiary,

including softening the strict “fatwa” against vasectomy and other male contraceptive methods.

- The government should collaborate effectively among related institutions such as NFPFB, MoH, and Ministry of Religious Affair in promoting vasectomy. It can be done by utilizing opportunities which are available in pre-marriage procedures in Islam rituals ceremony by giving encouragement to the married couples to use efficient and cheap family planning method like vasectomy.
- Provide many types and attractive pamphlets taped in any family planning provider clinics and midwives in village level
- Encourage spouses to communicate any family planning matters by giving disseminations to head of households which was normally males within predominant male societies

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APPENDICES

APPENDIX A

MULTICOLLINEARITY TABLE BETWEEN CONTROLLING VARIABLES																		
	Age	Type. Of	Edu Level	Income S	No. of Liv	Type of Q	Ideal. No	Castrated	Cont. Fem	Reach. Id	attitude	tv	radio	news	poster	pamphle	peer	huswife
Age	1																	
Type. Of Res.	0.0097	1																
Edu Level	-0.0436	0.2292	1															
Income Stat.	0.1143	0.3818	0.4044	1														
No. of Liv. Childre	0.4241	-0.0453	-0.0977	-0.0398	1													
Type of Occ	-0.0481	-0.0358	-0.494	-0.2908	-0.0127	1												
Ideal. No. Children	0.0687	-0.0286	0.0248	-0.0437	0.2744	-0.0677	1											
castrated	0.0078	0.0392	0.0182	0.0116	0.0277	0.0161	0.0189	1										
Cont. Fem. Concerns	0.0516	-0.1749	-0.293	-0.2129	0.0731	0.1228	0.0223	0.0022	1									
Reach. Id. Fam. Size	0.4129	-0.015	-0.086	0.0122	0.5137	0.0279	-0.3075	-0.0057	0.0386	1								
attitude	-0.0193	0.0242	0.067	0.0181	-0.0475	0.0176	-0.0716	0.0673	-0.0241	-0.0145	1							
tv	-0.0496	0.0415	0.0658	0.0789	-0.0433	-0.053	-0.0334	-0.0488	0.0005	-0.0168	-0.011	1						
radio	0.000	0.0015	0.0378	0.0088	-0.0363	-0.0356	-0.0057	-0.0102	0.0316	-0.0303	0.0534	0.2728	1					
news	-0.0273	0.1306	0.2599	0.1633	-0.0776	-0.1692	-0.0398	-0.0344	-0.082	-0.0362	0.0261	0.341	0.271	1				
poster	-0.0641	0.1366	0.1791	0.1485	-0.0658	-0.1196	-0.0179	0.0274	-0.1109	-0.0656	0.037	0.2038	0.1532	0.3567	1			
pamphlet	-0.024	0.0651	0.1997	0.1074	-0.039	-0.1606	0.0161	-0.0485	-0.095	-0.0495	0.0382	0.2235	0.1882	0.3493	0.5232	1		
peer	-0.1367	-0.0086	0.1446	0.0239	-0.0542	-0.0925	-0.0129	-0.0323	-0.1117	-0.0578	0.0312	0.1553	0.1138	0.2266	0.2074	0.1897	1	
huswife	-0.1462	-0.0134	0.0998	0.0128	-0.0335	-0.0506	0.0278	-0.0501	-0.1107	-0.07	0.0076	0.111	0.069	0.1206	0.1377	0.0968	0.7583	1

APPENDIX B (Operational Definition of Variables)

Variables	Operational Definition	Level of Measurement
Dependent variable		
Vasectomy Intention	0=No 1=Yes	Nominal
1. Independent variables		
2.1 Socio-Economic & Demographic factors		
Age	1= 15-24 2= 25-34 3= 35-44 4= 45-54	Ordinal
Type Place of Residence	0= Rural 1= Urban	Nominal
Educational Level	1= Primary or Lower 2= Secondary 3= Higher	Ordinal
Income Status	0= Poor 1= Middle 2= Rich	Ordinal
Number of Living Children	0= No Children 1= 1-2 Children 2= 3-4 Children 3= 5 or more Children	Ordinal
Type of Occupation	1=Professional/Technical/Managerial 2= Clerical 3= Sales 4= Agricultural/Self Employed 5= Services 6= Skilled Manual 7= Others & Not Working	Ordinal
Ideal Number of Children	0= 2 Children or Less 1= 3 or 4 Children 2= 5 or more Children	Ordinal

Operational Definition of Variables (Cont)

Variables	Operational definition	Level of measurement
2.2 Subjective Norm Factors		
Regarding Contraception as Female Concerns	0= Disagree 1= Agree	Nominal
Being Castrated	0= Disagree 1= Agree	Nominal
Achieved the Ideal Family Size	0= No 1= Yes	Nominal
2.3 Attitude towards Vasectomy		
Disadvantageous	0=disadvantageous	Nominal
Advantageous	1 = advantageous	
2.4 Source of FP Information		
Television	0= No 1= Yes	Nominal
Radio	0= No 1= Yes	Nominal
Newspaper	0= No 1= Yes	Nominal
Poster	0= No 1= Yes	Nominal
Pamphlet	0= No 1= Yes	Nominal
Peer Educator - Male Limiters Communication	0= No 1= Yes	Nominal
2.5 Spousal Communication		
Husband-Wife Communication	0= No	Nominal

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