Factors associated with use of traditional family planning methods in the Democratic Republic of Congo: a comparison of Kinshasa and Kongo Central.

By

Gabriele Gardenal

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ABSTRACT

Gabriele Gardenal

Factors associated with use of traditional family planning methods in the Democratic Republic of Congo: a comparison of Kinshasa and Kongo Central.

(Under the direction of Anna P. Schenck and Meghan Corroon)

The third United Nation's Sustainable Development Goal "Ensure healthy lives and promote wellbeing for all at all ages" in subsection seven makes explicit reference to improving family planning and ensuring universal access. Traditional family planning methods have received less attention from researchers than other methods. Traditional methods are common in Democratic Republic of Congo (D.R.C.) and are less effective than modern methods ("Democratic Republic of Congo Demographic and Health Survey 2013-14," 2013) (WHO, 2015). Recently, the government increased its commitment to support family planning (PMA2020, n.d.). The paper analyzes family planning behaviors and prevalence among women in three outcome categories: non-users, traditional family planning methods users and modern family planning methods users. The paper reports association between the outcome variable and socioeconomic characteristic, exposure to family planning messages and reproductive preference of women living in Kinshasa and Kongo Central, using Performance Monitoring Accountability 2020 data. The paper show traditional family planning prevalence varies across provinces: 22% in Kinshasa and 13% in Kongo Central. Women with more than five children are more likely to select traditional family planning methods in Kinshasa. Non-users are negatively associated with having children and are more likely to be exposed to FP messages through television, which is negatively associated with the probability of non-users. FP programs in the country might select television as method to reach non-users.

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Introduction:

The Sustainable Development Goals defined by the United Nations have set universal access to family planning services as one of the key goal to achieve by 2030 (WHO, 2017). Attainment of this goal has been slow. In 2017 sub-Saharan Africa registered the highest prevalence of unmet need of any world region and it was estimated that 21% of women of reproductive age did not have access to family planning services when needed (Guttmacher Institute, 2017). It is important to note when comparing unmet need statistics from different sources, some approaches categorize traditional family planning methods (TFPM) users as having access to family planning methods (Bradley, Croft, & Fishel, 2012), while other methods consider TFPM users as part of the unmet need (Singh, Darroch, & Ashford, 2014). This difference is related to classification of modern and traditional methods according to their efficacy in preventing pregnancy. According to the WHO, family planning methods are divided into modern and traditional methods according to their efficacy in preventing pregnancy, as reported in Table 1.

Modern family planning methods tend to have higher efficacy while traditional family planning methods still have high efficacy, around 91%, but lower when compared to modern methods. TFPM also require collaboration of the partner, otherwise efficacy can fall below 80% (WHO, 2015). According to the WHO classification, modern family planning methods (MFPM) are: pill, implant, injectable, combined injectable contraceptives (CIC), combined contraceptive vaginal ring (CVR), Intrauterine device (IUD), male and female condoms, male or female sterilization, Locational amenorrhea method (LAM), emergency contraception, Standard Days methods, Basal Body Temperature (BBT) Method and Symptom-thermal Method. While TFPM include: withdrawal (coitus interruptus) and calendar method or rhythm method.

In 2017, TFPM were used by 5% of married women currently married worldwide, compared to 58% using modern family planning. The majority of women using TFPM live in developing countries, 59 million (United Nations, 2016). Globally the two main TFPM have similar prevalence: abstinence, 47%, and withdrawal, 42% (Singh et al., 2014).

Human rights approach to Family Planning approach and TFPM:

One of the results of the 2012 Family Planning Summit, sponsored by the UK Government Bill and & Melinda gates foundation, was the development of a new methodological framework to approach family planning. The new framework posited that family planning is integrated with the human rights approach to achieve the goal of providing access to family planning services to 120 million women. The human rights-based approach embraces the principle of equity and equality: access should be granted to all population similarly, including to that part of the population harder to reach, also freedom of choice should be assured women (Hardee et al., 2014). The first part of the approach positions the responsibility to choose how many children to have in the hands of the parents, as declared during the International Conference on Population and Development in 1994. The second part aims to offer access to health services, information and education and the third is the right to nondiscrimination(Hardee et al., 2014). With reference to this paper, violations of the human right principles might come from generating barriers to access the method of preference. To assure violations do not happen, women should be granted a free and informed choice (The RESPOND Project, 2013).

In line with the human rights perspective, Gebreselassie and colleagues suggested to inform women about more effective methods but also to educate further about TFMP (Gebreselassie, Bietsch, Staveteig, & Pullum, 2017).

Context of family planning in the Democratic Republic of Congo:

The Democratic Republic of Congo (D.R.C.) has a population of 78 million people composed by 200 ethnic groups who speak several different languages. The country is the size of continental Europe and is the second largest nation in Africa. In 2016, 2,230,000 people had been estimated to be internally displaced in D.R.C. along with another half a million of refugees (UNOCHA, 2017). The main cause of displacement is conflict and violence. In the precolonial and colonial period, between 1885 and 1960, proliferation of armed groups in D.R.C. was a consequence of slave trade where villages protected themselves from raids. Two major events

are associated with the instability the country is currently experiencing: the First Congo War (1996 – 97), followed by the Second Congo War (1998-2003)(Stearns, Verweijen, & Eriksson Baaz, 2013). The conflict is currently concentrated in the eastern part of the Country. Despite lack of consensus on number of deaths caused by the war, studies suggest this number to be between 1 and 5 million casualties, 90% are due to communicable disease and only 10% are direct cause of violent death (Zarocostas, 2009).

The D.R.C. is demographically a very young country with a total population of 78 million and an annual growth of 3,4%. The majority of the population, 61%, is younger than 20 years old (Ministères de la Santé Publique et du Plan(RDCongo), 2014). The D.R.C. has the third highest fertility rate in the world, 6.6 children per women. The fertility rate reaches 7.4 in rural areas compared to 5.4 in urban areas (World Bank, 2017). According to the Demographic and Health Survey (DHS), 20% of women are currently using any contraceptive methods, 8% are using modern methods and 13% percent any traditional methods. Poverty is high in the country, 71% of the population live below the poverty line. According to the last DHS, fertility rate is negatively correlated with education and wealth status.("Democratic Republic of Congo Demographic and Health Survey 2013-14," 2013).

Historically the government demonstrated support to family planning policies. More recently, the commitment has been inserted in national health policy and national program has been established. Mukaba and colleagues identify some of the enabling factors of such commitment in the recognition of family planning as a method to improve health conditions, availability of best practices, partnership with other government in the regions and potential for external partnerships(Mukaba, Binanga, Fohl, & Bertrand, 2015). Family planning is now one of the priorities in the current National Heath Strategy and a Family Planning Strategic Document has been developed. Kayembe confirmed recent improvement on the supply side is relevant but this is not enough to reduce unmet need of FP. They found supply of modern family planning methods have improved in the recent years in urban areas. They also estimated 63% of facilities in Kinshasa met standards of availability in terms of supplies, trained personnel and information. The number of facilities meeting the standard almost doubled from 2012 to 2013 (Kayembe et al., 2015).

Findings from the literature of factors associated with traditional family planning methods:

Traditional family planning methods have not received a lot of attention in the recent literature (Rossier & Corker, 2017) (Gebreselassie et al., 2017). In Zaire, now D.R.C., in the early eighties, Bertrand found TFPM and MFPM were associated with different socioeconomic variables (Bertrand, Mangani, Mansilu, & Landry, 1985). Similar results were found by Gebreselassie and colleagues across 16 developing countries (Gebreselassie et al., 2017).

Gebreselassie found that use of TFPM is positively association with, education, and urban areas in some countries. Women with more than five children were positively associated with TFPM. Association between TFPM and wealth was found only in some countries and with opposite directions.

The prevalence of TFPM decreased over time, and discontinuation was higher among MFPM users (25%) compared to TFPM users (2%) (Gebreselassie et al., 2017).

In Kenya, Beguy found preference for TFPM higher among older women looking for short acting methods, while younger women preferred modern methods (Beguy & Mberu, 2015).

In Tanzania, Jato found exposure to media did not increase probabilities to use TFPM since these methods are not usually advertised, and reported that media have a weaker effects on TFPM prevalence compared to other methods (Jato et al., 1999).

Traditional family planning methods are subject to underreporting. This was first noticed in France in early 1960 and more recently in Burkina Faso. By adapting the questionnaire to better detect use of traditional family planning, Rossier found a 21% increase in the utilization of TFPM between the DHS and Health and Demographic Surveillance System HDSS (Rossier, Senderowicz, & Soura, 2014).

Where access to MFPM is low due to cost, physical availability issues, as in the case of D.R.C., TFPM have been suggested as potential alternative to MFPM (Rossier & Corker, 2017). There is also evidence that women prefer TFPM to MFPM due to religion, traditions, personal and partner opposition (Staveteig, 2017) (Staveteig, 2016).

This paper fills a gap in the literature providing insights into the factors associated with the use of traditional family planning methods in D.R.C.

Methodology:

Performance Monitoring Accountability 2020 Data:

The study uses a cross sectional sample from Performance Monitoring and Accountability 2020 (PMA 2020) dataset. The total sample size is 4250 women from the Democratic Republic of Congo, 2582 from Kinshasa and 1668 from Kongo Central. The data collection follows a two-stage sampling design.

In Kinshasa, 58 enumeration areas (EA) were randomly selected and within each EA 33 households were randomly selected all women within the households were contacted, in total 2.595 women in the reproductive age between 15 and 49 gave consent to be interviewed.("User notes for PMA2016/DRC (Kinshasa & Kongo Central) Round 5 Household and Female data," 2017)

In Kongo Central the same sampling method was used and 52 enumeration areas (EA) were randomly selected. Within each EA, 33 households were randomly selected and all women of reproductive age were contacted and consented to be interviewed. In total 1,697 women gave consent to be interviewed and completed the survey. Data collection ended in July 2016 in both areas. ("User notes for PMA2016/D.R.C. (Kinshasa & Kongo Central) Round 5 Household and Female data," 2017)

The sample includes both sexually active and not sexually active women. At the time of the study sexually active women represented 75% and 87% of the sample respectively in Kinshasa and Kongo Central. Pregnant women were excluded from the sample. After further cleaning unweighted sample was reduced to 2,473 and 1,535 women in Kinshasa and Kongo Central respectively. The analyses used survey weights in order to calculate results that are representative of the population and take into account the design effect of the sample strategy.

Variables:

Outcome variable: The outcome variable classifies women in three mutually exclusive categories: non-users, users of modern contraceptive methods and users of traditional contraceptive methods. To determine which methods women were using, the questionnaires asked women to state the methods used in the last 12 months to delay or avoid pregnancy. If more than one method was mentioned, the most

effective method was selected. The survey included three options for traditional family planning methods: rhythm, withdrawal and other traditional methods, which included folkloric methods (amulets, beads, herbs, etc.)

Sociodemographic variables: Women are grouped into three age groups: 15 to 25, 26 to 35 and 36 to 50. The education variable categorizes women who attained a certificate of primary education or below, secondary education or a degree higher than secondary. Relationship status is made of three categories: women currently in a relationship, women not in a relationship and divorced and widow combined. Wealth status is a three category variable (low, middle high), initially it was made of five categories: five quintiles. The two lowest and two highest categories were collapsed into two categories: low and high. Parity indicates the number of children born alive (whether or not they are living with the women currently), with 7 categories: the first 6 categories indicate the number of children from 0 to 5, the seventh categories grouped all women with 6 or more children.

Exposure to FP messages:

Variables indicating exposure to educational information are coded as yes or no to indicate whether women recall receiving information about family planning. Family planning methods were delivered through: radio, television, health care works during outreach visits and visits at health center.

Preferences toward future pregnancies are coded as yes to indicate women who would like to have children in the future, no indicates women who are not planning to have more children when the question was asked or undecided about the option.

Type of analysis in the paper:

The goal of the study is to identify factors associated with the use of traditional family planning methods in these two geographical areas using cross sectional data.

The first analysis describes the sociodemographic profile of the population, exposure to family planning information, and pregnancies preferences in Kinshasa and Kongo Central. Chi-square statistics are used to test whether the two populations (women living in Kinshasa versus women living in Kongo Central) are similar or different across the two regions.

The analysis continues with descriptive statistics of the outcomes of interest; non-uses, TFPM and MFPM users in each geographical area. The paper continues analyzing outcome difference between and within each province. To further analyze the population according to the outcome of interest, TFPM, descriptive statistics are reported describing the prevalence across TFPM methods identified in the survey: withdrawal, rhythm and other traditional methods.

The last part of the analysis tabulates socio-economic, exposure to family planning messages and attitude variables by the three outcomes of interest: non-users, TFPM and TFPM users. The analysis presents descriptive statistics within each province and compares prevalence across provinces. Finally, the paper explores whether changes in characteristics of the population are statistically associated with changes in the predicted probabilities to use TFPM. Average marginal effects indicate changes in the predicted probabilities to register a specific outcome associated with changes in the characteristics of women on average across the population. The outcome variation is the difference in the predicted probabilities of the reference category compared to a specific category. Marginal effects are calculated holding all other variable in the model constant. Finally, average marginal effects are calculated using the methods of recycled predicted probabilities.

Independence of Irrelevant Alternative (IIA) assumption is tested to assure the probabilities do not change when any of the choices are dropped. Hausman test results rejected the alternative hypothesis, there is no evidence to reject the IIA assumption.

Results:

Descriptive statistics of the population:

Kongo Central and Kinshasa populations have different sociodemographic profiles, according to chi-square tests reported in table 2. Populations look similar only across wealth status, exposure to family planning campaign using radio and outreach visits.

The average age of women in the study is 28 years in Kinshasa and 29 in Kongo Central. Education attainment is higher in Kinshasa than Kongo Central (Table 2). Cumulatively women with secondary degree and higher than secondary represent 78% of the population in Kinshasa and 53% in Kongo Central.

In Kinshasa the prevalence of women in a relationship is lower than Kongo Central, 44% and 58% respectively. Women who are separated and widowed account for a small minority of the population.

Distribution of wealth status across the two provinces appear to be independent from the geographic location (P-value 0.95).

Women in Kinshasa tend to have on average fewer children than in Kongo Central, almost 60% reported less than two children while in Kongo Central 54% reported two or more children.

Recall of family planning messages is higher in Kinshasa compared to Kongo Central, with a statistically significant difference observed only for exposure through television and outreach visits. Exposure to family planning messages through radio is not significant across province, 35% in Kinshasa and 27% in Kongo Central. Exposure to messages in outreach visits is not significant either, this is 6 % in Kinshasa and 7% in Kongo Central.

Exposure to family planning messages through television is more frequent in Kinshasa, 67%, compared to Kongo Central 17%, (P-value 0.000); access to television differs considerably across the two regions 81% in Kinshasa and 23% in Kongo (PMA2020, n.d.). Women in Kinshasa were exposed to family planning at health facility more frequently, 13%, compared to women in Kongo Central 5.83%, (p-value 0.0018).

Women expressed different pregnancies preferences across province. In Kinshasa women expressed higher pregnancies preferences, 72% compared to Kongo Central 46%. Results suggest socio economic factors depend on the geographic location: women in Kinshasa on average reported to be younger, to have higher level of education and less number of children compared to women in Kongo Central. Exposure to family planning messages is similar across provinces for radio and outreach visits but differs for exposure to FP messages though television and visits at health facilities. When discussing preferences, women in Kinshasa more frequently plan to have a child in the future compared to women in Kongo Central, also they are more certain about future choices.

Descriptive statistic of the population by methods in Kinshasa and Kongo Central:

This section describes the population by FP category: non-users, TFPM and MFPM. Between provinces, comparisons are reported to describe differences in behaviors. In Kinshasa, women who use TFPM and MFPM share similar characteristics: they are more frequently in a relationship, tend to have higher education and high level of exposure to messages. In Kongo Central, women who use TFPM share fewer similarities with MFPM. Women who use TFPM are more frequently found in wealthier quintiles, have higher education but are less exposed to family planning messages than MFPM. Women who use TFMP in Kinshasa expressed preferences toward future pregnancies 71% of times while in Kongo Central 51%.

Women who use TFPM in Kinshasa are slightly more concentrated in the above 25 age group, 64%. This is similar to MFPM while non-users are usually younger. Women who use TFPM register higher education levels than MFPM and non-users.

Women in relationships seem to be the most frequent users of TFPM, 58%, compared to women who are not in a relationship. Variation across wealth status appears to be small between TFMP 39% and MFPM 38% while non-users are little more concentrated in the highest quintile 47%. Women with more than two children appear to use TFPM more frequently compared to women with no child or one child, this looks similar to MFPM users, while non-users more frequently have no children.

In Kinshasa exposure to radio is higher among women who use TFPM, 41%, than MFPM and non-users. Television exposure has the highest outreach in this region; 67% of TFPM users are exposed through television compared to 71% of MFPM and non-users register the lowest exposure (29%). Women who use TFPM have the second highest exposure to FP messages at a facility 17% and in outreach visit 9%, MFPM users register the highest exposure at those two locations: 20% and 9%, respectively.

Seventy one percent of women who use TFPM wish to become pregnant in the future and 20% do not. This preference is similar to the one registered MFPM users but differs from non-users who expressed higher preferences for future pregnancies and lower oppositions against it.

In Kongo Central, women who use TFPM and non-users of FP methods have similar characteristics to the province population in terms of age, MFPM users tend to be highly concentrated in the 26-35 age group. Fifty nine percent of TFPM users similarly to MFPM users have more frequently a secondary education degree

compared to non-users. Women who use TFPM and MFPM tend to be in a relationship more frequently, 66% in both categories, compared to non-users 55%. Fifty-seven percent of women who use TFPM are in the higher wealth quintile. This is similar for MFPM while non-users are more frequently in lower quintiles. TFPM users tend to have on average more children similarly to MFPM users while non-users have less children.

Exposure to family planning messages is similar between radio, 23%, and television 20%, while health facilities and outreach visits are less frequent 7% and 5% respectively. Women using TFPM share similar profile to non-users in terms of radio and outreach exposure but have higher exposure trough television and health center visits. Women using MFPM have the highest exposure in the province.

Only 51% of TFPM users expressed preferences toward future pregnancies while 30% expressed opposition to it.

Women who use TFPM and MFPM share similar demographic characteristics in both provinces. Both groups tend to be more educated, have more children, and are more frequently in a relationship compared to non-users. From the economic perspective, in Kinshasa both groups tend to be more concentrated in the middle lower quintile, while in Kongo Central are more concentrated in the highest quintile.

In terms of exposure to family planning messages, women using TFPM or MFPM are similar in Kinshasa but differ considerably from both MFPM and non-users in Kongo Central. In both provinces radio and television are the channels with the highest reach for family planning messages. In terms of preferences for future pregnancies TFPM users in Kinshasa expressed higher preferences 71% compared to Kongo Central 51%. In Kinshasa TFPM and MFPM users look similar to each other and different from non-users. While in Kongo Central preferences across groups look more similar when compared to Kinshasa.

Descriptive statistics of Family Planning prevalence and Traditional Family planning methods:

The second part of the analysis reports descriptive statistic concerning outcome of interest in the two areas. The main outcome of interest is coded into three mutually exclusive categories: non-users of any family planning methods, users of modern family panning methods and users of traditional family planning methods. The analysis is performed in both provinces and results are compared. Observation of women recorded pregnant during the interview are not included in the sample.

On average, TFPM users represent a minority of the population 19%, while non-users represent the majority of the population 59% (table 3).

In Kinshasa, users of any methods represent a bigger proportion of the population than in Kongo Central, 44% compared to 32%, respectively. TFPM users in Kinshasa have the same proportion of MFPM users 22%, while in Kongo Central TFPM users represent the minority 14%. TFPM is the method with the largest difference across province.

TFPM can be grouped into categories: rhythm, withdrawal and other traditional methods.

In Kinshasa rhythm register the highest prevalence 66%, withdrawal 23%. In Kongo Central withdrawal is the most used method 47% and rhythm is the second most used TFPM, 36%. The distribution across the three traditional methods is skewed in Kinshasa compared to Kongo Central, and methods preference switches across province.

Factors associated with outcome:

The multinomial logit procedure is used to identify whether socioeconomic factors, exposure to family planning methods messages or pregnancies preferences are associated with the outcome, and to measure association in behaviors especially among Traditional Family Planning methods users. Comparisons across provinces are made to understand whether similar pattern are true I both areas.

Socioeconomic variables associated with the outcome:

A*ge*: Kinshasa and in Kongo Central age is not significantly associated with the outcome (Table 5).

Education: in Kinshasa education status is not associated with the use of TFPM or non-users. Women with secondary education, compared to women with lower education, are more likely to use MFPM (+7 % p=0.05).

Relationship status: In Kinshasa, compared to women in a relationship, women who are widowed or divorced are less likely to use TFPM and more likely of being a non-user (-19% compared to +27%, respectively p-values 0.001). In Kongo Central there are no significant associations between the outcome and education status (Table 5).

Wealth Status: Wealth status is not associated with family planning preference in either province.

Number of Children: In Kinshasa, women with five or more children are statistically more likely to use TFPM compared to women with no child (26% p=0.5) and less likely of being a non-user (-37% p=0.000).

In Kongo Central number of children is not associated with the outcome in the category TFPM. Women with one or more children, compared with women with no children, are less likely of being a non-user, results are significant. Women with 1,2,3, or more than five children are statistically more likely to use MFPM compared to come with no children.

Association between family planning and exposure to FP messages:

Exposure to FP messages through radio: across both provinces exposure to FP messages through radio was not associated with any significant marginal effect across the three outcomes.

Exposure to FP messages through TV: in Kinshasa women who were exposed to FP messages through TV, compared to women who were not exposed are less likely to be a non-users (-7.5% p-value=0.05). This is the only significant association across both provinces.

Exposure to FP messages in health facility: In Kinshasa, women who were exposed to FP messages at a health facility, compared to women who were not exposed, are less likely to be a non-user and more likely to use MFPM (-18 % and 11% p-value 0.05). In Kongo Central exposure to FP messages at a health facility is not statistically associated with any variation in the predicted probabilities across the three outcomes.

Exposure to FP messages in outreach visits: women exposed to FP messages in outreach visits, compared to women who were not exposed, did not register any association with the outcome in either provinces.

Fertility preferences:

In Kinshasa, women who expressed preferences for not having future pregnancies, compared to women who expressed preferences for future pregnancies, are more likely to use MFPM (16% p-value 0.5). Infertile women, compared to women who expressed preferences for future pregnancies, are statistically less likely to use TFPM and more likely to be non-users, (-14% p-value 0.05 +21% p-value 0.01). In Kongo Central, differential effects across categories are very small and not significant.

Women with more than five children in Kinshasa are statistically more likely to use TFMP and women who are widow or divorced are statistically less likely to use TFPM and women who are infertile resulted to have lower probabilities to uses TFPM. Women who were exposed to family planning messages through out-reach visit registered the biggest positive increase in predicted probabilities to use TFPM, 22 %, compared to other communication channels but results are not significant. Changes in socioeconomic characteristics and exposure to FP massages are more often associated with MFPM or not using any methods categories compared to the TFPM category.

In Kongo Central, changes in socioeconomic status, exposure to family planning messages and preference are not associated with statistical marginal effects with the TFPM category. Only variation in the number of children changes significantly predicted probabilities associated with MFPM users and non-users.

Discussion:

Across the two provinces there are considerable differences in traditional family planning methods prevalence. Women in Kinshasa have higher prevalence of TFPM and MFPM, considerable difference is also registered within TFPM. Socioeconomic indicators suggest higher level of development in Kinshasa.

From a project management perspective, especially for targeting of beneficiaries, the only significant association with TFPM methods users is registered among women who are separated reporting lower probabilities to use TFPM and women with five or more children who are statistically more likely to be TFPM users. But when looking at MFPM users, women with secondary education degree, and women with 1,2 and 5 children are statistically more likely to use MFPM. Most of the variation is concentrated in Kinshasa.

Regarding health communication channels, radio and tv register the highest level of outreach. Especially in Kinshasa, diffusion through television would be the likeliest methods through which women are exposed to family planning methods. Women exposed to FP messages through health workers outreach visits demonstrated the highest association to increase traditional family planning methods and a small reduction in the probabilities to use MFPM, in both cases the effect is not significant. The human rights approach should be considered in family planning projects as suggested by the Respond projects. In this case a human right approach would entail providing information about traditional and modern family planning methods.

Information about modern family planning methods would communicate the higher efficacy in family planning. On the other side we need to be aware that women might prefer traditional methods for several reasons, in this case communication would be aimed at increasing the efficacy of the selected method.

Limitations:

As reported by Rossier,the use of TFPM is usually underreported. If this is true for our data, the case estimates would be biased downward(Rossier et al., 2014). In multinomial logit model estimates and marginal effects can be biased when endogenous variable is in the model. For future research to account for endogeneity and explore causality other econometrics techniques such as instrumental variables should be considered.

Leadership and Family Planning:

Leadership is a key component to achieve the Sustainable Development Goal set by the United Nations or the one set during the Family Planning Summit in London in fragile countries such as the D.R.C.

The current environment of family planning offers several challenges across a variety of aspects: political, administrative, financial, information, cultural and so on. Family planning remains a very sensitive topic not only at the local and national level but also at the international level, funding to UN agencies focusing on policies such as UNFPA registered a considerable decrease in their budget, especially after 2016. On the other side new players from the private sector are stepping up and increasingly playing a major role. At the national level, the country is experiencing a positive trend generated by increasing political commitment, development of policies and other strategic documents and finally implementation of programs and projects.

In the specific case of a research project the main goal is to collect, process and to communicate information. Managing a research project also means to look at innovation in terms of content, methods and new type of studies. The global aspect and distance add an extra level of complexity in terms of human resource and operations. Lastly there is the academic aspect and the high caliber of colleagues a leader has the pleasure to work with every day. Innovation and motivation in such a highly specialized environment are quite unique aspects too.

Leaders working in such a peculiar environment would highly benefit from a good understanding of themselves, their preferences on relational aspects. Considering the great variety of cultural, social and personal reaches leaders are exposed to, high level of personal awareness can help to prepare and act across all these different occasions. Knowledge of these aspects along with emotional intelligence can facilitate to communicate and understand people's needs especially when at distance.

From an organizational perspective a transformational leadership approach might be suited for project managers. As I had the chance to experience the level of technical knowledge and specializations within the team, and this is peculiar of each team member. Also, teams balance their work between specific "standardized" deliverables for the client and work to push the limits of innovation. This kind of change is actively sought and generated combing internal and external knowledge and performs at its best when each team members are motivated. In this sense empowerment and delegation are two powerful techniques allowing the project to remain competitive and capable to satisfy both the client and team member's needs. This to happens requires a balance between several tools: consultation, autocratic decisions, joint decisions and delegation. A good leader is capable to understand when each of those four methods is needed and more suited balancing goals with the human aspects.

Conclusions:

In D.R.C. the unmet needs for FP are still high. The prevalence of TFPM users is higher in Kinshasa compared to Kongo central, and this might be associated with the higher level of development in the capital combined with high level of unmet needs. In Kongo Central lower access to education, higher level of poverty might prevent access to rhythm, and this would be confirmed by the higher prevalence of withdrawal users. It appears that non-user is a different population from FP users either MFPM and TFPM users. Non-users have considerable less exposure to FP messages in outreach visits and health facility compared to users. Non-users' exposure to FP messages through radio and television is lower compared to FP users but the difference is smaller compared to the one registered for facility and outreach visit. Not having children might reduce exposure of non-users to FP messages through these two channels. If this is the case then television campaigns could be a better tool to reach non-users and considered the negative association it might also be effective to help change their behaviors. These findings can be used to target women for future PF projects

in Kinshasa and Kongo Central, and further studies could focus on causality between exposure to FP messages through television and FP behaviors.

Table 1, Description of contraceptive methods according WHO classification (WHO, 2015)*:*

Method	Effectiveness to prevent pregnancy	Type of method
Combined oral contraceptives (COCs) or “the pill”	99% with correct and consistent use - 92% as commonly uses	Modern
Progestogen-only pills (POPs) or "the minipill"	99% with correct and consistent use - 90–97% as commonly used	Modern
Implants	>99%	Modern
Progestogen only injectables	>99% with correct and consistent use- 97% as commonly used	Modern
Monthly injectables or combined injectable contraceptives (CIC)	>99% with correct and consistent use - 97% as commonly used	Modern
Combined contraceptive patch and combined contraceptive vaginal ring (CVR)	The patch and the CVR are new and research on effectiveness is limited.	Modern
Intrauterine device (IUD): copper containing	>99%	Modern
Intrauterine device (IUD) levonorgestrel	>99%	Modern
Male Condom	98% with correct and consistent use - 85% as commonly used	Modern
Female condoms	90% with correct and consistent use - 79% as commonly use	Modern
Male sterilization (vasectomy)	>99% after 3 months semen evaluation - 97–98% with no semen evaluation	Modern
Female sterilization (tubal ligation)	>99%	Modern
Lactational amenorrhea method (LAM)	99% with correct and consistent use 98% as commonly used	Modern
Emergency contraception pills (ulipristal acetate 30 mg or levonorgestrel 1.5 mg)	If all 100 women used progestin-only emergency contraception, one would likely become pregnant.	Modern
Standard Days Method or SDM	95% with consistent and correct use.	Modern
Basal Body Temperature (BBT) Method	99% effective with correct and consistent use. - 75% with typical use of FABM (Trussell, 2009)	Modern
TwoDay Method	96% with correct and consistent use. (Arevalo, 2004)	Modern
Sympto-thermal Method	98% with correct and consistent use. - Reported 98% with typical use (Manhart et al, 2013)	Modern
Calendar method or rhythm method	91% with correct and consistent use. - 75% with common use	Traditional
Withdrawal (coitus interruptus)	96% with correct and consistent use 73% as commonly used (Trussell, 2009)	Traditional

Table 2, Descriptive statistics of Socio-demographic characteristics, exposure to FP messages and pregnancies preferences among women in Kinshasa and Kongo Central in 2016.

	Kinshasa (Weighted n=2773)					Kongo Central (Weighted n=1226)					
	N	Non-Users	MFPM	TFPM	Total	N	Non-Users	MFPM	TFPM	Total	P-value
Age											
<25	1303	54.4	39.6	35.5	46.9	501	42.8	34.4	39.6	40.8	0.0005
26-35	346	22.4	37.4	35.7	28.7	344	24.2	40.0	30.9	28.0	
36-50	675	23.1	22.8	28.7	24.3	381	32.9	25.4	29.4	31.0	
Education											
Secondary<	564	21.8	20.3	16.6	20.3	575	51.8	34.9	38.4	46.8	0.0000
Secondary	1775	63.8	64.1	64.4	64.0	634	47.7	61.0	58.5	51.7	
>Secondary	434	14.3	15.5	18.9	15.6	18	0.4	04.0	02.9	01.4	
Relationship Status											
In Relation	1237	35.9	53.2	57.7	44.6	716	54.7	66.1	65.8	58.4	0.0000
Separate/ Or Widow	116	05.1	03.5	02.3	04.1	88	07.9	06.4	04.0	07.1	
Never in Relation	1420	58.8	43.2	39.9	51.	422	37.2	27.3	30.0	34.4	
Wealth Status											
Low	1002	34.6	39.7	36.3	36.1	438	41.4	24.2	23.0	35.7	0.9594
Med	578	18.8	22.1	24.4	20.8	246	20.6	18.1	19.7	20.0	
High	1193	46.4	38.1	39.1	43.0	541	37.8	57.5	57.2	44.1	
N. children alive											
0	1167	52.5	28.3	29.6	42.1	371	35.7	16.0	22.4	30.2	0.0000
1	473	16.1	19.2	17.2	17.0	203	15.1	20.1	18.8	16.5	
2	358	10.4	15.9	16.1	12.9	183	14.3	18.7	12.6	14.9	
3	241	07.4	08.6	11.8	08.6	153	10.9	15.9	14.9	12.4	
4	214	05.2	12.8	09.0	07.7	122	09.7	07.7	13.6	09.9	
5	160	03.9	08.6	07.4	05.7	105	07.1	11.9	10.5	08.5	
Child>5	160	04.3	06.5	08.6	05.7	90	06.8	09.4	07.0	07.3	
Heard on Radio											
no	1813	69.1	62.4	58.8	65.3	910	77.8	58.5	77.2	74.2	0.1017
yes	960	30.8	37.5	41.1	34.6	316	22.1	41.4	22.7	25.7	
Heard on TV											
no	1030	42.3	28.6	32.6	37.1	1015	86.0	73.4	79.4	82.8	0.0000
yes	1743	57.6	71.3	67.3	62.8	211	13.9	26.5	20.5	17.1	
Informed In facility											
no	2415	91.3	80.3	83.	87.0	1155	96.9	85.0	92.8	94.1	0.0018
yes	358	08.6	19.6	17.	12.9	71	03.0	14.9	07.1	05.8	
Outreach visit											
no	2604	96.0	91.0	91.4	93.9	1145	94.6	88.2	94.3	93.4	0.8524
yes	169	03.9	08.9	08.5	06.0	81	05.3	11.7	05.6	06.5	
Want more Children											
Yes	2006	74.4	68.6	70.7	72.3	568	44.9	47.7	51.3	46.3	0.0000
No	462	11.9	25.3	19.9	16.6	371	31.2	27.3	29.6	30.3	
Infertile	103	04.3	02.1	03.7	03.7	137	12.6	10.2	04.9	11.1	
Undecided	202	09.3	03.8	05.4	07.2	150	11.1	14.6	14.0	12.2	

MFPM: modern family planning methods, TFPM: traditional family planning methods.

Table 3, Prevalence of women according to the outcome of interest: Non-Users, TFPM and TFPM users in Kinshasa and Kongo Central 2016.

	Total		**Kinshasa**		**Kongo Central**	
	Count	Percent	Count	Percent	Count	Percent
N weighted	(n=3999)		(n=2773)		(n=1226)	
Unweighted	(n=4008)		(n=2458)		(n=1550)	
Non User	2374	59.36%	1544	55.67%	930	67.07%
MFPM	836	20.92%	611	22.03%	225	18.04%
TFPM	789	19.72%	618	22.30%	170	13.91%

MFPM: modern family planning methods, TFPM: traditional family planning methods.

Table 4, Prevalence of TFPM in Kinshasa and Kongo Central 2016.

	Full sample		**Kinshasa**		**Kongo Central**	
Weighted	(n=789)		(n=618)		(n=170)	
	Count	Percent	Count	Percent	Count	Percent
Rhythm	471	59.71	410	66.37	61	35.54
Withdrawal	219	27.76	140	22.59	79	46.51
Other Traditional	99	12.53	68	11.04	31	17.95

Table 5, Association between the outcome and socio-demographic characteristics, exposure to FP messages and pregnancies preferences among women in Kinshasa and Kongo Central in 2016.

	Kinshasa (n=2458)			Kongo Central(n=1535)		
	Non-users	**MFPM**	**TFPM**	**Non-users**	**MFPM**	**TFPM**
Age						
<25 (reference)	--	--	--	--	--	--
26-35	-0.0523	0.0471	0.00519	0.0391	0.0409	-0.0800
	[0.0672]	[0.0510]	[0.0585]	[0.0724]	[0.0562]	[0.0639]
36-50	0.0355	-0.0449	0.00939	0.129	-0.0502	-0.0790
	[0.0717]	[0.0536]	[0.0573]	[0.0796]	[0.0682]	[0.0843]
Education						
Below Secondary	--	--	--	--	--	--
(reference)	-0.0535	0.0715*	-0.0180	-0.0572	0.00680	0.0504
Secondary	[0.0427]	[0.0312]	[0.0415]	[0.0515]	[0.0422]	[0.0401]
	-0.109	0.0122	0.0964	-0.106	0.0801	0.0261
Above Secondary	[0.0653]	[0.0563]	[0.0633]	[0.125]	[0.127]	[0.0956]
Relationship						
In relationship	--	--	--	--	--	--
(reference)	0.277***	-0.0921	-0.185***	0.119	-0.0512	-0.0679
Separated - Widow	[0.0682]	[0.0525]	[0.0556]	[0.102]	[0.0714]	[0.0536]
	-0.0181	0.0317	-0.0136	-0.0942	0.109	-0.0145
Never Married	[0.0685]	[0.0464]	[0.0458]	[0.0788]	[0.0732]	[0.0583]
Wealth Status						
Low (reference)	--	--	--	--	--	--
Med	-0.0312	-0.0175	0.0488	-0.103	0.0613	0.0415
	[0.0590]	[0.0476]	[0.0608]	[0.0785]	[0.0573]	[0.0422]
High	0.0473	-0.0455	-0.00184	-0.118	0.0497	0.0684
	[0.0433]	[0.0362]	[0.0445]	[0.0714]	[0.0618]	[0.0379]

	Kinshasa (n=2458)			Kongo Central(n=1535)		
	Non-users	**MFPM**	**TFPM**	**Non-users**	**MFPM**	**TFPM**
N. Children						
0 (reference)	--	--	--	--	--	--
1	-0.167**	0.114*	0.0530	-0.295***	0.235***	0.0602
	[0.0570]	[0.0450]	[0.0452]	[0.0774]	[0.0644]	[0.0442]
2	-0.288***	0.180*	0.108	-0.363***	0.262***	0.101
	[0.0673]	[0.0703]	[0.0668]	[0.0846]	[0.0681]	[0.0526]
3	-0.252*	0.127	0.125	-0.360***	0.261***	0.0996
	[0.103]	[0.0903]	[0.0858]	[0.0811]	[0.0683]	[0.0893]
4	-0.252*	0.116	0.136	-0.301**	0.155	0.147
	[0.100]	[0.0736]	[0.0941]	[0.108]	[0.0799]	[0.100]
5	-0.239*	0.245*	-0.00557	-0.287**	0.123	0.164
	[0.117]	[0.124]	[0.0857]	[0.0988]	[0.0635]	[0.105]
Child>5	-0.369**	0.103	0.266*	-0.403**	0.210*	0.192
	[0.114]	[0.0899]	[0.131]	[0.123]	[0.0959]	[0.112]
Heard radio						
NO(reference)	--	--	--	--	--	--
YES	0.00626	-0.0370	0.0308	-0.0685	0.0830	-0.0146
	[0.0463]	[0.0284]	[0.0400]	[0.0614]	[0.0509]	[0.0407]
Heard TV						
NO(reference)	--	--	--	--	--	--
YES	-0.0753*	0.0369	0.0384	-0.0951	0.0690	0.0260
	[0.0355]	[0.0374]	[0.0360]	[0.0845]	[0.0720]	[0.0524]
Heard at facility						
NO(reference)	--	--	--	--	--	--
YES	-0.179*	0.110*	0.0685	-0.0245	0.0988	-0.0743
	[0.0697]	[0.0488]	[0.0571]	[0.0901]	[0.0706]	[0.0650]
Visited health worker						
NO(reference)	--	--	--	--	--	--
YES	-0.162	-0.0556	0.217	-0.127	0.132	-0.00436
	[0.0995]	[0.0702]	[0.117]	[0.0727]	[0.0739]	[0.0559]

	Kinshasa (n=2458)			Kongo Central(n=1535)		
	Non-users	**MFPM**	**TFPM**	**Non-users**	**MFPM**	**TFPM**
Want more children						
Yes(reference)	--	--	--	--	--	--
No	-0.105	0.160*	-0.0553	0.0145	-0.0166	0.00210
	[0.0717]	[0.0763]	[0.0532]	[0.0653]	[0.0502]	[0.0542]
Infertile	0.211**	-0.0718	-0.139*	0.0197	0.0459	-0.0656
	[0.0733]	[0.0551]	[0.0579]	[0.108]	[0.0937]	[0.0609]
Undecided	0.0380	-0.0506	0.0126	0.0655	-0.0335	-0.0321
	[0.0815]	[0.0483]	[0.0675]	[0.0623]	[0.0576]	[0.0495]

MFPM: modern family planning methods, TFPM: traditional family planning methods.
Standard errors in brackets; * p<0.05, ** p<0.01, *** p<0.001

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