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Cost effectiveness of NGO-sourced Health Franchising

Case of PSI Myanmar

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Management of Technology Master Thesis

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Cost effectiveness of NGO-sourced Health Franchising

Case of PSI Myanmar

By

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Abstract

Healthcare services in the developing countries are suffering from lack of equipment, expertise and infrastructure. Sexual reproductive health is one of these health areas in which the public health sector is not meeting the growing demand and it is defined as unmet need for family planning. To address this need, international agencies have been operating in the developing world with the aim of making sexual reproductive health services accessible to everyone while assuring good quality. Health franchising is a healthcare service delivery model that is operated by international NGOs and private sector in these regions. As a type of social franchising, health franchising uses commercial franchising mechanisms in order to generate social welfare. The business model of health franchising is based on creating a network of franchisees, utilizing the existing private clinics while providing them with subsidized commodities, training, monitoring, promotion of the network and incentives. In return, the franchisees are promising to stay loyal to the franchisor's standards and periodically report their performance. Although health-franchising programs have been active and constantly expanding their operations, there are limited studies on the business model and its cost effectiveness. This study aims to explore health franchising, the business model, performance and cost effectiveness in comparison to other healthcare service delivery models in the developing world. For this purpose, a cost effectiveness analysis is conducted on the operations of a health franchising program to calculate the input/output ratio in terms of cost per health impact generated. The value adding mechanisms and impact of health franchising are further discussed through interviews. Findings are interpreted into a set of practical recommendations and an experiment blueprint for a standardized evaluation of health franchising programs. Findings from the case of PSI Myanmar suggest that the cost effectiveness ratio of health franchising is within the limits of similar health service delivery models in the developing world. Apart from its cost-effectiveness, there are other factors such as quality, perception of comfort from the patients and the robust supply chain that make this business model successful in the context it operates.

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Executive Summary

Sexual reproductive health is an essential right for all the people. Every human being, without exceptions, should have access to family planning and sexual reproductive health services. However, in the developing world, public health sector is lacking the infrastructure, resources and technical expertise to deliver these services effectively to its citizens. Stock-out of family planning commodities is a significant challenge of the public health sector. While the unmet need for family planning is growing and pregnancy complications increase, there is a need for sexual reproductive health services that ensures sufficient quality and accessibility to the people in need. Health franchising is a healthcare service delivery innovation that provides an answer to this need in the developing countries. The difference from the traditional franchising model is that health franchising is executed by NGOs with support from international and local donors and seeks social goals rather than monetary goals. The business model of health franchising is based on creating a network of franchisees, utilizing the existing private clinics while providing them with subsidized commodities, training, monitoring, promotion of the network and incentives. Although, health franchising first started delivering services in sexual reproductive health and family planning, over the years, the services extended to other health fields such as malaria, HIV, tuberculosis, diarrhea among others, depending on the most needed services in the countries of operation. The goals of the network are stated as providing quality, accessible, affordable and equitable health services for the care-seekers.

Although, franchising networks have been around for more than ten years, whether they are achieving their goals in the countries they are operating is not yet widely explored. There are discussions about its impact and cost effectiveness both in the academic world and among other organizations that are performing healthcare innovations in the developing countries. The research done by the NGOs operating in the regions and the metrics used may be biased. Furthermore, there is a lack of comparative studies on the performance and cost effectiveness of these programs, causing an unclear view on their state of effectiveness with regards to other healthcare services in the developing world. The research on cost effectiveness and impact is valuable for the donors, policy makers and program executers for investment decisions and resource allocation. Therefore, the main objective of this study is to explore the extent of cost effectiveness of health franchising in sexual reproductive health by performing a cost effectiveness analysis on the selected case of Sun Quality franchise network operated by PSI Myanmar. The data on the costs and services and the health policy environment are mainly derived from the context of Myanmar.

The main findings of this thesis study suggest that, health franchising in sexual reproductive health is in the cost effectiveness limits, compared to the recognized cost effectiveness thresholds of programs that have similar structure. The extent of cost-effectiveness depends on the context that the health franchising is operated in, depending on the policy environment, the demand for services and the differences in the costs incurred. However, the following factors are found to be important for the increase in the cost effectiveness of health franchises in sexual reproductive health: (1) a sustainable growth of services provided, (2) strategic incentive scheme for providers, (3) share of indirect costs

among contraception methods and (4) proper quality monitoring for preventing the spending on non-value adding activities.

Based on the findings of the study, the following recommendations are formulated. A standard cost allocation method is suggested for indirect cost allocation of health franchising programs in order to allow viable comparison among various programs. The costs can be allocated in proportion with the health impact, measured by the same metric. Changing the metric for measuring the health outcome of such interventions is another suggestion for the methodology. The metric should capture the real impact and must be easy to measure, as an alternative to commonly used CYP. The metric is suggested as the increase in the newborn babies per fertile woman in the region. Furthermore, there are recommendations on the measurement of other performance indicators for a health franchising program; namely accessibility and quality. This research proposes a list of key performance indicators that would enable efficient monitoring of these criteria without bias. The exit interviews with the patients should be used to track the profile of the patients and should not be used to determine the service satisfaction. The aforementioned recommendations regarding the methodology are placed collectively in an experiment blueprint that provides further details.

For the business model, it is concluded that the franchisors should decide on the composition of family planning commodities they provide depending on the customer segments. The needs of the patients coming from special groups such as young people that are sexually active, people living with HIV and sex workers should be incorporated, as well as the economic aspect, to the product portfolio. Another important point is the necessity of emphasis on the long-term contraception methods, as in the longer term, they are found to be more effective regarding their cost and impact. Incentive schemes on the services that have low demand in particular regions have proved to be a successful mechanism. Strategic numeration mechanisms should be one of the core elements of the business model and should be used to boost the low performing areas. Quality should be assured with continuous monitoring and reporting, making sure that there are no expired products within the program and necessary conditions are assured for clinical services. The interviews that are conducted to identigy the quality of services should also target the non-users and vulnerable groups, to prevent biased feedback. Additionally, more collaboration with the public health sector should be established in order to ensure financial and operational sustainability of these programs.

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List of Acronyms

CBA	Cost Benefit Analysis
CEA	Cost Effectiveness Analysis
CER	Cost Effectiveness Ratio
CHW	Community Health Worker
CSO	Civil Society Organization
CYP	Couple Years Protected
DALY	Disability Adjusted Life Years
FBO	Faith Based Organization
FP2020	Family Planning 2020
GNI	Gross National Income
IUD	Intra-Uterine Device
MoH	Ministry of Health
NGO	Non-governmental Organization
PSI	Population Services International
QALY	Quality Adjusted Life Years
SPH	Sun Primary Health
SRH	Sexual Reproductive Health
SQH	Sun Quality Health
SQN	Sun Quality Network
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development
WHO	World Health Organization
WTP	Willingness to Pay

1. Introduction

In this chapter, main concepts of the research will be introduced. First, a background to the topic of health franchising will be provided. Then, the problem statement will be introduced. The chapter continues with the formulation of the research objective and the research questions. Following these, practical and scientific contribution of the research is identified. The chapter is finalized with the presentation of the research design and structure of the thesis.

1.1. Background

Sexual reproductive health (SRH) is a central right for every human being and essential for his or her well being. These rights include among others, having a healthy sexual life, having the desired number of children at a desired time, having safe delivery of newborns and ensuring survival for both the mother and the newborn (S. Singh, Darroch, & Ashford, 2014). These rights are considered as basic rights for women at reproductive age in the developed world. However, in the developing world, there are still major struggles in providing standardized sexual reproductive health services to women who are in need. According to the latest report from United Nations Population Fund (UNFPA), in these regions, an estimated number of 225 million women who want to prevent unwanted pregnancy do not have access to contraceptive services (S. Singh et al., 2014). In the same report it is stated that if all of these women who want to avoid unwanted pregnancies had access to modern contraceptive services and their newborns received the care in WHO recommended standards, the impact would be striking: unintended pregnancies would decrease by 70%, maternal deaths would decrease by 67% and the newborn deaths would decrease by 77%. In addition to the dramatic health impact, access to sexual reproductive health services is also expected to create positive economic impact in these regions. Helping women to choose the time and number of pregnancies would make the healthcare affordable for the general public (S. Singh et al., 2014). The greatest burden of ill-health of women and infants is happening in these countries where the health system is weak and inadequate.

In order to tackle the problem of the unmet need for family planning in these regions, there are various types of interventions from international and local channels operated by private and public funding. To this date, it is known that private sector has had a significant role in providing sexual reproductive health and family planning services in these regions. According to the latest Demographic Health Survey which is conducted every five years by United States Agency for International Development (USAID), the private sector provides 51% of healthcare in Sub-Saharan Africa, 66% in South East Asia and 79% in South Asia (Bishai, 2010). In spite of this, the support and the recognition towards the potential of private health sector remain limited. Four types of private health channels can be identified, namely:

- Formal for-profit sector including the physicians, nurses, midwives, trained pharmacists.
- Informal for-profit sector including the Traditional Birth Attendants (TBA), traditional healers, general shops, drug sellers and dispensers.

- Formal not-for-profit sector including Non-Governmental Organizations (NGOs), Faith-Based Organizations (FBOs), Civil Society Organizations (CSOs) and educational institutions.
- Informal not-for-profit sector including the volunteer Community Health Workers (CHWs) (Bishai, 2010).

Social franchising for healthcare, hereafter referred as *health franchising,* falls into the category of formal not-for-profit health services. The concept of health franchising in sexual reproductive health has its roots in social marketing, which aims to improve the availability and accessibility of contraceptive supplies while promoting cost-recovery of the products from the retailers and decreasing the out-of-pocket expenses of clients (Stephenson et al., 2004). Health franchising extends the idea of social marketing programs and shifts it from products to services. In other words, health franchising presents an innovation in the healthcare service delivery model in developing countries. It is defined as the approach of creating a network of health providers that are equipped with the necessary medical supplies and knowledge with an assurance of minimum standard of quality (Global Health Group, 2016).

Health franchising can have various forms with the following underlying characteristics: A franchisor creates the brand for delivering clinical health services and procuring health commodities in subsidized costs. The health providers operate as a network under this system that agree to sell the health commodities and receive trainings to provide clinical health services. Many of the providers agree to pay membership fees and can charge fees for their services (Global Health Group, 2016). It should be noted that health franchising does not seek the goal of making profit out of healthcare service delivery. As it is a type of social franchising, health franchising primarily seeks social goals and an improvement of well-being in the developing regions. The programs are funded by international and local donors. The perceived added value of health franchising consists of the following: increase in quality of health services due to updated modern medical knowledge of the providers with consistent training and monitoring, fostering the freedom of choice for the patients by offering more options of contraception with guidance, lower prices of services due to subsidies provided to franchisees and increased accessibility of services by extension of clinical outreach.

1.2. Problem Statement

There exists evidence about the positive health impact of such health franchising projects on the sexual reproductive health in developing countries, however the evidence on cost-effectiveness and economic impact is still scarce. Research shows that the quality and availability of health commodities have increased for the regions that health franchising is adopted (Shah, Wang, & Bishai, 2011). On the other hand, there are also questions raised against the ability of health franchising to distribute healthcare services in rural areas where it is most needed (Sundari Ravindran & Fonn, 2011). One of the goals of health franchising is making the healthcare services and health commodities affordable for the poor. However, there is mixed data available explaining to what extent health franchising could decrease the out of pocket payments for the poor and not become associated with a wealthier client base (Ravindran, 2010). Most of the research found considering the impact of these interventions, conclude with a future research recommendation of identifying their cost-effectiveness. The WHO

Report on health franchising of SRH services concludes that the entire literature on the cost effectiveness of these interventions is missing and needs to be elaborated more in order to explore the real impact (World Health Organization; Department of Reproductive Health and Research, 2007, p.19). A recent study emphasizes the same fact that is; although the health franchises analyzed in the research have existed for more than 4 years, still the evidence is lacking about the cost-effectiveness of these interventions compared to other forms of interventions (Sundari Ravindran & Fonn, 2011). Therefore, to answer the aforementioned need, this thesis study will be devoted to address the following knowledge gap based on a specific case: identification of the extent of cost effectiveness of health franchising programs in the developing world.

1.3. Research Objective

Having presented the problem statement, the research objective of this thesis study is defined as exploration of the extent of cost-effectiveness of SRH related health franchising programs and identification of the implications of this evaluation for the decision making process of the stakeholders involved. The data to conduct the analysis is retrieved from Sun Quality Health (SQH) franchising network in Myanmar operated by Population Services International (PSI) Myanmar.

In order to achieve the aforementioned research objective, the following complementary goals are determined:

- Identification of the costs and potential health outcomes of a sexual reproductive health-franchising program.
- Identification of a general costing method to perform economic evaluation of health franchising programs in developing countries.
- Exploring the relation between the main inputs of the analysis and the cost effectiveness ratio.
- Comparison of the cost effectiveness ratio of health franchising programs with similar health interventions in sexual reproductive health in the developing world.
- Integrating the results of the analysis with the insights from experts to conclude with an inclusive set of practical recommendations for executives in the field.
- Portrayal of an experiment blueprint for cost effectiveness analysis of health franchising programs.

1.4. Research Questions

Following main research question is formulated in order to reach the aforementioned research objectives:

"To what extent is health franchising applied to sexual reproductive health in developing countries cost effective?"

In order to answer the main research question, the following sub-questions are formulated and addressed throughout this thesis:

1. What is the current state of health franchising in the developing world regarding its framework and perceived impact?

The goal of the first sub question is to present the current state of health franchising in the developing world and understand the current outcomes and challenges related to health franchising programs. An in-depth review of the literature is conducted in order to answer this question. The findings will provide an understanding of the main concepts and highlight the need for a further exploration of the context.

2. Which indicators can be used to estimate the health outcomes of sexual reproductive health interventions?

To answer this question, the health indicators generally used to measure impact for sexual reproductive health interventions will be evaluated. The indicators will serve to formulate the impact of the health franchising programs analyzed, therefore constructing the denominator of the cost effectiveness ratio.

3. What are the costs taken into account for a health-franchising program targeting sexual reproductive health?

The type of costs incurred and the valuation of these costs will be the main inputs for the cost effectiveness analysis.

4. To what extent the outcomes of cost effectiveness analysis will be affected by the change in input variables?

The goal of this question is to identify the relationship between inputs and estimated result of the analysis. Presentation of the most impactful inputs of the analysis, contributes to the main conclusions of the extent of cost-effectiveness and presentation of recommendations.

5. How does the cost effectiveness of health franchising compare to other types of sexual reproductive health interventions in the developing world?

The goal of this question is to define the extent of cost-effectiveness of health franchising programs compared to pre-determined thresholds and draw conclusions.

1.5. Research Contribution

The contribution of this research will be two-fold including scientific and practical contribution. Although there is extensive research about cost-effectiveness analysis for health interventions, there is limited research conducted on the economic evaluation of health franchising interventions. The scientific contribution of this research will be extending the aforementioned literature with the application of cost-effectiveness analysis framework on a field that has not been explored thoroughly. Secondly, this research aims to extend the comparative studies regarding the cost effectiveness of health franchising by comparing the analysis outcomes with other modes of sexual reproductive health

interventions taking place in the developing world. Furthermore, the research presents some adjustments to the cost effectiveness analysis framework that can be used by researchers that are conducting similar analysis of health franchising operations. Finally, the findings of the research leads to guidelines on how to conduct an experiment to measure the quality, accessibility and cost effectiveness of health franchising programs in sexual reproductive health, which can be implemented by researchers aiming to conduct experiments in this field.

From the practical point of view, the research has several contributions. Firstly, by presenting a comparison of cost effectiveness of a currently active health franchising program in sexual reproductive health, the research provides an idea on where health franchising stands in comparison to other types of health service delivery models in sexual reproductive health. Proof of cost effectiveness or the contrary, is significant for funders and policy makers when they are making decisions about whether or not to adopt a project with such an extensive scope. Moreover, one of the main outcomes of the research is a set of recommendations on the business model, which comes from the integration of interview and analysis insights. These recommendations are expected to guide the decisions of health franchising project executers on the operational matters such as incentive mechanisms, composition of services and impact assessment.

1.6. Research Design

The research is conducted in four phases namely: *Phase 1* Exploration of the Literature, *Phase 2* Desk Research and Data Collection, *Phase 3* Analysis and *Phase 4* Interviews and Recommendations. The course of research and the relations between phases are depicted in Figure 1.

As mentioned, the cost-effectiveness of a sexual reproductive health program will be analyzed with the data gathered from a specific case. After a review of the sources, the case is chosen as Sun Quality Network operated by PSI Myanmar. PSI is an international non-profit organization that is operating 33 health franchises in 30 countries located in Asia, Latin America and Africa forming the world's largest health franchising program (PSI Myanmar, 2017) Sun Quality Network currently providing primary health services in 330 townships and has been active in the country since the year 1995 first starting out as a social marketing program. Up to date, the program has recruited 1300 medical practitioners and 2000 village health workers.

There are several motivations for choosing Sun Quality Network case for analysis. Firstly, PSI is the operator of world's largest franchising network and a research oriented organization, which enables the result of this research to be comparable and usable in practice. Secondly, Myanmar is the country in the South-East Asia region with one of the highest need for family planning and sexual reproductive health services. Currently, the country is going through a transition regarding the support and funding from policy makers, which draws attention to the region regarding research and impact studies. This creates opportunities for the researcher to access the necessary data and analyze a case where health-franchising services are valued with an already existing basis for further discussion.

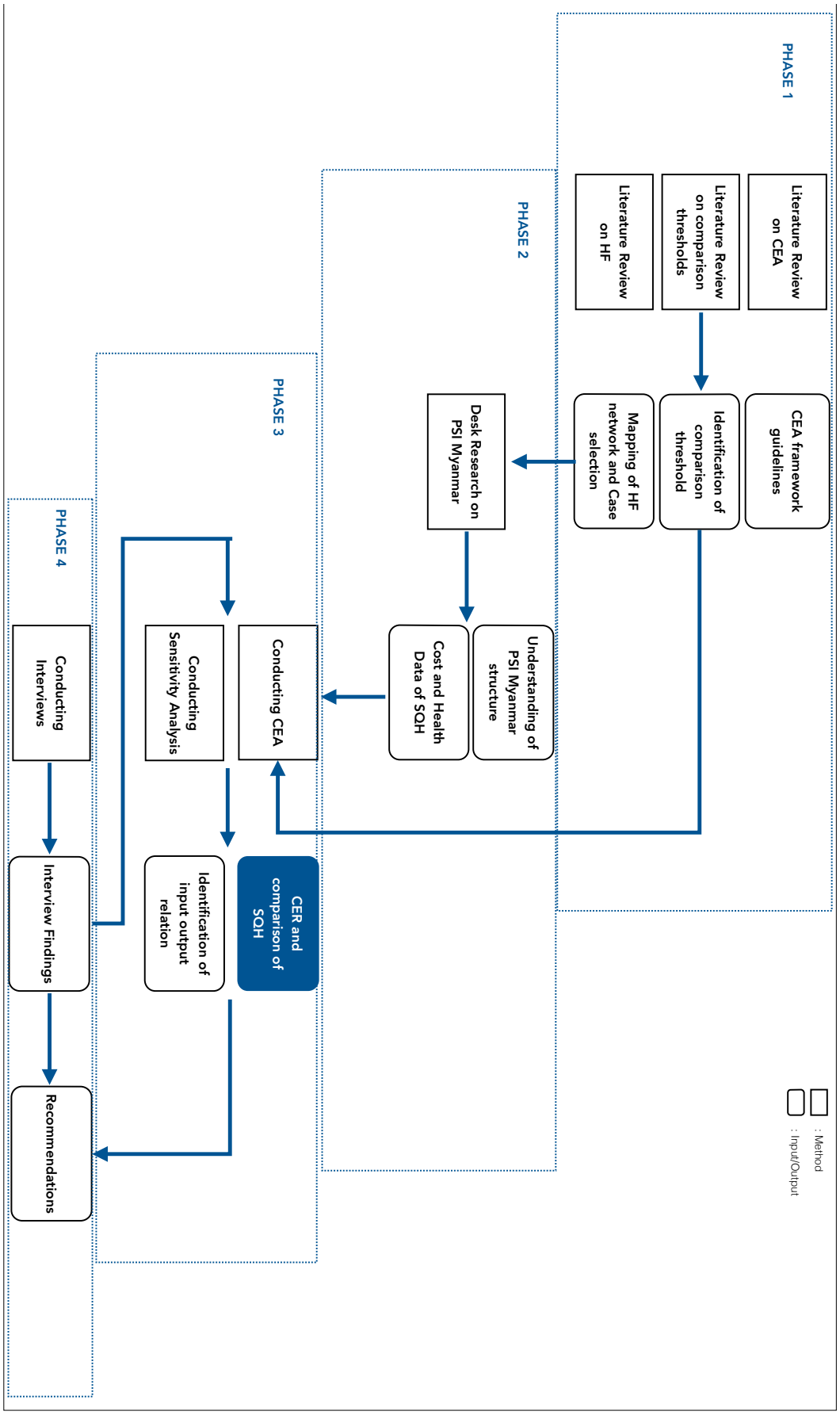

Figure 1 - Research Design

Research phases are explained as follows:

Phase 1: Exploration of the Literature

Phase 1 is dedicated to explore the main concepts of the thesis study, map the current state of health franchising and determine the main inputs of the cost effectiveness analysis. The main method of research in this phase is an in-depth literature review of the following topics: health franchising applications, impact studies on health franchising, costing of sexual reproductive health and family planning interventions, sexual reproductive health in developing countries and economic evaluation of health interventions. As an outcome, cost effectiveness methodology is identified and health franchising context is explored in depth.

Phase 2: Desk Research and Data Collection

In the second phase of the research, the context of PSI Myanmar and Sun Quality Network is explored. The main method that will be used at this phase is the desk research on government documents, databases of international organizations and case study documents of the program. As an outcome, Sun Quality Network structure is identified. The relevant costs and the health impact measures are determined. The adjustments on the costing framework are decided. This phase constructs the preliminary work for the analysis.

Phase 3: Analysis

The third phase presents the cost effectiveness and sensitivity analysis. The cost-effectiveness analysis will be conducted from the perspective of the franchisor based on the stated cost data for PSI Myanmar operations for the year 2009. The relevant costs and health outputs will be identified and the assumptions behind the cost calculations will be presented. The cost effectiveness ratio will be calculated. The next step is the comparison of this outcome according to pre-determined thresholds and cost effectiveness ratios of other comparable interventions. Sensitivity answers the question of how much variation occurs in the results of analysis, cost effectiveness ratios, with the change in input values. There are multiple results of this stage. The first one is the presentation of total health outcome generated annually by the PSI Myanmar program. Second outcome is the comparison of cost effectiveness ratios with other community based distributions performed in the developing world. Third outcome is the effect of the change in input variables on the output variables. All of these outcomes are summarized and the interpretation of the results is presented.

Phase 4: Interviews and Recommendations

The last phase of the research is dedicated to crosschecking the results of the analysis with expert interviews. The interviewees are selected based on their experience in the field of sexual reproductive health interventions in developing countries or health franchising. The main outcome is the presentation of practical recommendations and an experiment blueprint, both presented in Chapter 6.

1.7. Thesis Structure

This thesis study is divided into six chapters as follows:

- Chapter 1: Introduction
- Chapter 2: Literature Review
- Chapter 3: Methodology
- Chapter 4: Cost Effectiveness Analysis
- Chapter 5: Discussion and Evaluation
- Chapter 6: Conclusion and Recommendations.

In Chapter 2, both the concept and context of health franchising will be introduced and cost effectiveness analysis literature on sexual reproductive health interventions will be presented. Based upon the findings gathered here, health franchising in the developing world will be mapped and costs and effectiveness measures of a health franchising program in sexual reproductive health will be identified. In Chapter 3, the methodology of the research is discussed in detail, including the motivation and the roadmap. In Chapter 4, the result of cost effectiveness analysis is presented. In Chapter 5, the findings of the analysis, the literature and the findings from the interviews are linked and interpretation of these findings are presented. Finally, Chapter 6 presents the answers of all research questions, presentation of the recommendations, limitations and opportunities for further research.

2. Literature Review

The main scope of this thesis is defined as exploration of the cost effectiveness of health franchising programs. Following the brief introduction to the topic and objectives of the research, in this chapter, it is focused on providing a deep understanding of both health franchising and the economic evaluation of health interventions. Therefore, the chapter is divided into two main sections respectively: background on health franchising and economic evaluation of sexual reproductive health interventions.

The first section focuses on the emergence of health franchising programs and presents a comparison of commercial franchising and social franchising business models. The framework of health franchising, its structure, the adding value and the stakeholders are presented. In the final part, the literature on the health franchising impact studies is explored and the findings are presented.

In the second section, the theory behind economic evaluation of health programs is introduced; cost-effectiveness analysis as an economic evaluation method is discussed and the examples from the literature on cost effectiveness analysis are presented. Then, the focus is narrowed down to SRH and family planning interventions. The costing methods and health impact measures adopted by previous studies are discussed.

2.1. Background on Health Franchising

This chapter provides a background on health franchising by introducing the general concepts that it derives from, which are: commercial franchising and social franchising. After the definition of the roots, the current state of health franchising will be presented exploring the business model and the previous impact studies.

2.1.1. Commercial Franchising & Social Franchising

Franchising is an agreement between two entities, which are the franchisor and the franchisee. The franchisor is the parent company that has developed a product or a service and the franchisees are the firms that are set up to market the products and services of the parent company in a particular location (Alon, 2014). There is more to franchising than the mere agreement between the entities. There are benefits for both sides of the agreement namely: the franchisor reaps the financial profits that the franchisees make and extends its operations while the franchisee gains the management know-how and the benefits of using the established brand of the franchisor (Alon, 2014).

In the traditional franchising model, the main goal of both entities is to achieve financial benefits. The model has both market-like and firm-like qualities (Norton, 1988). The market-like qualities arise from the presence of trade between the two entities that operate in labor, product and capital markets (Norton, 1988). Typically, the franchisees pay a certain amount to the franchisor in order to gain the right to market the franchisor's product and some part of their sales. The firm-like qualities derive from the vertical bonds between the two entities. The franchisor usually offers training and managerial

assistance to the franchisees with the agreement of the franchisees to operate according to the operational structure of the franchisor. Figure 2 summarizes the mutual benefits among the franchisor and the franchisee for the commercial franchising organizational structure.

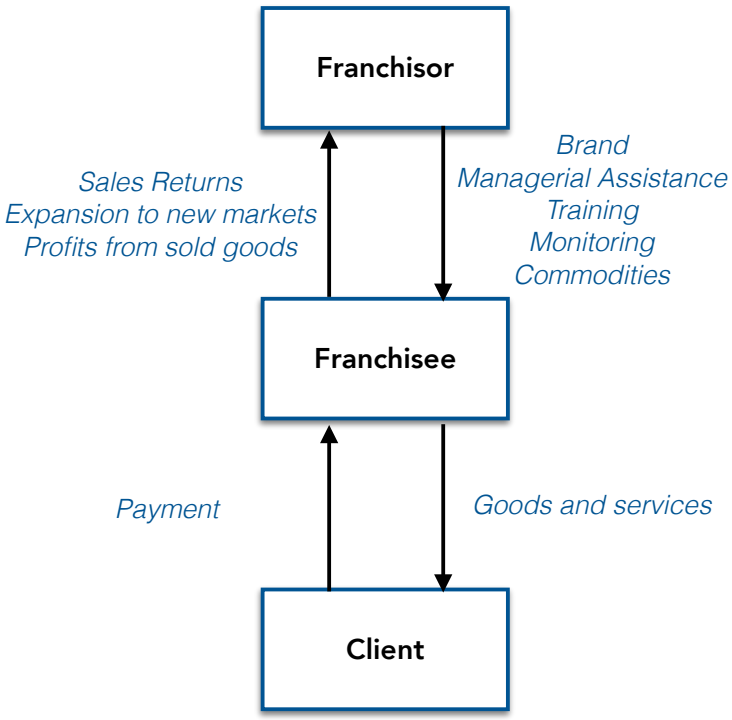

Figure 2 - Commercial Franchising

Social franchising is discussed in the literature as a relatively new form of franchising that entails social goals rather than commercial goals (Alon, 2014). Montagu (2002) defines social franchising as "a franchise system, usually run by a non-governmental organization, which uses the structure of a commercial franchise to achieve social goals" (p.129). Although the commercial franchising structure is used, there are fundamental differences between the social franchising and commercial franchising models. Firstly, in social franchising, in addition to the franchisor and the franchisees, there are also donors as main actors. The finances of the franchisees are supported by external donors in social franchising. As previously mentioned, another difference is that in commercial franchising the main goal is achieving financial profits for the shareholders and the franchisor, whereas in social franchising the main goal is achieving an increase in welfare for the community. During this process, ensuring the sustainability of the franchisees is especially important to enable the continuity of social benefits achieved. Another difference is that, usually the commercial franchises provide food and consumable goods whereas the social franchises mostly provide health services and other social services. While national marketing is used for commercial franchising to promote the brand, in social franchising the marketing is used to create awareness for the brand and the service. The kind of awareness that is created with this kind of social marketing could be considered especially important in order to build the safety and quality perception among the community to achieve the social impact. Finally, with

commercial franchising, the prices of commodities are market-related whereas with social franchising the prices are subsidized (Alon, 2014). The social franchising model is presented in the Figure 3.

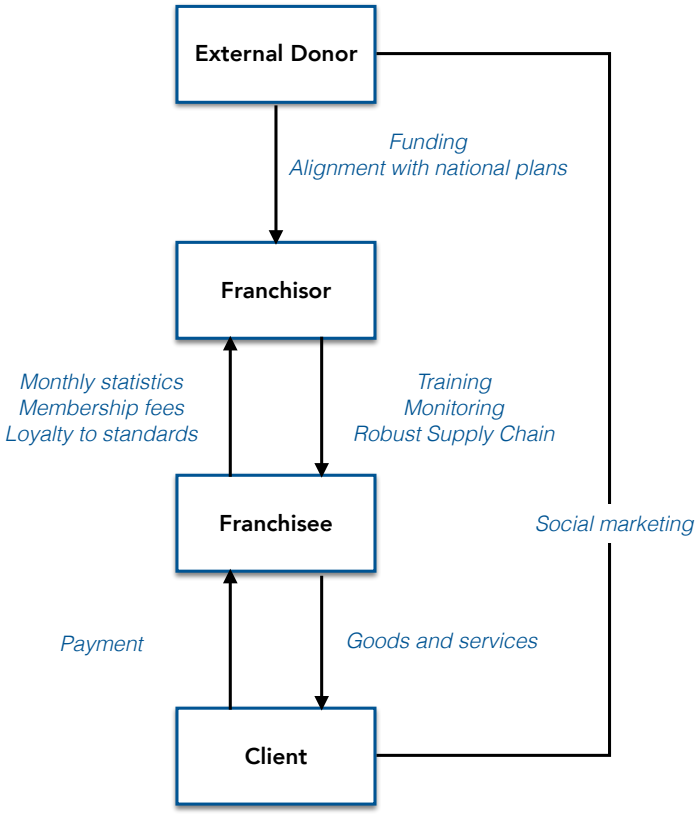

Figure 3 - Social Franchising Model

Social franchising applications are plenty and mainly in the health sector in developing countries. Therefore the concept is also often cited as health franchising. Health franchising is a fast growing method of delivering healthcare to the ones that do not have the sources to access to it. This is mostly due to the fact that the public health providers in developing countries are not as coordinated and regulated as the private health providers (Epstein & Bing, 2011). In order to fill the gap within the health sector in developing countries, health franchises have four primary goals respectively: increasing the number of healthcare service delivery points, providing a cost effective service that offers lower costs than other service delivery options, providing services that offer an increase in the current quality of services provided and serving all population groups emphasizing the ones that are most in needed (Schlein, Drasser, & Montagu, 2010b). Another important goal is to foster the entrepreneurship in the geographies of application by creating a network of entrepreneurs that are operating as social franchises.

2.2.2. Health Franchising Model and Stakeholders

Health franchising originally derives from social marketing programs targeting sexual reproductive health and family planning in developing countries (Stephenson et al., 2004). Social marketing programs are similar to health franchising with the main difference of their focus on providing

products and educational materials. In health franchising, this focus extends to providing clinical health services. Social marketing programs have aimed to increase the awareness of family planning, improve the availability of contraceptive supplies and promote cost-recovery from retailers and fee-paying clients through commercial strategies for the promotion contraceptive methods (Stephenson et al., 2004). Sharing the same ideology of accessibility and affordability, health franchising extends the type of services provided, introduces clinical services and requires the participation of trained providers.

The general framework of social franchising for health, although minor changes can occur among different programs, is the following: the franchisor supplies the franchises with training, performance monitoring, bulk supply of goods and services and in return the franchises provide services to the target population. The payment of the franchises could either be from the patients themselves in return of services provided or it could be based on performance from the franchisor. There are cases where both is done, meaning, there are incentives provided to the franchisees for the services they provide and also the franchisees can keep the profit they earn for selling commodities and performing clinical services (Schlein, Drasser, & Montagu, 2010a). Franchisees in health sector are mostly funded by international donors, non governmental organizations or private sector foundations (Ruster, Yamamoto, & Rogo, 2003). The commodities for the program are either purchased by the international donor or by the procurement staff of the franchisor that conducts the purchasing in a bulk (Bishai et al., 2015).

According to the latest Social Franchising Compendia, India and Kenya are the countries that are home to greatest number of health franchising programs in the world (Global Health Group, 2016). There are health franchises in South America, Africa and Asia, Africa being the region with the highest number of franchises. Among the 70 health franchises that participated in the most recent survey of Social Franchising Compendia (2016) shows that the most offered health service is family planning, followed by sexual reproductive health, tuberculosis-malaria-HIV/AIDS, abortion, pediatrics and others respectively. With the newly added health areas, the clinics are offering integrated primary health services for the target population they are delivering the services for.

The type of franchising could be either stand-alone franchises or fractional franchises. In the stand-alone model, the products that are supplied by the franchises are exclusively from the franchisor, however, in the fractional franchise model, franchise services are added to the pre-existing practices. Therefore, with fractional franchises the already available medical equipment and buildings are utilized and the health provider devotes a part of the working day for the franchising services. The rationale behind fractional franchising is creating additional income for the franchisee and utilizing the existing structure and resources (Montagu, 2002).

There are four primary goals that the health franchises are aiming to achieve in the developing world that is mentioned in the Social Franchising Compendium prepared by the Global Health Group which are the following: accessibility, cost-effectiveness, quality assurance and equity (Montagu & Kinlaw,

2009). A review study conducted by Nijmeijer, Fabbricotti, & Huijsman (2014), explains accessibility with two separate aspects:

-The physical access which means that those who are in need of the related health care service can reach the facility.

-The socio-economic access, which implies that all socio-economic groups can access the services provided.

The cost-effectiveness is explained by:

-Being able to provide services that have equal or lower prices than other competing services

-Cost per service being either competitive or being lower to the target population.

The quality assurance refers to *providing services that are increasing the current level of quality within the whole healthcare sector*. However, quantifying the quality of services is a challenging concept, which will be elaborated further in the next section of this chapter. The final goal of equity is defined as *providing services to all segments of the population, especially the ones that are most in need*. Again the concept of equity is found debatable through the literature, as there is not enough research to conclude on reliable results and what is expected in the starting phase of the programs do not necessarily reflect what happens in practice.

In literature, there is limited information found on the stakeholder network in the context of health franchising. In order to understand the role of the actors in depth and the relation between the stakeholders in the network, the rest of this section will be dedicated to the presentation of the main stakeholders found in the literature and a representation of the network including the goals, the roles and the relationship between them. For this part only, the insights from interviews are also used to cross check author's representation of the stakeholder network of health franchising.

As shown previously in Figure 3, the core stakeholders of the health franchising network are the following: the franchisor, the franchisees, the donors and the community that is being served. In addition to these actors, in every country that has a health franchising program, the following entities can be included into the network: international agencies, the national government bodies, the private healthcare providers research institutions and civil organizations that are acting as representatives of the community. The stakeholder map is presented in Figure 4. As seen, the network is separated into three sub levels: global level, national level and local level. In the global level, international actors are placed that are the international donors, international agencies and the academic community. In the national level, there is the Ministry of Health (MoH) and the local donors within the country that are funding the health interventions. The health sector is divided into two as private health sector and public health sector. Within the private health sector, social franchises and the other private health providers are shown. Public health sector is represented as the public health institutions. The interaction between the whole health sector and the community represents the local level.

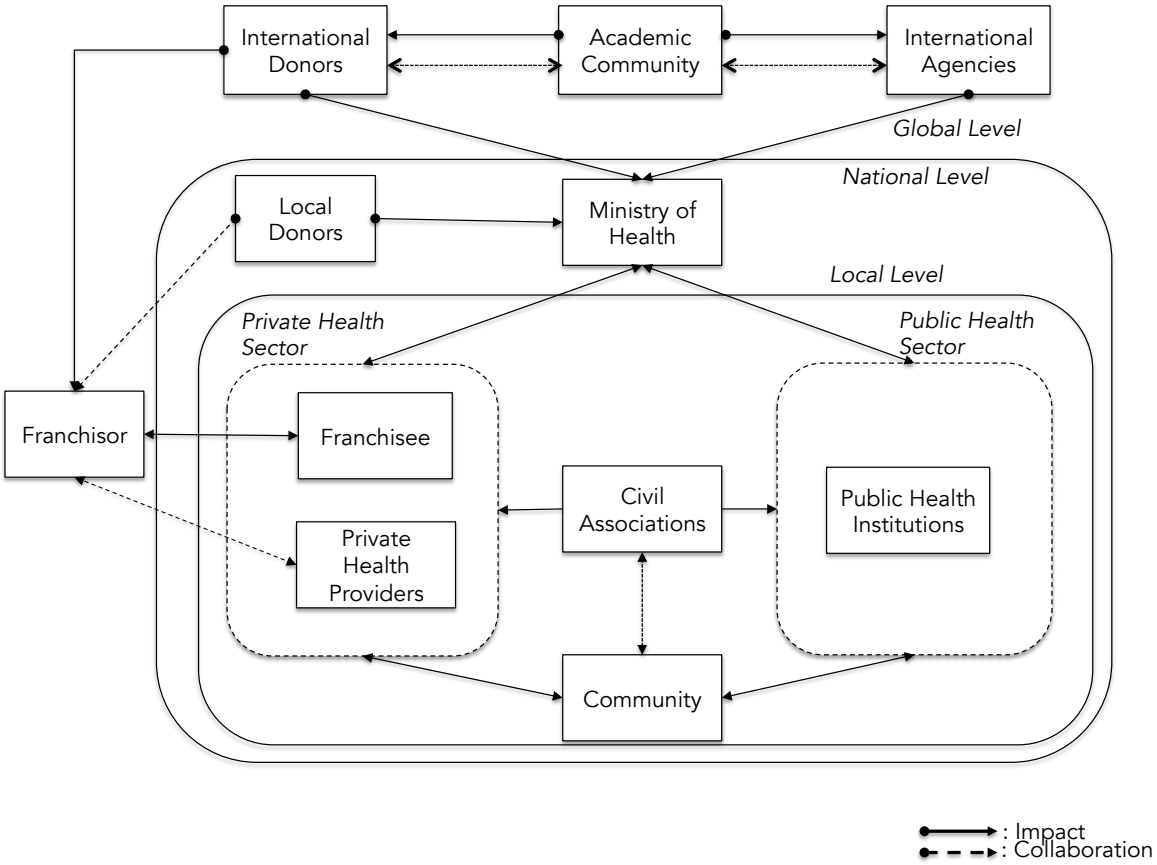

Figure 4 - Stakeholder Map

Two kinds of interaction between the actors are represented in Figure 4, namely: impact and collaboration. The impact relation is depicted with the filled line and the collaboration relation is depicted with the two-way dashed line. By "impact" it is meant that one or both of the actors are causing an impact on the other actor either by providing services, providing regulations to follow or there is a money flow between the actors in the form of funding or out-of-pocket payment. The relation "collaboration" refers to a current or possible collaboration between the actors to create an impact that can be in the form of a research or a health intervention conducted. The actors shown in the stakeholder map are explained as follows:

International Agencies

International agencies in the health franchising context involve among others: the World Health Organization (WHO), the World Bank and the United States Agency for International Development (USAID). The general interest of the international agencies is ensuring a healthier, safer and more self-reliant society in the geographies of operation. They have the resources to coordinate and direct international health within the United Nations' system (World Health Organization, 2017a). The international agencies act externally to the national governments. Their resources include initiating global health interventions, performing impact research of the interventions and providing economic and policy support. By preparing guidelines and health goals for the policy makers (i.e. Millennium Development Goals), the international agencies also have the power to stir the healthcare policies therefore having a direct impact on the MoH.

Academic Community

Universities and research organizations working with the NGOs and international agencies are identified as external stakeholders for the health franchising network. There is a need for both quantitative studies such as impact assessment and qualitative research regarding policy and quality of services. The result of the research conducted can affect the investment decisions of the donors and the resource allocation decisions of the policy makers. The Global Health Group that is a part of University of California, San Francisco is a great example of the collaboration between the academic community, franchisors and policy makers. They define themselves as an "action tank" that is conducting targeted research in health area and aiming to provide new data, tools and recommendations for the funders, policy makers and country leaders (UCSF Global Health Sciences, 2017).

Ministry of Health

MoH is the main governmental body in the health franchising network and a crucial actor. Healthcare related policy formation, regulation and legislation are performed by the MoH. The main interest of Ministry of Health is to provide the desired highest standards and accessibility of health services for its citizens while ensuring utilization of the governmental resources. The policy makers have the direct power to support a healthcare service innovation from the economical, social and institutional aspects. Health franchises are seen as a part of the private sector and are bound to the guidelines that are determined by MoH.

Donors

As mentioned, financial sources are provided by the donors for health franchising programs. International organizations mentioned previously such as USAID and the World Bank also act as funders for the health franchising programs. More funders can be included in the list namely Bill and Melinda Gates Foundation and the United Nations Population Fund (UNFPA). The interest sof these donors show variety depending on their investment portfolio; however, the general interest is the strategic alignment to their core strategy, promising impact and cost-recovery of the intervention. The priorities are cost-effectiveness, strong business and finance plans and availability of diverse revenue sources (Beyeler, Briegleb, & Sieverding, 2014). Funders play a crucial role for the start-up process and also the sustainability of the franchisees. The health franchising programs have to fulfill the necessary performance indicators in order to receive the next round of funding.

Franchisor

For health franchising programs, the franchisor is generally an NGO. The interest of the franchisor is providing social benefits for the local community while maintaining a sustainable and a cost-effective operation. It is an important actor in the network because of its relations with the external stakeholders and its power to affect the structure and the quality of the private health sector in the countries of operation. The main international health franchisors operating in major parts of the developing world with a nearly identical model are: Population Services International, Marie Stopes International and DKT International.

Franchisees

The franchisees can be either pre-existing private practitioners that became a part of the franchising network or members of the community that are trained to provide basic primary health services within the context of the program. The franchisees have the interest of maintaining their business and income while receiving the benefits from the franchisor such as trainings and providing quality healthcare services for their own community. The motivation of these franchisees to be a part of the network plays a crucial role for the quality and continuity of health franchising services.

Civil Organizations

Varying according to the local environment, there exist civil organizations involved in the stakeholder network representing both the franchisees (i.e. medical associations) and the local community. They can act as a bridge between the groups that wants their voice to be heard. The feedback from the local community about the health services or the needs and complaints of the franchisees could be therefore communicated to the public and private sector officials.

Local Community

The interest of the local community is to have access to quality, accessible, safe and affordable healthcare services. They have the direct power to stir the market circumstances and their reaction to a healthcare service innovation as health franchising is a crucial factor affecting the future of such programs.

In the international level, there are the international agencies and the international donors collaborating with research institutes or independent researchers. They provide funding for research that contributes to their decision-making process when they are funding an intervention or initiating a health intervention. The interaction between the global and national level is represented by the following three relations: international donors – MoH, international agencies – MoH and international donors – franchisor. International donors provide funding for both public and private health interventions respectively to the MoH and to franchisors. International agencies provide guidelines and health targets for MoH while also organizing health interventions themselves collaborating with the government. MoH provides health policies and regulations for both of the public and private sectors. Additionally for the public health sector, MoH provides infrastructure, equipment, commodities and staff. In the local level, the relationship between the separate health sectors and the community is depicted. Additionally, the civil organizations have an impact relationship with the public and private sector with regards to the role as intermediate between the community, franchisees and the executers.

Both international donors and international agencies collaborate with the academic community in order to perform impact analysis which is used for better resource allocation and legitimate guidelines. There are collaborations between the private health providers and franchisors in the case of fractional franchising as explained previously, that the franchisees use the infrastructure and resources of other private health sector providers. Collaborations occur between private and public health sector with the exchange of healthcare staff and with trainings provided by the franchisor or other private sector

entities to the staff of the public sector. Public healthcare staff is often recruited by the private sector in collaboration with MoH. Another collaboration is the agreement between the franchisors and MoH to provide training for the public health staff alongside their franchisees.

2.1.3. Health Franchising Impact Studies

Following the presentation of background information on the health franchising model, this section will be dedicated to the findings from impact studies conducted so far for SRH health franchising programs around the world. The literature is still limited and there is a need for more studies for coming close to identifying the real impact of these programs on their aforementioned goals. Impact is defined and measured in different ways for these studies. Therefore, in this section, first the indicators to measure the impact for each study will be presented and main conclusions will be presented.

The oldest impact study found is a study monitoring the performance of a reproductive health franchise in Nepal with similar characteristics to the health franchising model explained before (Agha & Balal, 2002). In this study the impact is measured with regards to the increase in the number of visits from the pre-test to post-test of the clinics. Randomized stratified sampling is conducted in order to define the pre-test and post-test groups and client interviews are conducted in order to understand the reasons behind the clients coming for a second visit to the clinics. The findings indicate the following: there was an increase in the number of visits from women for RH reasons to the clinic from 19% to 26%. However, it is not stated whether this is an increase due to new patients or round trips, which does not explain the extent of the increase in accessibility of the program. Among the reasons that the women made a second visit in round 2 of the study are the following: proximity of the clinic, provider's expertise and reliability, provider's caring manner. Overall, the study does not suggest that there is a significant increase in the return trips of patients after the inclusion of the clinics to the franchising network, which they correlate with the short study duration of 9 months (Agha & Balal, 2002).

Next in the timeline, there is an impact study conducted by (Decker & Montagu, 2007) for the franchised clinics in Kenya. The comparison is made between the youth attitudes and knowledge towards contraception that are attending the franchised clinics and the ones attending the non-franchised clinics. The results of the study indicate that the youth attending the franchised clinics were more likely to use contraception for delaying pregnancy. Similarly, according to the comparison, for the franchised clinics more counseling for family planning is reported than the non-franchised clinics. The percentage of learning about family planning through clinics rather than neighbors or friends is higher with the youth visiting the franchised clinics than the youth visiting the non-franchised clinics. Another finding from the study is the traits that the youth are looking for from a sexual reproductive health provider which are the following: skill, privacy and respectful treatment of the clients (Decker & Montagu, 2007).

In another study from Ngo, Alden, Pham, & Phan (2010), an impact study is conducted for the reproductive health and family planning services in public commune health stations in Vietnam. The study is conducted for period of 12 months with a baseline a post-test to the franchised stations and a

control group of non-franchised stations. There is a 40% increase in the client volume of franchised health stations, however, it is not known if it is consists of new or existing clients. Comparison during the study period suggests that the franchised health stations increased the frequency of visits while non-franchised health stations decreased. Another important finding of this study is that the identification of the importance of clients from the groups with higher income. The services are mostly used by married women since the of amount unmarried women with sexual experience is low in Vietnam and the ones that are do not choose to approach clinics because of the environment of prejudice (Ngo et al., 2010).

An important study conducted by Shah et al. (2011), has the characteristic of being the only comparative study with public services with regards to impact and the study also defines three distinct criteria to measure the impact, explaining the reasoning behind it. The comparative study is conducted for the GreenStar clinics in Ethiopia and Pakistan for the specified criteria: the efficiency, the accessibility and the quality of the facilities. The efficiency is defined by total services delivered divided by the total cost of services. The accessibility of the facility is explained by the total proportion of clients coming from the poorest quintile. Finally, the average quality for a facility is measured as the sum of the following six indicators for quality: provider training, choice of methods, information given to clients, client satisfaction, range of services provided and technical competence of the provider (Shah et al., 2011). There are several main findings as an outcome of this research. Firstly, it is found that in Ethiopia the franchised clinics provide higher cost per client than the public clinics whereas in Pakistan the values are very close. Franchised private clinics had a better quality score than the non-franchised clinics in both Ethiopia and Pakistan. Another point is that the government clinics provided a higher percentage of patients from the lowest quintile than the franchised clinics (Shah et al., 2011).

Another study from O'Connell, Hom, Aung, Theuss, & Huntington (2011), analyzes the quality perception from both client's and provider's perspective for the Sun Quality Health Network in Myanmar. There are interviews conducted with both the clients and the providers to explore the reasons of joining to the network and discover their opinion about the Sun Quality Health Network regarding these factors. The results are the following: the respondents stressed the importance of affordability of the services provided and the fact that SQH is providing them with more affordable fees than other private facilities. The respondents also mentioned the feeling of privacy and the availability of different options as their reasons for coming back to the franchised clinics. From the providers' side, the main incentive to join and remain in the network is found to be the financial benefit they are incurring. The value of professional dialogues and training was also an important factor affecting their decision to remain in the network (O'Connell et al., 2011).

Contradicting with the findings from previous studies presented here, the study by Sundari Ravindran & Fonn (2011) questions the accessibility of the health franchising programs presented in Global Health Group's Social Franchising Compendium in several aspects, namely: coverage, equity and quality of care. The research also functions as a review study, using the information available online

on the case studies that franchises has published. The findings here suggest that the health franchises have not added much to the range of SRH services and focused mainly on making SRH services widely available. Additionally, health franchises have not been the answer for the non-availability of services in the rural areas and mostly built services on the already existing practices. There is suspicion over whether the couples reached with the services were new or they were couples switching from a contraception method to the other. Furthermore, the study also questions the ability to provide quality care by the franchises with regards to enforcement of training and monitoring. The study also draws attention on the validity of satisfaction levels collected from the clients, since most of the clients. Another question raised is the ability of the providers recruited to pursue clinical activities without a linkage to a higher order of medical provider (Sundari Ravindran & Fonn, 2011).

Another quasi-experimental study that was conducted in Pakistan monitoring the impact of a health franchise by Marie Stopes Society by Khurram Azmat et al. (2013). The impact is measured on the following: awareness of contraception, ever use and current use of contraception, source of contraception and satisfaction with social franchise services. There was a year between the pre-test and post-test on the same facilities and the control arm. The results suggest that the awareness for contraception increases in both the control and experimental sites however, the increase is more significant in the experimental site. Moreover, compared to the control sites, experimental sites showed a bigger decrease in the unmet need for contraception. More than half of the contraceptive users cite the franchises as the main source for contraceptives. 96% of the women who received services stated that they were satisfied with the services. The reasons for satisfaction are stated as quality of advice received and affordability of services. The findings presented here are summarized in Table 1.

Table 1. Impact Studies

Author	Country	Method	Investigated Outcome	Perspective
(Agha & Balal, 2002)	Nepal	Pre-test & Post-test without experimental design, survey Pre-test: 24/70 Post-test: 24/42	Increase in number of visits Reasons for a return to the facility	Clients
(Decker & Montagu, 2007)	Kenya	One time exit and household interviews comparing experimental and control sites Sample: 295 member, 138 non-member and 500 household interviews	Increase in usage of contraception Family planning counseling Perception on accessibility Reasons for choosing franchised clinics	Clients: specifically youth
(Ngo et al., 2010)	Vietnam	Quasi-experimental design with pre-test and post-test with control group, survey	Client volume Frequency of Visits Proportion of clients from lowest quintile	Clients
(Shah et al., 2011)	Ethiopia & Pakistan	Comparative study with: pre and post-survey, questionnaires	Efficiency Accessibility Quality	Clients and executers
(O'Connell et al., 2011)	Myanmar	Focus group discussions Sample: 12 discussion with clients and 2 discussions with providers (6-8 people per group)	Client & provider reasons for joining the network and opinion about the network	Clients and providers
(Sundari Ravindran & Fonn, 2011)	-	Review of 45 health franchises around the world	Coverage Equity Quality of care	Clients
(Khurram Azmat et al., 2013)	Pakistan	Quasi-experimental design with control group Pre-test: 4992 Post-test: 4003	Awareness of contraception Source of contraception Satisfaction with health franchise services	Clients

2.1.4. Highlights on Health Franchising

This section focused on the exploration of health franchising concept in depth including the context, the framework, the actors involved and the perceived impact of this service delivery model in the developing world.

Health franchising is a type of social franchising which is applied in the health field with the goal of providing health services to the remote areas of the developing world with the assurance of quality, accessibility and affordability. Health franchising has its roots at social marketing programs that are primarily focused on providing contraception commodities by increasing the number of outlets to people who do not have access to them. Currently, in the world, there are 70 health franchising programs that have been recorded. There are many actors involved in the network other than the franchisor, franchisee and the community, which can be listed as the Ministry of Health of the country of the program, international and local donors, academic community, the international agencies and local civil organizations.

As mentioned, the main goal of health franchising is sustaining the following criteria: accessibility, quality and equity. In general, studies prove that health franchising programs do increase the number of health services offered and the utilization of health services (Beyeler, York De La Cruz, & Montagu, 2013; Montagu, Ngamkitpaiboon, Duvall, & Ratcliffe, 2013; Ngo et al., 2010; Sundari Ravindran & Fonn, 2011). However, there are concerns raised from the researchers about whether or not these programs are making healthcare services accessible in the places that there are no health services (Sundari Ravindran & Fonn, 2011). Another concern is if health franchises can target the poorest client base and fulfill their goal of reaching out to least advantaged clients. Out-of-pocket expenses by the poor households are identified as a major hindrance in accessing healthcare for the African region which makes up more than 40% of total health expenditure (World Health Organization Regional Office for Africa, 2014, p.117). One of the targets of health franchising programs is reducing these out-of-pocket expenses by targeting the lowest-income clients. However, research by Sundari Ravindran & Fonn (2011) states that out-of-pocket payments remain as the dominant mode of payment among these programs. Another review conducted by Beyeler et al. (2013) shows that franchised clinics serve more to a wealthier client base than other modes of healthcare services.

Regarding the health impact of social franchising programs, research on estimating the health benefits in the form of commonly used indicators such as disability-adjusted life years (DALY) are still in process. The recent study by Montagu et al. (2013) focuses on the application of DALYs to estimate the health impact of social franchising programs. Experimental studies that are conducted to identify the health impact mostly provides knowledge about the intermediate health impacts of interventions, such as, the increase in contraceptive use, increase in knowledge about family planning methods and the use of services (Firestone et al., 2016; Ngo et al., 2010). As a shared outcome of the research related to impact of social franchising programs, further research is recommended on the cost effectiveness of these programs and assessing the role of franchising within the context of an extensive healthcare delivery system.

2.2. Economic Evaluation Methods for Healthcare Interventions

This chapter aims to provide the background information on economic evaluation of health interventions with a close focus on family planning interventions. After the introduction and presentation of the methods, the section will focus specifically on the cost effectiveness analysis of family planning interventions, the guidelines and examples from the literature that will provide the information needed to conduct the analysis for the case at hand.

2.2.1. Introduction

There are two main types of economic evaluation methods for health interventions mainly: cost-benefit analysis (CBA) and cost effectiveness analysis (CEA). The two methods differ in how they measure the impact of the interventions. In cost benefit analysis, all resulting benefits are represented in monetary terms. On the other hand, for cost effectiveness analysis, the outcomes are represented in an effectiveness metric appropriate for the program which can be among others: life years gained, quality adjusted life years (QALY) gained or DALYs averted (Perkins et al., 2015).

In principle, the chance to represent all the inputs and outputs in the same metric as it is in CBA case seems more attractive for economic evaluation. However, there are challenges in monetizing the effects of health interventions (Perkins et al., 2015). Monetizing the benefits of health interventions mostly rely on the stated preference techniques where individuals are asked to place a value on the changes in their health and wellbeing. The decision of undertaking an intervention is measured considering if the aggregate willingness to pay (WTP) exceeds the costs. Measuring the WTP, therefore measuring the value of life in monetary terms is a controversial notion. CBA relies on the assumption that individuals have perfect knowledge about the value of receiving a health intervention or not. This assumption is rejected by the Word Health Organization with evidence from the literature that individuals do not have the training or knowledge to identify the value of receiving a health intervention and the assumptions required for a meaningful WTP value do not apply in health (World Health Organization, 2003). Therefore, for the economic evaluation of health interventions, WHO suggests the CEA framework instead of CBA.

Cost effectiveness analysis is a tool that aims to identify the trade-offs when choosing an alternative intervention over another one (Briggs, 1999). Cost-effectiveness refers to the value of ratio of cost per unit over desired results. It is used when it is challenging to represent the desired outcomes by monetary values (Weisbrod & Weisbrod, 1997). Identification of the cost-effectiveness is especially important for large-scale projects. WHO suggests that if a new health intervention is found to be cost-ineffective, the decision of re-allocation of resources from this project to other alternatives can be executed (World Health Organization, 2003). In other words, one of the main objectives of conducting cost-effectiveness analysis is to present evidence to the policy-makers on what works and what does not so that they can support their decisions (Dhaliwal, Duflo, Glennerster, & Tulloch, 2014). Although the results of cost-effectiveness analysis cannot be the only indicator for choosing a project, it is considered as a good starting point when comparing the burdens and impacts of different alternatives.

The general framework recommended by World Health Organization and used by a majority of studies has the following steps:

- Definition of intervention & target population
- Choosing the perspective of analysis
- Definition of comparison scenarios
- Definition of the time horizon
- Identification & valuation of costs
- Identification & valuation of health outcomes
- Discounting of future costs
- Sensitivity & uncertainty analysis
- Reporting the CEA Results (World Health Organization, 2003).

2.2.2. Cost-effectiveness Analysis of Health Interventions

As mentioned, CEA is a widely recognized tool to measure the effectiveness of health interventions. In the literature, there exists vast amount of research about the cost effectiveness of various health interventions. This part will present the main findings from the CEA of health interventions research available that could provide insight for this thesis study. The literature review conducted for this study mostly focused on the CEA of sexual reproductive health and family planning interventions considering the relevance to the research.

2.2.2.1. Costs of Sexual Reproductive Health and Family Planning Interventions

There are various types of costs and health benefits related to health interventions. The cost effectiveness analysis guidelines recommended by WHO categorizes the costs of a health intervention in the following way: costs of providing the health interventions, costs of accessing health interventions, production gains or losses, health costs in extended years of life and joint or overhead costs (World Health Organization, 2003).

Mainly, the cost of providing health interventions refer to the resources that are used to making the program available as labor, capital investments, medical supplies and overhead costs. The costs of accessing health interventions are the costs that are included if a social perspective on the analysis is chosen. These refer to the costs that are incurred by the households to obtain a health intervention and categorized into two distinct categories: resources used seeking and obtaining an intervention and the cost of time. Production gains or losses can also be included in monetary terms, if the health intervention is affecting the people's ability to work and therefore the total resources of the society. Joint and overhead costs are the resources that are shared with other interventions or programs. Overhead costs include the costs to the higher organization which is also referred as "program costs" (World Health Organization, 2003).

Narrowing the focus on family planning and sexual reproductive health interventions, in the costing manual published from United Nations Population Fund, four different types of cost categorization methods are suggested namely: indirect and direct costs, joint and non-joint costs, average and

marginal costs and recurrent and capital costs (Janowitz & Bratt, 1994). These costs are explained as follows:

Direct Costs: Direct costs correspond to the costs of resources that can be explicitly related to the identified product or service provided.
Indirect Costs: Indirect costs do not directly correspond to the service or product provided, they correspond to the supporting activities that are typically incurred to monitor or evaluate the programs.
Joint Costs: Joint costs refer to the clinical resources that are used more than one service or more than one client. In order to allocate the joint costs to a specific service, there has to be a allocation technique or decision made.
Non-joint Costs: Non-joint costs are the costs of resources that are used for only one client therefore can be fully allocated per service provided.
Average Costs: Average cost is defined as the total cost divided by the number of units of output.
Marginal Costs: Marginal cost is the additional cost required in order to produce one more unit of output.
Recurrent Costs: Recurrent costs relate to the costs of the goods that will be replaced at most in one year.
Capital Costs: Capital costs are defined at the costs of the goods that have a life year expectancy of more than a year (Janowitz & Bratt, 1994).

The same manual also suggests a categorization for the direct and indirect costs for a community-based distribution program for family planning, which has similar characteristics to health franchising programs. The direct costs include the staff costs, commodity costs, salaried personnel costs and capital costs such as building costs and equipment costs (Janowitz & Bratt, 1994). The program does not suggest a categorization for the indirect costs of the programs since it varies based on the characteristics of the programs. In the critique of literature conducted by (Janowitz & Bratt, 1992), the types of costs included for three social marketing programs and seven community-based distributions are shown. For social marketing programs, the costs that are mentioned are the following: cost of contraceptives, fixed amount given to wholesaler for salesperson's expenses, overhead costs and promotion and advertising (Janowitz & Bratt, 1992). For the community-based distribution programs for family planning direct costs that are taken into account for calculation are as follows: wages and benefits, travelling, information education and communication (IEC) materials, contraceptives, depreciation of capital costs. The indirect costs compose of administration, training and evaluation costs. Figure 5 summarizes the main costs included to calculate the total cost of family planning related community-based and social marketing interventions.

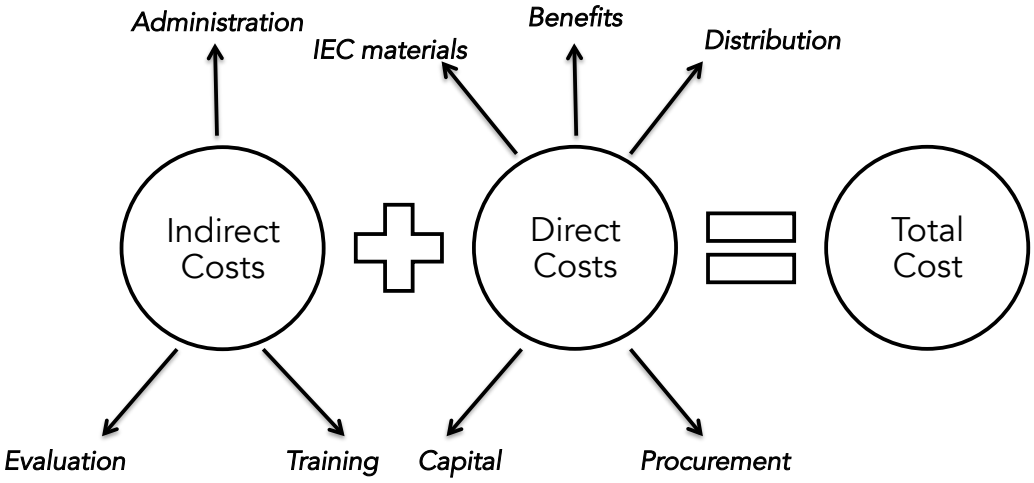

Figure 5 - Cost breakdown

2.2.2.2. Effectiveness of Sexual Reproductive Health and Family Planning Interventions

There are various effectiveness measures suggested for sexual reproductive health and family planning interventions. In this section, these measures will be introduced and examples will be presented from previous studies. The main effectiveness metrics for the studies reviewed are found to be the following: DALYs averted and Couple Years Protected (CYPs). There are also intermediate measures or follow up measures such as unwanted pregnancies averted, decrease in unmet need for contraception or reduction in maternal/newborn mortality that can be calculated prior or following the calculation of these metrics depending on the intervention.

DALYs averted is found to be a common measure for representing effectiveness in the studies reviewed (Shah et al., 2011)(Bishai et al., 2015; Fischer et al., 2005; Tolla et al., 2016). Calculation of DALYs is also an accepted and suggested method by WHO as an outcome measure for CEA of health interventions (World Health Organization, 2003, p.50). DALYs lost due to a disease is calculated as the sum of years of life lost due to premature death from the disease and the equivalent "healthy" life years lost due to non-fatal health conditions (World Health Organization, 2003). There are also other methods used when estimating the health outcome of health interventions such as Quality Adjusted Life Years (QALYs). The main ethical difference between these two methods is that DALYs assign different values to an extension of life years depending on the age of the individual that receives it (World Health Organization, 2003).

CYP is another common measure for especially family planning programs such as social marketing or community based distribution. It is calculated by multiplying the amount of contraceptives distributed to clients by a conversion factor that depicts the duration of protection provided by one unit of contraceptive (Stover, Bertrand, & Shelton, 2000). The method has both advantages and limitations. The effectiveness outcome is easily calculated with CYP, since the only data needed is the number of products distributed and services provided by a program. However, there has been debate in the literature that CYPs does not reflect all of the qualitative aspects of an intervention. There have been also ethical concerns about the encouragement of a specific type of contraception in a program because of its capability to generate higher CYP per unit (Stover et al., 2000). Despite the limitations,

the method still remains as a well known and widely used method for comparison of different family planning programs (Montagu et al., 2013).

Apart from CYP, there are other indicators for a family planning program determined by FP2020, a collaboration program between the policy-makers, donors and health providers in order to achieve large-scale access to contraceptives by the women in need (FP2020, 2017). These indicators are as follows: number of unintended pregnancies averted due to contraceptive use, number of maternal deaths averted due to contraceptive use, number of unsafe abortions averted due to contraceptive use, number of additional users of modern contraception, percentage of women who were provided with information on family planning during their last visit with a health service provider and the method information index (FP2020, 2014).

There is comprehensive research found about the cost effectiveness analysis of SRH interventions. The found literature is mostly dominated by the studies conducted in African region, since SRH disease prevalence is the highest in the region. For instance, in the study from Marseille et al. (2009), cost effectiveness of a home-based ART therapy in rural Uganda is measured. The study is designed as an experimental study with patients not receiving the intervention and after a time period, the second cohort study is conducted on the eligible patients and new additions that are receiving the treatment. A computer-based, deterministic cost-effectiveness model is developed in Excel for this study. The cost effectiveness is represented as cost of DALYs averted. The review paper by Creese, Floyd, Alban, & Guinness (2002) on the cost-effectiveness of HIV/AIDS interventions in Africa, presents the standardized cost effectiveness values, the standardized values of inputs and methods as a result of a review done with 54 studies and 9 review papers. Another article from Dandona, Kumar, Kumar & Dandona (2010) presents the cost effectiveness application to various HIV prevention interventions in the state of Andra Pradesh, India. Again, the cost effectiveness ratio is represented as cost of DALYs averted. As a result, cost effectiveness of different interventions is compared and the results are presented. Another study from Mvundura, Nundy, Kilbourne-Brook, & Coffey, (2015) explores the health impact and cost effectiveness of the female condoms in selected Sub-Saharan countries. It is proven that female condoms offer a cost effective alternative instead of the male condom which is not commonly use although its wide availability. The study uses the publicly available Impact 2 model to estimate the cost per DALYs averted.

Due to its suitability to the context and ease of calculation, the use of CYP as an effectiveness metric for family planning interventions is commonly used among community-based distribution and social marketing programs. An example is the study conducted in Tigray, Ethiopia for providing injectable contraceptives through a community-based intervention program. Cost per CYP is used in order to depict the effectiveness of the program and the drivers behind the ratio of cost per CYP is explored (Prata et al., 2016). In another example, the assessment of the community based distribution program of Zimbabwe National Family Planning Council is evaluated and the effectiveness measures are average cost per visit and average cost per CYP (Askew, Marangwanda, & Janowitz, 2001).

2.2.3. Highlights on CEA

In this section the types of economic evaluation for health interventions, the framework for cost effectiveness analysis, the costs and effectiveness for family measures found in the literature are presented.

It is concluded that the costs that are relevant to health franchising programs would not differ much from the community-based distribution and social marketing programs which are as follows: administration, evaluation and training costs constituting the indirect costs and IEC materials, benefits given to the members of the franchisee network, distribution costs, capital costs and the costs of contraception commodities form the direct costs. To measure the effectiveness of such programs, the most common measures that are used are identified as DALYs and CYPs.

There is limited information in the literature depicting the cost-effectiveness of health franchising interventions, which are not related to sexual reproductive health and family planning field, thus they were not presented in this chapter. With the help of the information gathered about cost-effectiveness analysis, in Chapter 3, the adaptation of the framework to the case at hand will be explained.

3. Methodology

In this chapter, the research methodology is explained in detail. First, alternative evaluation methods for health interventions are discussed and the motivation behind the chosen methodology is presented. Second, the case of Sun Quality Health Network is introduced in order to provide an understanding of the context the analysis revolves around. Third, the cost effectiveness analysis framework that is used in this study is presented step by step. Fourth, semi-structured interviews are briefly discussed as the final part of research methodology.

3.1. Evaluation Methods for Health Interventions

As explained in Chapter 1, the problem addressed in this research explores the extent of cost effectiveness of health franchising programs targeting sexual reproductive health in developing countries. This suggests that, an evaluation method should be selected which allows comparison among other programs and assures its fit to the structure of health franchising operations. The problem statement therefore directs us towards the area of cost effectiveness analysis. The tools to perform cost effectiveness analysis can differ from complex methods as frontier analysis to the simpler methods as presentation of input/output ratios. In the rest of this section, benchmarking (frontier analysis) and controlled experiment are briefly discussed, in order to explore the alternative methods to conduct cost effectiveness analysis.

Benchmarking or frontier analysis is a decision-making tool in which different units are compared to the best practices that are identified. In healthcare, there are three efficiency measures that are commonly used namely: technical efficiency, allocative efficiency and productive efficiency. The efficiency that is defined here is related to the ability of the analyzed program to utilize its inputs in order to generate outputs (Worthington, 2004). In other words, this efficiency score tells us how much more output a unit can deliver given the available inputs or how much more input can be reduced given the defined output. The efficiency score in these three fields are then compared to the best practices that are identified for every sector or every delivery model. The best practice is the idealized benchmark that represents the maximum number of output that can be generated by an organization from the inputs available in a given time. The best practices can be identified based on sectors or type of organizations (Worthington, 2004). The efficiency scores can be used for further analysis in a second round, with a regression model that explains the efficiency scores with the characteristics of the decision-making units. In this case health programs targeting sexual reproductive health, can be considered as the decision-making unit and in the regression model one of the explanatory variables would be the type of program, for instance franchising versus a governmental program. This type of analysis has a couple of advantages. It is for instance possible to include multiple inputs and multiple outputs in the model. And in the second round analysis it is possible to control all these factors. Furthermore it is also possible to get additional information, such as the optimal scale of a program with regards to resource allocation. Moreover, this type of analysis provides the information on efficiency, which differs from effectiveness. However, there are some disadvantages to the method as it requires an extensive dataset with many observations on programs in order to define the best

practice benchmark, which may be limited for new practices. Furthermore, for each observation, comparable data should be available.

Another method for economic evaluation of a health franchising program would be the use of a randomized controlled trial, which is commonly used to measure impact of health interventions. In Chapter 2 of this study, quasi-experiments for health franchising were introduced. In a randomized controlled experiment, the patients participating in the trial are randomly allocated to either the group receiving the treatment under investigation or to a group receiving standard treatment (or placebo treatment) as the control. A pre-test is conducted before the intervention is given to the intervention group at t=0 in order to monitor both of the groups regarding the treatment under investigation. After a determined period of time, a post-test is conducted in order to identify the changes. For the case of health franchising, it is challenging to sustain a random allocation of the patients. However, it is possible to set up an experiment that compares two regions with similar characteristics. The advantage of such an experiment is that, with a proper set up, accurate estimates can be made regarding the extent of improvement of the claims of health franchising programs such as quality, accessibility, affordability and health impact, over traditional methods of healthcare service delivery. Nevertheless, there are some disadvantages to conduct an experiment as such. There can be factors affecting the results in an experiment and the minimization of external factors can be challenging in the context of health franchising. Additionally, an experiment of this kind requires a long period of time, which can be infeasible. With regards to resources, a field experiment of this kind can be quite expensive and the project executers may not spare the resources to frequently measure the aforementioned performance indicators on a regular basis. Still, some results of this study are found to be relevant to an eventual experiment, therefore, in Chapter 6, an experiment blueprint will be introduced that provides a more detailed explanation on how to conduct an experiment in a health franchising network setting.

All facts considered, a cost effectiveness analysis framework that explores the costs and the health impact and represents the outcome, as an input/output ratio is preferred as the methodology of this study. It is eligible for the case of health franchising, because it allows comparison with the other types of interventions that are both comparable with regards to service delivery model and with regards to the costing method used. Furthermore, the general lack of data for the identification of a best practice for this type of service delivery, or, the lack of resources of conducting an extensive field experiment prevent the use of the aforementioned alternative methods. The use of a recognized framework (World Health Organization, 2003) with certain adaptations to the health franchising context can serve as a building block on what is more to come in this area of research. The representation of a *Cost per Health Impact created* ratio still allows comparison and can be used for further recommendations.

Both cost-effectiveness analysis and cost-benefit analysis are discussed as economic evaluation methods that represent an input/output ratio for health interventions. (See Section 2.2. Economic Evaluation Methods for Healthcare Interventions). There are several justifications for choosing cost effectiveness analysis over cost benefit analysis. Cost effectiveness analysis is a commonly used and recognized methodology to evaluate the performance of health interventions. Furthermore, it is also

found to be a method that is commonly used for the programs that have similar characteristics to health franchising, such as social marketing programs and community based distributions. This enables the comparability of result, since the outcomes will be depicted in the same form of ratio: *Cost per Health Impact created.* There are some limitations of CBA for health services in terms of the representation of cost-benefit ratio. The main goal with CBA is to explore whether the benefits outweigh the costs and if so, to what extent. The use of CBA creates difficulties for the case of health franchising because of the limited availability of data that can help monetize the health impact. In general, it is highly difficult to represent an improvement in social welfare in quantitative terms, especially if it is an improvement in health. The fact that the health issue addressed here is the sexual reproductive health makes it harder to monetize the benefit of a unit of health improvement. *It may be easier to estimate the benefit of averting a tuberculosis infection than averting an unwanted pregnancy.* With a tuberculosis infection, this can be done taking into account the cost of time spent and the cost of equipment used for treatment, as a burden to the family. However with family planning, the estimation becomes more complex.

3.2. Case Description: Sun Quality Health Network

The data for the cost effectiveness analysis is retrieved from Population Services International (PSI) Myanmar's Sun Quality Health (SQH) health franchising network. Data on operational costs, program structure and health services are retrieved from previous academic work on the network (Bishai et al., 2013) and company reports (Schlein et al., 2010a). This section is dedicated to provide a description of the context that the analysis revolves around.

3.2.1. Myanmar SRH Profile

According to the sample of DHS 2015-2016 in Myanmar, among married women within the ages of 15-49, 16% of them have an unmet need for family planning (Ministry of Health and Sports (MoHS) and ICF, 2017). This means, 16% of the women sampled for the survey would like to use a contraception method and do not have access to one. 52% of the women in fertile age are using a family planning method. It is found that women in urban areas are more likely to use modern modes of contraception than rural areas. There is also a correlation found that, educated women are more likely to use methods of modern contraception than uneducated women. There is also a high difference on the unmet need for family planning in different regions. The use of modern contraception varies from a minimum of 25% in Chin State to a 60% in Bago and Yangon region (Ministry of Health and Sports (MoHS) and ICF, 2017). In this survey, there is also information about the non-users and their intention to ever use contraception. The findings suggest that, more than half of the non-users do not intend to use any method of contraception. Overall, 65% of the women have not been exposed to a family planning message in any of the mass media.

Among the women that are using a modern method of contraception (52%), the most popular method is injectables (28%), followed by, oral contraception pills (14%), female sterilization (5%), IUD (3%), implants (1%) and male condom (1%). The majority of the non-users (92%) that have been approached for interviews stated that they have never had the chance to discuss family planning with a midwife or a community health worker (Ministry of Health and Sports (MoHS) and ICF, 2017).

Compared to only 3% unmet need for family planning of its neighboring country Thailand, Myanmar is perceived to be lagging behind in family planning practices (International Council on Management of Population Programmes, 2012). Although its current value lowered, between the years of 2007 to 2010, the unmet need for family planning increased from 17.7% to 24.2%. Long-term contraception methods are not easily available in the country (UNFPA Myanmar, 2013).

In Myanmar, similar to most of the developing countries, there are some challenges with the public sector and its services. Firstly, the existing supply chain structures are highly fragmented among vertical programs and funding sources. This creates confusion for coordination of the services. The lacking investment from the government's side in the public health sector is causing limited infrastructure, management and technical expertise. Another issue is that the budget is not allocated according to a standard and clear formula. Moreover, the budget is often arranged based on the input of the health programs rather than the outputs. The public sector in Myanmar has certain regulations that limit the activities of health franchises. Firstly, in Myanmar, the promotion of reproductive health related services by the media or billboards are restricted. Secondly, certain requirements of a high medical worker for clinical services or injections are constraining the ability of health franchises to employ community health workers for these services.

3.2.2. PSI Myanmar: Sun Quality Health Network

PSI Myanmar has been operating in Myanmar since 1995. The program first started with a focus on HIV prevention and then extended its services to a broader range of health areas. Currently, PSI Myanmar is operating in seven health areas, including: malaria, reproductive health, HIV/STI, diarrhea, tuberculosis and pneumonia. PSI Myanmar launched the Sun Quality Network in 2001, which is a network of practitioners that are utilizing the existing private clinics.

The Sun Quality Network program consists of two types of providers: Sun Quality Health (SQH) providers and Sun Primary Health (SPH) providers. SQH is formed of private physicians and include the health franchising activities in their operations. SPH providers are formed of auxiliary midwives, other levels of health staff and even members of community with no health education background such as farmers, teachers or unemployed individuals. The goal of SPH providers is to generate demand among the community for franchising services and create awareness on primary health topics.

SQH providers both sell products and conduct clinical services for sexual reproductive health and family planning. 86% of overall providers offer sexual reproductive health and family planning services, making it the most popular service of the franchisees. The products include, oral contraception pills, male and female condoms and emergency contraceptives. Clinical services include 1-month and 3-month injectables, implants and IUDs. A definition of these services is provided in Appendix A. SPH providers also sell commodities to the society, they distribute oral contraception

pills, female and male condoms. They do not have a clinic and often see patients at their own house in a separated room for counseling and selling commodities.

PSI Myanmar offers the following for the franchisees in the network:

- A three day training course with an emphasis on communication skills
- Subsidized prices on the commodities
- Review meetings and refresher trainings
- Continuous resupply of products and monthly monitoring
- Promotion of the network through media channels

3.3. Cost Effectiveness Analysis Framework

In this section, the "how" of cost effectiveness analysis will be presented and the modifications on the general framework will be explained. Furthermore, costing assumptions and the formulas used will be discussed in detail. The steps of the cost effectiveness analysis can be seen in Figure 6.

3.3.1. Definition of Intervention

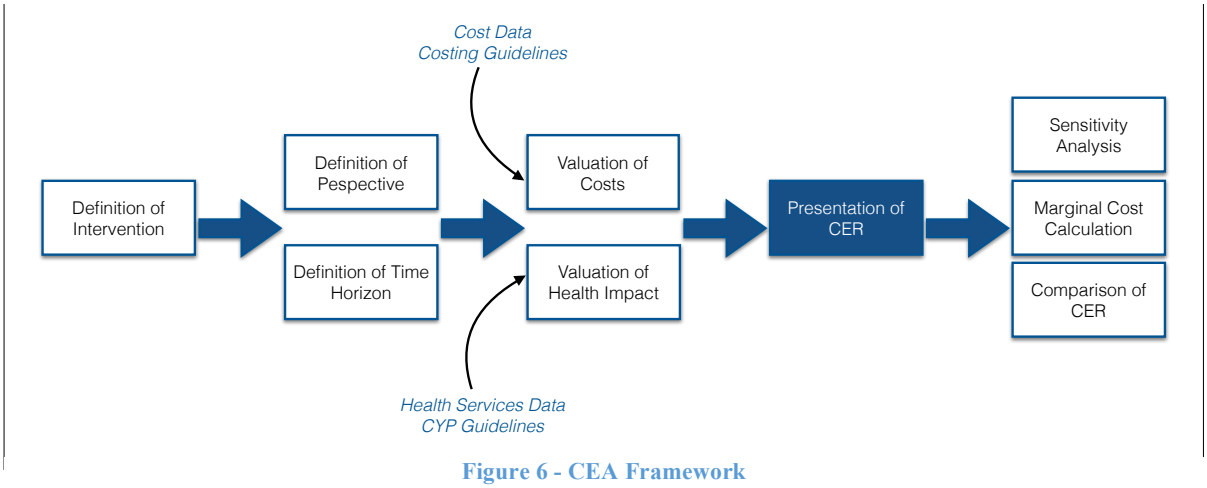

Figure 6 - CEA Framework

The first step of cost effectiveness analysis is the intervention definition. It is very important to realize that this research does not try to evaluate the cost effectiveness of certain contraception methods, it aims to evaluate the cost effectiveness of health franchising as an intervention, providing sexual reproductive health services. Therefore, the intervention is defined as health franchising of SRH and family planning services in Myanmar with coverage of 169 townships. The target population for sexual reproductive health services is stated as the women in reproductive age (15-49) in urban and peri-urban areas of Myanmar. The services include supply of contraceptive commodities such as oral contraceptives, male condoms, female condoms, emergency contraceptives and also clinical services such as insertion of Intra-Uterine Devices (IUDs), injectables and implants. In addition to the services provided, there is also family planning counseling provided for the visitors.

3.3.2. Analysis Perspective

The perspective of intervention is chosen as program executer's perspective, which is the headquarters of PSI Myanmar. Thus, the costs incurred are calculated as the costs that are incurred to make the health franchising program possible. The costs incurred by the society in order to reach the services

will not be included in the calculation because of the vague information about the locations of the facilities and the risk of making false assumptions. However, the affordability of the services will be included as separate information in order to show if the services provided by a fractional health franchise operating as a part of PSI Myanmar network is affordable according to the selected thresholds of affordability.

3.3.3. Definition of the Time Horizon

The time horizon for this study is determined as one calendar year for the year 2009. The costs that will be presented in the analysis will be the costs incurred in one year for the operations of PSI Myanmar and the health impacts will be presented in couple years protected which refers to one year of protection. Therefore, all the costs and impacts will correspond to one calendar year.

3.3.4. Valuation of Costs

The costs of a health franchising program is divided into two categories: direct costs and indirect costs.

3.3.4.1. Direct Costs

Direct costs of a health program belong to the resources that are directly related to the health services provided. In this case, the health services provided by the franchisees are the sexual reproductive health services which do not function without the commodities and the clinics. The direct resources that are affiliated with the SRH services of a fractional health franchise is therefore determined as:

- Procurement costs to PSI
- Distribution cost
- The cost of keeping the franchisees in the network

In the literature, IEC materials are also added to the direct costs list for social marketing programs. However, for Sun Quality Network as mentioned, the demand creation is done by SPH providers. Therefore IEC materials are included in the indirect cost category that will be presented in the following section.

It should be noted that the alternative direct cost valuation would involve the following if *the cost of keeping the franchisees in the network* has not been added to the framework:

- Procurement costs to PSI
- Subsidy costs to PSI
- Incentives and salaries of franchisees
- Distribution cost

However, this costing does not include the revenues the franchisees receive from selling the contraception commodities. This undermines the cost of the program. The selling prices of these are determined by PSI Myanmar operations and are displayed in the clinics to apply standard pricing to all services. By definition, cost of keeping the franchisees in the network incorporates the subsidies, incentives, salaries and the sales revenues of the franchisees demonstrating the real money flow in the network and it is an adjustment made to provide an ease for the costing of a health franchising program.

$$\boldsymbol{Direct\ Cost} = Annual\ Procurement\ Cost + Annual\ Distribution\ Cost + Annual\ cost\ of\ keeping\ the\ franchisees\ in\ the\ network$$

Procurement costs of commodities

The procurement is mostly made by the international donors and then shipped to Myanmar office of PSI. The unit costs that are presented here were estimated in two ways. From the contraception procurement data of UNFPA, the total procurement contraception quantity for Myanmar and the total cost paid for the products is available. For the commodities that this information was made available, the amount that UNFPA has procured is used, since UNFPA is one of the main funders of PSI Myanmar. The unit cost is calculated as the division of total cost by the total procurement quantity. For the commodities that this information has not been available, namely for the 1-month and 3-month injectables, the unit prices for these commodities over the years 2011-2015 was fitted to a line to back cast the unit cost for the year 2009 (Reproductive Health Supplies Coalition, 2016). Then the total procurement cost is calculated as follows:

$$\boldsymbol{Annual\ procurement\ cost\ for\ product\ i} = Unit\ cost\ of\ i * number\ of\ i\ procured$$

The sum of the annual procurement cost for all the products therefore forms the total annual procurement cost of PSI Myanmar.

Distribution Costs

There are two types of distribution costs that can be taken into account for the case of SQN. The distribution of commodities to Myanmar and the internal distribution of commodities which is performed once a month by a monitoring team that resupplies commodities for all the clinics. The distribution cost of the commodities to Myanmar could not be estimated because of the confidential information of the donors and because of the fact that procurement is made from different locations. However, the annual distribution and vehicle cost of the internal operation for resupplying commodities of the franchisees is available for the whole program (Bishai et al., 2013).

The annual distribution cost is stated for all the clinics, regardless of the service they are providing. In order to estimate the cost for sexual reproductive health services, a cost allocation method has to be used.

The first cost calculation assumption is allocation of the distribution according to the number of clinics offering reproductive health services. A cost allocation technique suggested in the literature when a health facility is offering very integrated services as the case of SQN, is allocating the operational costs related to the health impact created by separate health areas. However, this would be beyond the scope of this research. Therefore, an alternative assumption is made as allocating the costs based on the market share of SRH commodities.

$$\textbf{Annual distribution costs allocated to SRH}^{(1)} = Total\ annual\ distribution\ cost \times \frac{number\ of\ SRH\ clinics}{total\ number\ of\ clinics}$$

$$\textbf{Annual distribution costs allocated to SRH}^{(2)} = Total\ annual\ distribution\ cost \times \frac{number\ of\ SRH\ commodities\ distributed}{total\ number\ of\ commodities\ distributed}$$

Cost of keeping the franchisees in the network

The cost of keeping the franchisees in the network is an adjustment made in this study to the general costing method for sexual reproductive health interventions. For community distribution or social marketing programs, if the providers are not incentivized for services or are not paid in a regular basis, the cost of their time is calculated through their opportunity cost of not earning a minimum wage. In the studies reviewed, this has been found to be the method of valuation of the volunteering time of community health workers (Prata et al., 2016) However for the case of health franchising in general and in SQN, there is an incentive system in order to motivate the providers to remain a part of the network. The providers procure the commodities in subsidized prices from the franchisor, receive incentives per service for some clinical services as IUD insertion and for the demand creation agents receive monthly salaries, as seen in Figure 7. There are not only monetary motivations for a provider to join and remain a part of the network. It has been found from studies that training and the reputation the providers receive as a part of the network are also the main motivational factors (D. Singh, Negin, Otim, Orach, & Cumming, 2015). For this thesis study, because of the difficulty to monetize the incentive of training for the providers, the cost of keeping the providers in the network is considered as the profit they receive from being a part of the network. The cost of keeping the providers in the network is the revenue they make from selling commodities and depending on the provider, the incentive or salary they receive. The aforementioned assumption is crosschecked with two experts from PSI operations for validation of its use.

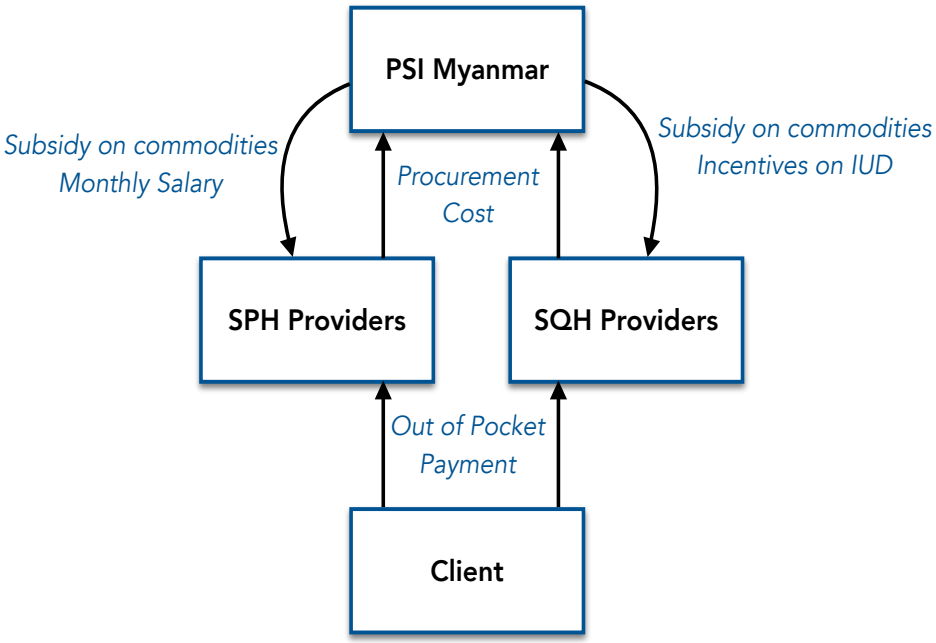

Figure 7 - Money Flow

Therefore, the cost of keeping the franchisees in the network (annual incentives) is calculated as follows:

$$\textbf{\textit{Annual cost of keeping SQH franchisees in the network}}$$
$$= [Unit\ cost\ of\ product \times (1 - subsidy\ level) \times (\#\ of\ commodities\ procured\ annually)]$$
$$- [(Selling\ price\ of\ commodity \times \#\ of\ commodities\ sold\ annually)]$$
$$- [(\#\ of\ IUDs\ inserted\ annually \times incentive\ per\ IUD)]$$

$$\textbf{\textit{Annual cost of keeping SPH franchisees in the network}}$$
$$= [Unit\ cost\ of\ product \times (1 - subsidy\ level) \times (\#\ of\ commodities\ procured\ annually)]$$
$$- [(Selling\ price\ of\ commodity \times \#\ of\ commodities\ sold\ annually)] - [monthly\ salary \times \#\ of\ SPH\ providers * 12]$$

Capital Costs

The capital costs for a health program include the building and equipment, the capital investments that are made at the beginning of the program and that can be used at least one year. In the case of a fractional franchise as SQN, the capital investments are negligible and just include the rebranding of clinics showing the clinic is a part of PSI network. Other than this, the already existing equipment in the clinics are used and the clinic itself is not extended or no new clinics are built. From the case study of SQN, it is mentioned that for the year 2009, the franchisees also did not focus on rebranding their

facilities. Also with the insight from the interview conducted with the Deputy Manager of PSI Myanmar, this assumption about the capital costs has been verified. The fact that the clinician has already an existing private practice and the trade-off is not between "opening a clinic" or "not opening a clinic" for the case of the franchisees in SQN, any opportunity cost is also not included in the direct costs.

3.3.4.2 Indirect Costs

The indirect costs are the costs for the activities that are supporting the delivery of health services provided by the franchisees. These activities include:

- IEC and promotional materials in order to promote the activities of franchisees
- Trainings provided for the franchisees as a part of the monthly visits
- Salary of personnel that is working to make the program possible.

As previously explained, all of these costs are incurred once per month for all the clinics that the monitoring team is making the visits to. No matter which health service is provided by the clinic, the training, the monitoring and the IEC materials are given as a part of the program to the franchisees. Therefore, there again rises a need to allocate the indirect costs incurred for the SRH services. The same allocation methods presented in distribution cost allocation are used for the allocation of indirect costs.

$$\textbf{Total annual indirect cost allocated to SRH}^{(1)} = (Annual\ IEC\ cost + Annual\ Training\ cost + Annual\ Personnel\ Cost) \times \frac{number\ of\ SRH\ clinics}{total\ number\ of\ clinics}$$

$$\textbf{Total annual indirect cost allocated to SRH}^{(2)} = (Annual\ IEC\ cost + Annual\ Training\ cost + Annual\ Personnel\ Cost) \times \frac{number\ of\ SRH\ commodities\ distributed}{total\ number\ of\ commodities\ distributed}$$

$$\textbf{Total Cost} = Total\ annual\ direct\ cost + Total\ annual\ indirect\ cost$$

3.3.5. Valuation of Health Impact

With the data at hand, the effectiveness of the family planning services of SQN will be measured with the CYP (Couple Years Protected) metric. As explained previously in the Chapter 2 of this thesis study, CYP is a popular measure to quantify the impact of different types of contraception methods and it is a method that provides ease in presenting the total impact of different contraception methods cumulatively. It is found to be the most appropriate outcome measure for this study because of the following reasons:

- The data needed to calculate the CYPs suits to the data at hand.
- Because its wide use, it allows comparison with other studies and provides a threshold.

3.3.6. Presentation of CER

The outcome of the cost effectiveness analysis is the presentation of cost effectiveness ratio (CER). The CER is represented as cost per CYP, which represents the cost spent by the program in order to generate one couple year protected: to protect one year of a couple from having unwanted pregnancy with the contraception methods provided.

$$\textbf{Cost per CYP} = \frac{Total\ cost\ of\ the\ program}{Total\ CYP\ generated\ by\ the\ program}$$

After the calculation of this ratio, three more steps remain to conclude on the extent of cost effectiveness of Sun Quality Health franchising network which are: sensitivity analysis, marginal cost calculation and comparison to CERs of similar programs.

3.3.7. Sensitivity Analysis

After the presentation of main results, a sensitivity analysis is conducted with the What-If Analysis Tool in Excel. The goal of this analysis is to discover the relation between different inputs with the output of cost per CYP. The main inputs are selected as the unit cost of commodities, the percentage of subsidy provided by the franchisor and the number of commodities and services provided by the franchisees in a month. These inputs also represent the inputs that can be altered by the franchisees and franchisor (number of commodities and the percentage of subsidy) or the market conditions (unit cost of commodities). For each of the variables an upper bound and a lower bound are determined based on the maximum and minimum values that are possible for the inputs.

3.3.8. Marginal Cost Calculation

The marginal cost is calculated using the information of how many more of each commodity should be procured and added as an input to the analysis in order to create one more unit of CYP. Then this number is added to the initial input of commodities procured for all types of contraception methods in separate scenarios to see the impact of these changes on the total cost. The goal of the calculation is to depict the differences of values between different methods regarding their cost and effectiveness values. The difference in the total cost after the change of the number of commodities input, gives the marginal cost of CYP per method.

3.3.9. Comparison of CER

In order to make the comparison of cost per CYP ratio calculated for PSI Myanmar with other types of family planning programs, a review is conducted for the programs that have stated the outcome as cost per CYP. The review consists of six studies and covers a total of eighteen developing countries in Asia, Africa and Latin America. Two review studies by Huber & Harvey (1989) and Barberis & Harvey (1997) respectively, that are often used to compare the cost per CYP ratio is also included in the review, expanding the coverage. The details of the programs with respect to the year of the program, the type of program, the costs that are taken into account, the services that are provided and

the corresponding cost per CYP are presented. All costs are converted to current dollars for comparison.

3.4. Complementing the numbers: Interviews

Four semi-structured interviews are conducted for the purposes of crosschecking the assumptions of the analysis and complementing the findings. Interviewees are selected from two organizations, namely, PSI, the subject of the analysis for this study and Cordaid another non-profit organization conducting community-based sexual reproductive health interventions.

The purpose of the interviews is three-folded. Firstly, because of its not very unexplored and fast-expanding nature, the context of health franchising requires an understanding beyond the numbers. The interviews are used to better understand both the operations of PSI and explore the improvement areas in the healthcare service delivery model of health franchising in general. Secondly, the assumptions concerning the analysis are checked with experts, in order to validate their use for further analysis. Lastly, the interviews also provide new insights to integrate with the findings from literature and analysis and to present recommendations for both practical and academic purposes.

4. Cost Effectiveness Analysis

In this chapter, the cost effectiveness analysis of the operations of Sun Quality Network for the year 2009, for sexual reproductive health (SRH) are presented. The main components of the analysis are the costs and the health outcomes generated as a result of the health services provided. The result of the analysis is the presentation of cost per CYP ratio of the Sun Quality Network activities. After the presentation of this ratio, the effect of main inputs on the cost per CYP ratio is explained by the sensitivity analysis. Following this, the outcome is compared to the cost per CYP ratio of other programs that are found to be relevant for comparison with health franchising. The chapter is concluded with the presentation of the findings.

Evaluating the cost effectiveness of a health franchising program is different than the evaluation of a health intervention focused on a specific disease. As explained previously, apart from the sexual reproductive health services, health franchises offer other integrated health services combined with SRH and the costs are generally calculated for the whole program. Moreover, the SRH related intervention includes various products and services. The cost effectiveness analysis methodology used in this thesis study is presented in Section 3.3. Cost Effectiveness Analysis Framework. Using this framework, in this chapter, the data and main results are presented.

4.2. Valuation of Costs

As explained in Chapter 3, costs of a health franchising program are divided into two categories: direct costs and indirect costs. The calculation and the assumptions made during the process of cost calculation are explained previously. This section will present the data and the results of calculations.

4.2.1. Inputs for Cost Valuation

Regarding the previously presented formulas, the main inputs that are going to be used while valuing the costs are as follows:

- Unit costs of commodities
- Number of commodities distributed by the program
- Subsidy provided by PSI Myanmar to the franchisees in the network
- Selling prices of commodities by the franchisees
- Incentives and monthly payments to franchisees
- Annual costs spent by PSI Myanmar for marketing, distribution and training

The relation between the inputs and main direct costs categories can be seen in Figure 8 - Input cost relation.

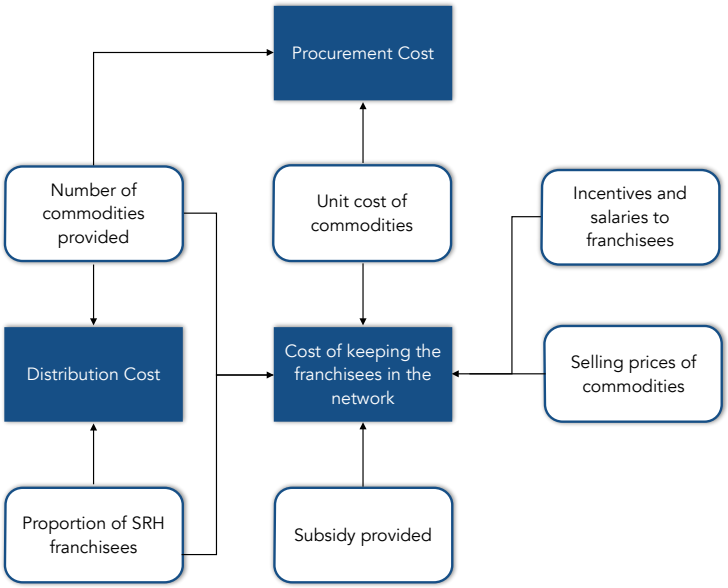

Figure 8 - Input cost relation

First set of data that is shown is crucial for the cost allocation conducted for distribution costs and indirect costs. Table 2 shows the proportion of SRH franchisees and the number of commodities distributed by these franchisees. Note that same franchisees can provide different kinds of services. The total number of franchisees for the year 2009 is stated in the bottom row as 817 SPH providers and 1177 SQH providers.

Table 2 - Proportion of provider and services

Health Area	*# of SPH providers*	*# of SQH providers*	*Total # providers*	*% of overall provider*	*% of total services*
SRH	785	930	1715	**86,01**	**72,04**
Malaria	424	550	974	48,85	9,54
STI	0	742	742	37,21	3,43
TB	393	533	926	46,44	0,70
Pneumonia	595	666	1261	63,24	4,76
Diarrhea	782	0	782	39,22	9,54
Total	817	1177	1994		

As explained previously, Sun Quality Health Network provides eight types of SRH commodities: IUDs, 1-month injectables, 3-month injectables, oral contraceptives, female condoms, male condoms, implants and emergency contraceptives. The amount of the commodities provided for the year 2009 can be seen in Table 3.

Table 3 - Services provided

Product	*Number distributed*
IUD	12200,00
1-month injectables	120533,00
3-month injectables	55424,00
Oral contraceptives	224604,00
Female condoms	171224,00
Male condoms	3189,00
Implants	1031,00
Emergency Contraceptive	7303,00

The unit costs of the commodities can be seen in Table 4. These costs are estimated in two ways. From the contraception procurement data of UNFPA, the total procurement contraception quantity data for Myanmar and the total cost paid for the products are obtained. For the commodities that this information was available, the amount that UNFPA has procured is used, since UNFPA is one of the main funders of PSI Myanmar. The unit cost is calculated as the division of total cost by the total procurement quantity. For the commodities that this information was not available, namely for the 1-month and 3-month injectables, the unit prices for these commodities over the years 2011-2015 was fitted to a line to back cast the unit cost for the year 2009 (Reproductive Health Supplies Coalition, 2016).

Table 4 - Unit Costs (Source: (UNFPA Procurement Services, 2017))

Product	*Unit Cost ($)*
IUD	0,74
1-month injectables	0,84
3-month injectables	0,85
Oral contraceptives	0,31
Female condoms	0,62
Male condoms	0,02
Implants	25,30
Emergency Contraceptive	0,29

The subsidy levels provided for each type of product varies. The values can be seen in Table 5.

Table 5. Subsidy Levels

Product	*Subsidy provided by PSI (%)*
IUD	72
1-month injectables	85
3-month injectables	57
Oral contraceptives	58
Female condoms	95
Male condoms	76
Implants	87[a]
Emergency Contraceptive	41

[a]: Estimate based on the average subsidy

Source: (Schlein et al., 2010a)

The selling prices of the commodities are included in the analysis as stated in the SQN case study for the year of 2009. The prices which are stated in the file in Burmese Kyats were converted into 2009 dollars with the exchange rate of 1$= 1000 Kyats. For the IUD services, the clients have the option to use a voucher and receive a discount for the services. The number of people that is arriving to the SQH clinics with a voucher for IUD services is estimated from the following information stated in the case study: "%34 of the total IUCD patients are referred from SPH network and %80 of these patients arrive with a voucher." (Schlein et al., 2010a). The selling prices of the products for the year 2009 both in Kyats and dollars can be seen in Table 6.

Table 6. Selling Prices of commodities

Product	*Selling Price (Kyats)*	*Selling Price ($)*
IUD (without voucher)	6000	6
IUD (with voucher)	500	0,5
1-month injectables	400	0,4
3-month injectables	500	0,5
Oral contraceptives	300	0,3
Female condoms	200	0,2
Male condoms	200	0,2
Implants		3,97[a]
Emergency Contraceptive	400	0,4

a: Estimate based on the average profit ratio of other products

Source: (Schlein et al., 2010a)

4.2.2. Cost Values

In this section, the direct and indirect cost values are presented. The cost values are calculated according to the methodology explained in Chapter 3 and input values presented in the beginning of this chapter. Table 7 shows the final cost table, values according to the cost allocation methods presented. The cost values here are presented in 2009 dollars.

Table 7 - Cost Calculation

Cost Category	Cost Type	Annual Cost ($)	Annual Cost ($)**
Direct Costs	Procurement cost	261771,00	261771,00
	Cost of keeping the franchisees in the network	373038,39	373038,39
	Distribution costs	447844,64*	355580,64**
Sub total		**1082654,02**	**990390,03**
Indirect Costs	Personnel Cost	572852,14*	454834,37**
	Training costs	201714,62*	160157,80**
	IEC Activities	52839,89*	41953,93**
Sub total		**827406,65**	**202111,73**
TOTAL COST		1910060,68	1192501,76

*: Value calculated according to the proportion of SRH clinics.

**: Value calculated according to the market share of SRH services.

4.3. Valuation of Health Impact

With the data at hand, the effectiveness of the family planning services of SQN will be measured with the CYP (Couple Years Protected) metric. As explained previously in the Chapter 2 of this thesis study, CYP is a popular measure to quantify the impact of different types of contraception methods and it is a method that provides ease in presenting the total impact of different contraception methods cumulatively. It is found to be the most appropriate outcome measure for this study because of the following reasons:

- The data needed to calculate the CYPs suits to the data at hand.
- Because its wide use, it allows comparison with other studies and provides a threshold.

Table 8. CYP Calculation (Source: (USAID, 2011))

Type of Contraception (in units)	*Number distributed*	*Amount needed for 1 CYP*	*CYP value*
IUD	12200,00	0,22	56120
1-month injectable	120533,00	13	9271,77
3-month injectable	55424,00	4	13856,00
Oral Contraceptive (cycles)	224604,00	13	17277,23
Male condom	171224,00	120	1426,87
Female condom	3189,00	120	26,58
Implant	1031,00	0,26	3917,80
Emergency contraceptive	7303,00	20	365,15
Total	595508,00		102261,3917

The effectiveness measure will depict the total number of couple years protected with the commodities distributed and the number of clinical services provided by PSI Myanmar's health franchising network during the year of 2009. The conversion factors for different type of contraceptives are retrieved from the most recent list of USAID from December 2011, which can be seen in Table 8.

The table consists of three columns namely: the number distributed, the amount needed for 1 CYP and the corresponding CYP value. The number distributed is the number of commodities or clinical services provided by PSI Myanmar network. The third column shows the amount needed of a contraception commodity to sustain one couple year of protection. For instance, in order to have one couple year protection there is a need for 13 cycles of oral contraception, whereas, to generate the same duration of couple year protection there is a need for 0,26 units of implants because of the longer protection of the method. As a result, the total CYP generated by the program during the year of 2009 is 102261,39, which constitutes the denominator of the cost effectiveness ratio that will be calculated.

4.4. Cost-effectiveness ratio and Marginal Cost

Following the calculation of total program cost and the CYPs generated, the cost-effectiveness ratio can be presented. The cost-effectiveness ratio for this analysis is represented as the cost per CYP, which refers to the cost of generating one unit of couple years protected by the program. In Table 9, the summary of the final total cost table can be seen. According to the calculations, for the year of 2009, the cost of CYP for SQN is between 11,66 $ and 18,68 $ depending on the allocation method.

Table 9. Final Cost Calculation

Cost Category	Cost Type	Annual Cost ($)	Annual Cost ($)
Direct Costs	Procurement Cost	261771,00	261771,00
	Cost of keeping the franchisees in the network	373038,39	373038,39
	Distribution cost	447844,64*	355580,64**
Sub total		1082654,02	990390,03**
Indirect Costs	Personnel Cost	572852,14*	454834,37**
	Training costs	201714,62*	160157,80**
	IEC Activities	52839,89*	41953,93
Sub total		827406,65	202111,73
TOTAL COST		1910060,68	1192501,76
CYP estimates		102261,39	102261,39
Cost per CYP		18,68	11,66

*: Value calculated according to the proportion of SRH clinics.

**: Value calculated according to the market share of SRH services.

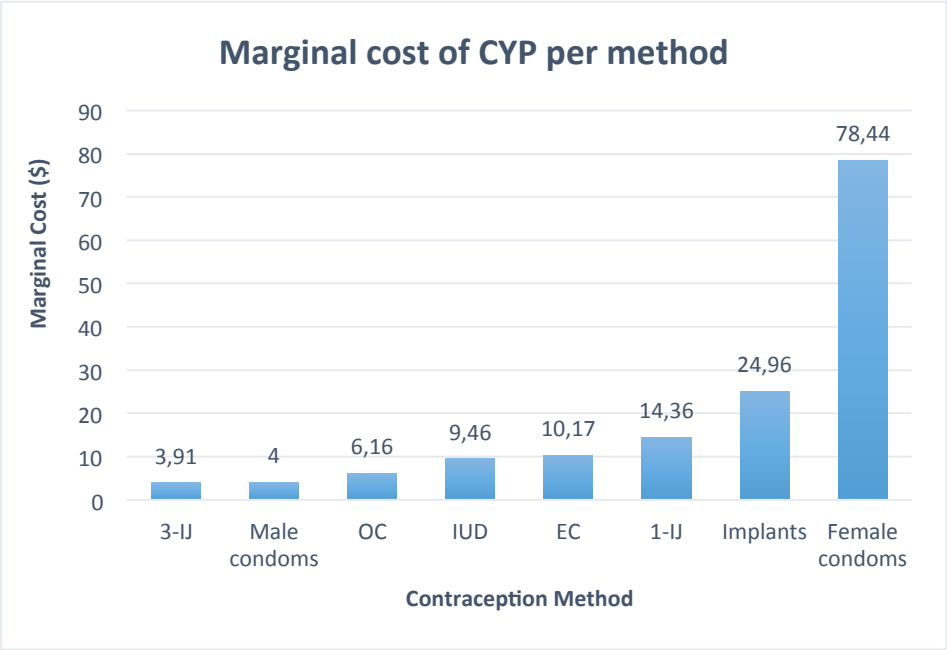

Figure 9 - Marginal costs

After the presentation of cost effectiveness ratio, the marginal cost of creating one unit of CYP is calculated for each method. As it is explained previously, the contraception methods that SQN is providing have different durations of protection. Male condoms, female condoms, oral contraceptive pills and injectables are considered as short-term contraception whereas implants and IUDs are in the long-term contraception category. In order to provide one year of couple protection, in average 120 units of female or male condoms are needed whereas for implants this number is 0,26. There are also differences of the unit costs of these products. Long-term methods of contraception are usually more expensive and the providers might have more incentive to sell the short-term methods to the clients in order to have continuous demand for their products. Therefore, by calculating the total cost of one unit of couple year protection for each method, the differences in effectiveness for the types of commodities can be observed.

The comparison of the marginal cost of CYP per method is depicted in Figure 9. As seen, three-month injection is the least costly method for generating one unit of CYP whereas female condom has the highest marginal cost among all. It is important to note that, implants and IUDs are long-term contraception methods and the conversion factor for generating 1 unit of couple year protection is 0,26 and 0,23 respectively. Because it does not make sense to assume a procurement decision less than 1 unit for a commodity, the marginal cost was calculated assuming that the program is providing 1 unit more of these commodities. This assumption overstates the marginal cost of these products, because the marginal cost is stated for providing more than 1 unit of CYP. In either case, it is important to point out that IUDs are performing better than short-term methods as emergency contraceptives, 1-month injectables and female condoms. The high unit cost of implants would explain the result of a high marginal cost for creating one unit of CYP and can be related to its low share among the services of SQN. It is also significant to take into account the contribution of different methods for the CYP provided by the program. As it can be seen in Figure 10 the IUDs contribute the most to the generation

of CYPs by SQN. All of the short-term methods except oral contraceptives contribute the least. Implants, despite their long term protection, is falling behind in providing CYPs compared to the other long term methods of 3-month injectables and IUDs that could be due to low demand and the reluctance from the franchisees to provide the service.

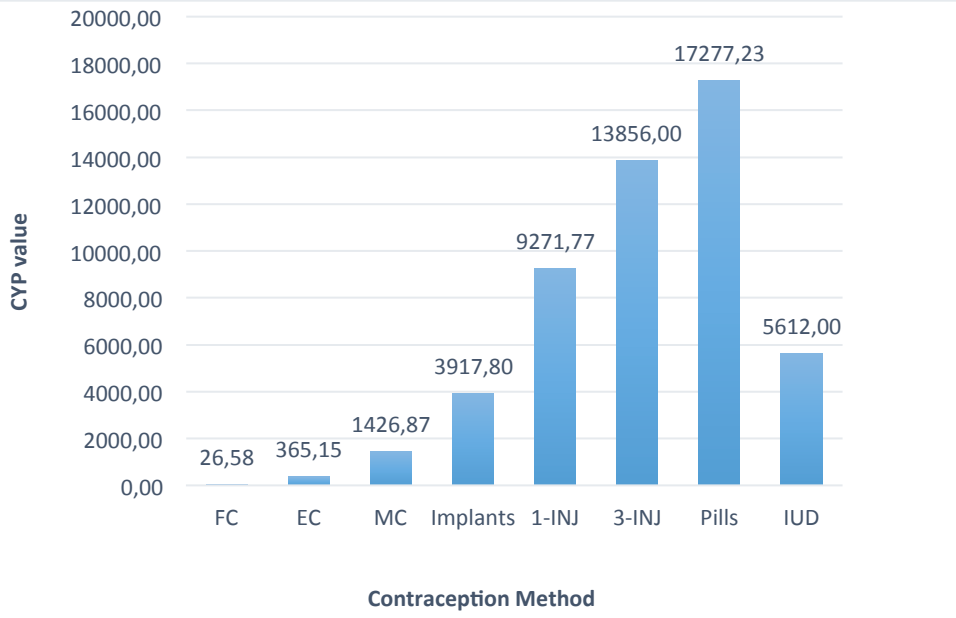

Figure 10 - CYP Contribution

4.5. Sensitivity Analysis

The main inputs for the sensitivity analysis are selected as the unit cost of commodities, the percentage of subsidy provided by the franchisor to franchisees and the number of commodities and services provided by the franchisees in a month. These inputs also represent the inputs that can be altered by the franchisees and franchisor (number of commodities and the percentage of subsidy) or the market conditions (unit cost of commodities). For each of the variables an upper bound and a lower bound are determined based on the maximum and minimum values that are possible for the inputs. These values are shown in Table 10.

Table 10. Sensitivity Analysis Bounds

Input	*Lower Bound*	*Upper Bound*
# of commodities distributed monthly	50% less than current value	50% more than current value
Subsidy Level (%)	No subsidy	Full subsidy
Unit cost of commodities	Minimum level observed	Maximum level observed

Different commodities have different demand levels and service levels. It is seen that among the family planning services offered, implants have the lowest share whereas oral contraceptives have the highest share among sales. The difference between the shares of different contraception methods could be due to many reasons as preference of clients favoring short-term methods, the lack of knowledge, the profitability for the franchisor or the affordability for the customer. These reasons will be discussed in Chapter 5. Because of the differences of market share for different methods, the lower and upper bound of number of commodities distributed is determined by a simple percentage change in the amount, rather than assigning a fixed increase or decrease.

The subsidy level that PSI provides to its franchisees changes according to the product. Therefore, the lower bound for the subsidy level provided is determined as the lowest subsidy provided to any product which is 41% subsidized price over the procurement cost of PSI. In order to see the difference between extremes, the upper bound is determined as full subsidy, as if PSI is operating its franchisees with the methods of public health sector. To discover the range of the impact, the scenario of no subsidy is also depicted in the scenarios.

Finally for the unit cost of commodities, the lower and upper bound of units costs for all of the commodities are determined by the observed lowest and highest unit costs for the year 2009. The information is obtained from UNFPA with the source of funding, number of commodities and the total cost of these commodities in Myanmar. For the products that this information was not made available, sensible values were chosen according to the cost values from previous years and the trend in the cost change among the years. As a result, three scenarios are generated to observe the impact in the change of three main inputs. The tables for the scenario analysis can be seen in Appendix B. In this chapter, to summarize the findings, the graphs will be presented depicting the extent of change in the values of inputs and the change in the output that are seen in Figure 11, Figure 12 and Figure 13.

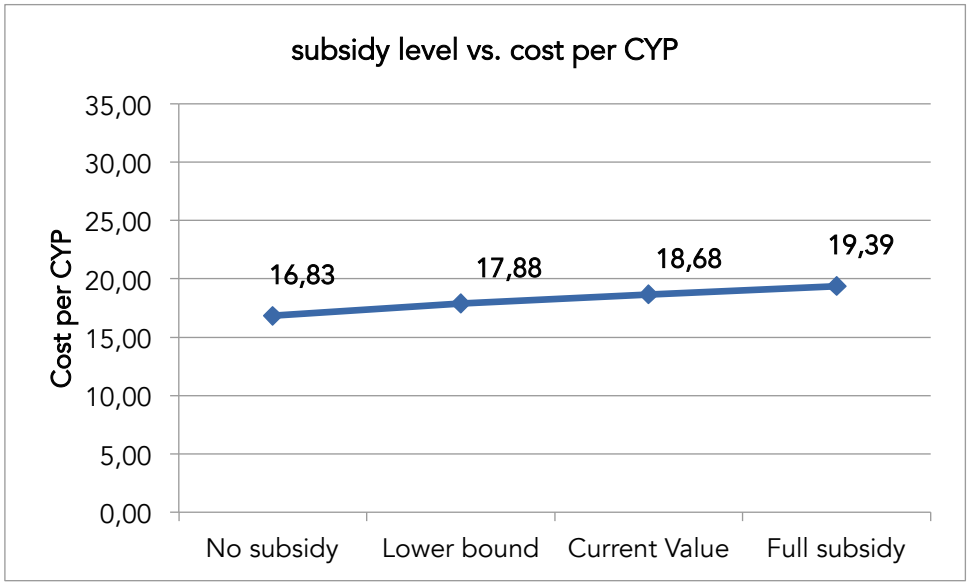

Figure 11 - Subsidy level vs cost per CYP

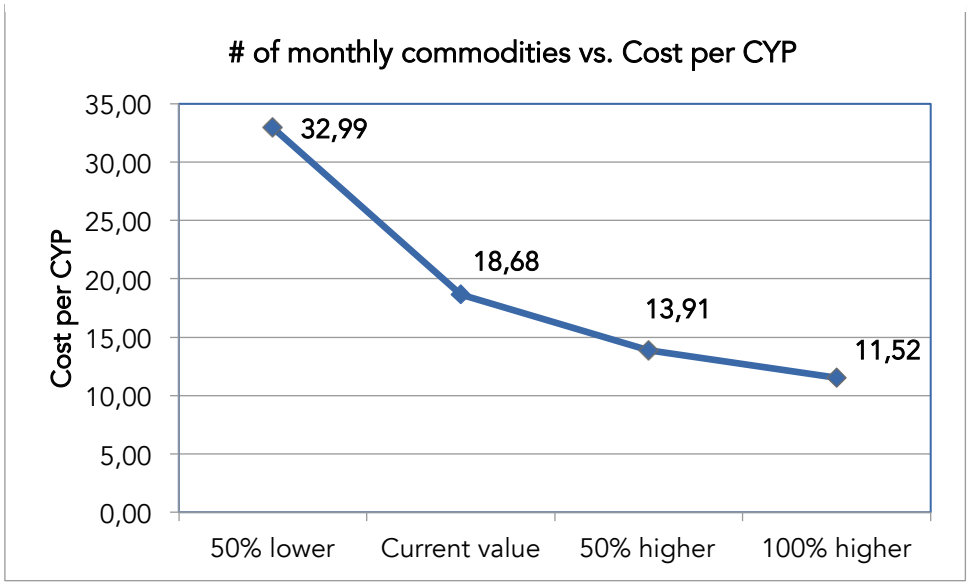

Figure 12 - # of monthly commodities vs. cost per CYP

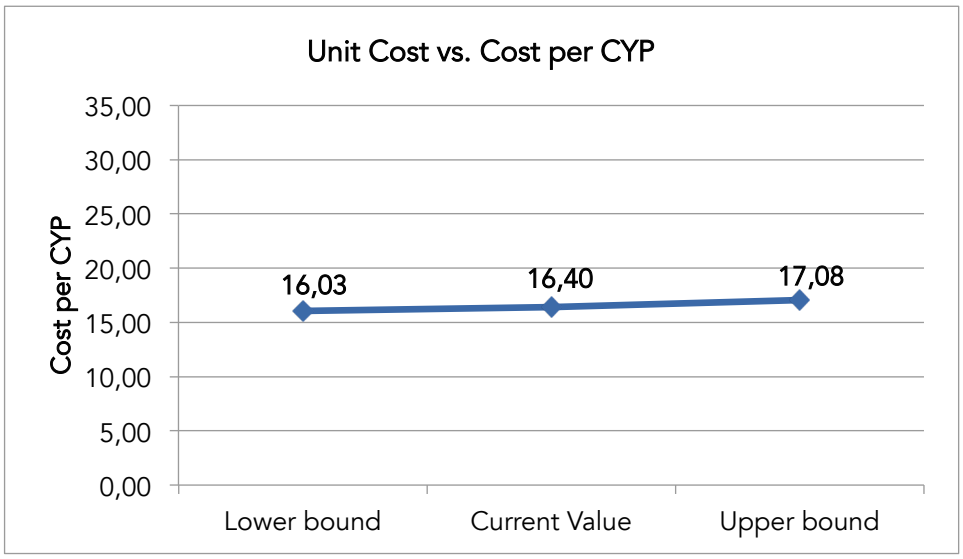

Figure 13 - unit cost vs. cost per CYP

The current value of cost per CYP is depicted according to the first allocation scenario which is 18,68 $ per CYP. All of the graphs are in the same scale in order to show the extent of difference in the cost per CYP value according to the lower, current and upper bound values for the input variables. It can be seen that the most important factor on the cost per CYP is the number of commodities provided by the franchisees. Number of commodities is the key input for the cost effectiveness model and the CYP metric is directly affected from the changes. It can be observed that a 50% higher amount of commodities decreases the cost per CYP ratio from 18.68$ to 13.91$. It is also important to notice that despite the increase in the number of commodities distributed brings higher procurement and higher profit for the providers, it still causes an decrease in the cost per CYP ratio.

Based on the CE model presented in this study, it is seen that, the relation between the subsidy levels and the outcome cost per CYP is quite linear. With the costs taken into account in this study, the difference between the scenario of "no subsidies provided" and "100% subsidy provided" is not changing the cost per CYP significantly. However, again, it is important to notice that, the increase in the percentage of subsidy provided is causing an increase in the outcome ratio. Therefore, it can be concluded that, from the franchisor's perspective of CEA, the effect of subsidy is not very significant and the increase affects the outcome negatively. Of course, the assumption made here is the fact that subsidy level do not have an impact of the procurement patterns of the franchisees. Meaning that, franchisees do not change the amount of commodities they procure and sell based on the subsidies provided to them, which can be the case in real life. However, for this analysis, the providers are considered as they are making their procurement decisions based on what is needed from the clients.

Finally, in Figure 13, the relation between the unit cost values and the cost per CYP outcome is shown. As expected, the upper bound of the unit costs for all of the products has the highest cost per CYP. However, the impact is not as significant as the impact of number of commodities provided. Again, the unit costs of the products can impact the decisions of franchisees and the franchisor since it is directly related to their procurement costs. The initiatives to stabilize the prices of contraceptives are still in progress. For instance with a recent endeavor, in the year 2013, the international price of implants were lowered to 8.5$ by the donors (Reproductive Health Supplies Coalition, 2016).

4.6. Affordability and Cost Effectiveness Comparison

After the presentation of cost effectiveness ratio, marginal cost of one unit of CYP per method and the sensitivity analysis, in this section, the main goal is to compare the CER of PSI Myanmar's health franchising activities with other similar interventions in the developing world to check its performance. Firstly, the affordability of the program will be represented according to a widely used threshold determined by Harvey (1994). According to the analysis of 25 social marketing programs, it is concluded that for a social marketing program to be affordable, the price of one-year supply of contraceptives should be maximum 1 percent of the per capita Gross National Income (GNI) of the country that the program is conducted in (Harvey, 1994).

Secondly, a comparison of the cost per CYP value presented in Section 4.4. Cost-effectiveness ratio and Marginal Cost, will be conducted with a review of results from previous studies conducted for

programs with similar characteristics. Being a common measure for representing the effectiveness of family planning interventions, CYP and the calculation of cost per CYP allows comparison. However, it should be noted that the cost effectiveness thresholds that will be presented here serve for presenting a reference point and explore where health franchising stands in the wide picture of family planning interventions. It is known that the effectiveness of family planning interventions is highly context dependent and not all the studies include the same costing methods. The scope, the coverage and the services provided by the programs differ. Furthermore, it should be taken into account that the studies that will be presented here for comparison are from different countries. Nevertheless, because of the lack of comparative studies regarding health franchising in reproductive health in literature, the comparison that is presented here will still be valuable for discovering the context of cost effectiveness for health franchising in sexual reproductive health services.

4.6.1. Affordability

According to the guideline presented by Harvey (1994) and still used as a threshold to represent the affordability of family planning programs, the prices of one year supply of contraception commodities by a contraception program should not exceed 1% of the per capita GNI of Myanmar for the year 2009. The GNI of Myanmar for the year 2009 is 630 in current US dollars (The World Bank, 2017). According to the guidelines, the affordability level for 1 year of contraception supplies cannot exceed 6,3$ in current US dollars. The calculation is made for the short-term contraception methods that the program is providing, namely: 3-month injectables, 1-month injectables, male condoms, female condoms, oral contraceptives and emergency contraceptives. The value of one year protection is found with the help of CYP conversion factor for each method and is multiplied by the corresponding selling price of the commoditiy. The prices of commodities are inflated with the corresponding inflation factor to represent the prices in current dollars. The result is presented in Figure 14.

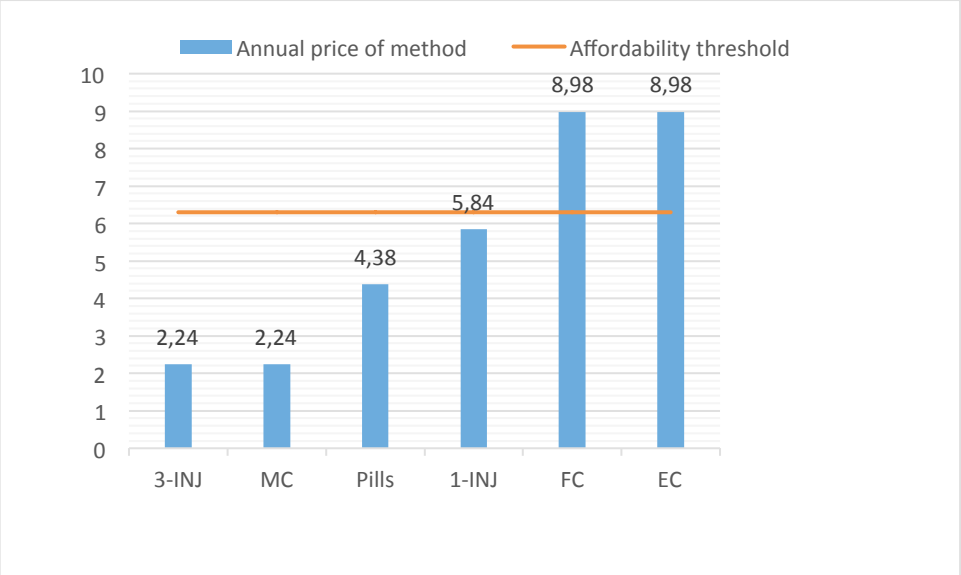

Figure 14 - Affordability

As seen, except female condoms and emergency contraceptives, the short-term contraception methods are below the affordability limit according to the affordability guideline presented by Harvey (1994).

For one-year protection, the cheapest method for the clients is 3-month injectables and male condoms, whereas the most expensive ones are the female condoms and emergency contraceptives.

4.6.2. Comparison of cost per CYP

The cost per CYP calculated for PSI Myanmar represented in the value of current dollars is 21,31$ in the first scenario of indirect cost allocation and 13,30$ for the second scenario of indirect cost allocation. In Table 11, comparable programs are shown with the information of the following: country of intervention, the year, costs included, services provided and adjusted cost per CYP values. Taking the maximum amount into account, the cost per CYP estimate found in this thesis study is in the range of the cost per CYP ratio found for community based distribution integrated with clinical services in Myanmar (22,72$-30,9$ cost per CYP) (International Rescue Committee, 2015). Additionally, the cost per CYP value for PSI Myanmar is also within the limits of previous estimations of community-based distribution integrated with clinical services in Asia (26.80$ cost per CYP) (Levine et al., 2001). In general, community based distribution is found to be cheaper than the community based distribution integrated with clinical services. This result can be related to the differences in the unit costs of the commodities since the short term non-clinical methods have lower unit costs than the long term contraception methods. Moreover, the fact that clinical services require more resources as a clinic and necessary equipment to perform the procedure could be a factor in the higher costs.

Taking a closer look, it can be concluded that health franchising stands in between the community distribution programs with clinical services and social marketing both in costs and in the business model. The difference between the community based distribution and social marketing is the fact that social marketing focuses on the informed user that can receive the services and commodities in a subsidized price without prescription through existing commercial providers. However, community based distribution aims to reach the uninformed user and emphasizes the education and counseling given to the patients who seek care (World Health Organization, 1995). Health franchising aims to utilize the existing clinics by both providing accessibility targeting the informed user as social marketing while also making sure the clients seeking care from the clinics receive the proper counseling and education about family planning. However, community based distributions are generally conducted by NGOs in the rural areas for the patients seeking care from the low quintiles which makes the profit earned by the providers less than the health franchisees due to low prices of services.

4.7. Conclusion

In this chapter, the cost effectiveness analysis of a health-franchising program focusing on sexual reproductive health and family planning services is presented based on the case of PSI Myanmar. Firstly the general steps of CEA are defined in the context of PSI Myanmar and the assumptions behind the cost calculations are presented. The effectiveness of the program and the measure of CYP is explained. Thereafter, the total costs and the cost effectiveness ratio shown in terms of cost per CYP. Following the exploration of main result, the marginal cost calculation, affordability level,

sensitivity analysis and comparison of this estimated ratio to related thresholds from previous studies is presented. The main findings suggest that, the cost effectiveness ratio of PSI Myanmar is found to be in line with the previously estimated cost per output values for comparable programs. The most important input affecting the cost per CYP estimated for the program is the number of monthly services provided by the franchisees, which is an input that can be altered by the franchisor and franchisees with the improvement of key aspects affecting the service value of the program. With regards to the marginal cost, among the services provided, female condoms are found to be the most expensive method to create one unit of CYP. The top three methods that are contributing the most to the CYP outcome of the program are IUDs, pills and 3-month injectables respectively, with IUD having a large difference with the rest, representing the method that contributes the most. Despite their high unit price, long-term methods are not performing poorly with regards to the marginal cost. Except the emergency contraceptive and the female condoms, all other short-term contraception methods provided by the program are within the affordability limits based on the 1% GNI threshold that is commonly used.

Table 11 - Comparative programs

Type of Delivery	Country	Source	Year	Services Provided	Costs Taken into Account	Cost per CYP ($)[a]	Cost per CYP adjusted [b]
Community Based Distribution	Kenya Sri Lanka Guetemala Bangladesh Nigeria	(Huber & Harvey, 1989)	1984	Pills and condoms	Program costs	14,00	27,63
	Indonesia Zimbabwe Mexico Eygpt Kenya	(Barberis & Harvey, 1997)	1991-1992	Pills and condoms	Procurement cost, personnel cost, incentives, capital costs (where relevant), provision of services.	9,93	17,84
	Zimbabwe	(Askew et al., 2001)	1998	Pills and condoms	Procurement costs, operational costs, personnel costs, training costs, transportation costs	16,61	24,94
	Ethiopia	(Prata et al., 2016)	2011	Injectable Contraceptives	Cost of time for CHW, procurement costs, training costs, commodity resupply costs, administrative costs	17,91	19,49
Community Based Distribution + Clinical Services	Kenya Thailand Bangladesh Mexico	(Huber & Harvey, 1989)	1984	IUDs, injectables, pills, condoms	Program costs	9,00	15,79
	Bangladesh Nigeria Mexico Brazil Morocco	(Barberis & Harvey, 1997)	1991-1992	IUDs, injectables, pills, condoms	Procurement cost, personnel cost, incentives, capital costs (where relevant), provision of services.	14,00	25,16
	Pakistan	(Abbas, Khan, & Khan, 2013)	2006	IUDs, injectables, pills, condoms	Personnel costs, procurement costs, superrvision costs, administration costs	25,00	30,35

Zambia	(Neukom, Chilambwe, Mkandawire, Mbewe, & Hubacher, 2011)	2009	Implants and IUDs	Headquarter staff salaries, incentives, IEC activities, training costs, monitoring costs, travel costs, equipment costs, procurement costs	13,00	14,83
Myanmar	(International Rescue Committee, 2015)	2015	Oral Contraceptive Pills,injections, IUDs, vasectomy, emergency contaception, female and male condoms	Training costs, IEC, office rent, travel costs, local and international staff, program supplies	22-30	22,72-30,9

a. The cost per CYP depicted in the dollars of the year of analysis.
b. The cost per CYP inflated and depicted in current dollars.

5. Discussion and Evaluation

This chapter consists of the interpretation of the main findings of this thesis study. The findings are three folded, respectively, findings from literature review, findings from the analysis (see Chapter 4) and the findings from the interviews conducted. Prior to the interpretation of CEA results, the findings during the analysis process are presented. After that, the results of the CEA are elaborated with links to the literature and interviews. Following the interpretation of the analysis, the findings from the interviews are explained with links to the literature. The integration of both the interviews and the CEA outcomes will be the main source of practical and further research recommendations.

5.1. Interpretation of CEA Process and Results

In this section, both the findings during the CEA process and the results found from the analysis will be presented and linked to both literature and interviews. The findings here will be discussed in the recommendations section.

5.1.1. Findings from the CEA Process

Because it is not a widely explored area by researchers and the research is mostly segregated to either analyzing only impact or cost, through the process, there were some findings related to the methodology of CEA for health franchising. The first remark is about the challenges of cost allocation to specific health areas in health franchising. As explained, health-franchising programs consist of many health services in an integrated package, delivered by the assigned clinic. However, it is seen from both the interviews (see Appendix C) and from this study that, because the indirect costs such as monitoring, training and the resupply of commodities is done in a single session and for all the clinics, it is challenging to assign costs for one specific area of service such as malaria or reproductive health. This challenge is also recognized by the program managers and seen as a reason for hesitation to conduct cost effectiveness analysis for health franchising programs as frequent as it should be done.

Secondly, there is a challenge arising when making the decision of choosing a perspective for the cost analysis. For both social marketing and community based distribution programs, literature shows that the studies adopt the perspective of the program, which means only taking into account the cost to make the program possible. However, there occurs a confusion when health-franchising programs have benefits for the society itself in economic terms, because of the creation of additional income for the members of the society. This confusion is also contributed by the fact that the goal of health franchising programs is to generate social benefits. While the incentives for the providers are a cost for the provider, it actually constitutes a benefit for the members of the society that are recruited under the health-franchising network. Another aspect that is not taken into account is the fact that the costs incurred by the society could be lower compared to public services because health franchises tend to be located in places closer to neighborhoods for the peri-urban areas.

The final challenge that is found when conducting the analysis that could be a source of guidance for future cost effectiveness studies, is the lack of comparative studies with the public sector. During the literature review of this study, the lack of comparative studies is highlighted. Also supported by two of

the interviewees, there is a challenge when conducting CEA studies compared to the public sector because of all the already existing facilities that governments have and the differences in the methods of costing. Unless real data is collected on all the scenarios, the comparison of family planning intervention outcomes remains a challenge that has to be addressed by the cost analysts of SRH health interventions.

The challenges are summarized as follows:

- Allocation of indirect costs in an integrated health-franchising program.
- Differentiating the costs to the franchisor and the impact to the society.
- Different methods of costing among the CEA of public sector and the limits to the comparability of SRH health interventions.

5.1.2. Interpretation of CEA Results

This section is dedicated to the interpretation of the results presented in Chapter 4. The findings will be explained in three sub sections, namely: conclusions of the marginal cost calculation, conclusions of the sensitivity analysis and conclusions of the cost effectiveness ratio comparison regarding recognized thresholds.

5.1.2.1. Interpretation of the marginal cost calculation

High marginal cost of female condoms

The first outcome of the marginal cost calculation is the high marginal cost of female condoms compared to the other contraception methods, especially the male condoms. This is the outcome when all assigned indirect costs such as travelling and restocking of the commodities are constant for all the methods, since the resupply of all commodities is conducted once a month. Therefore, the high marginal cost outcome of female condom is directly related to the high unit cost of the commodity compared to its ability to generate CYP units. The conclusion that is shown here is in line with previous studies on the effectiveness of the female condom. The reason behind the much higher unit cost effectiveness of female condoms is stated as the high cost of raw material, more advanced manufacturing technology and low global volume of sales compared to the male condom (Warren & Philpott, 2003). Female condoms have found to be much less cost-effective than male condoms when provided by social marketing programs or public sector channels (Marseille & Kahn, 2008). It is concluded in the aforementioned study that, in the markets where there is an unmet need for male condoms, it is wiser to encourage the use of male condoms rather than the female condoms, due to the high difference in price (Marseille & Kahn, 2008).

However, it is important to note that the comparison of cost effectiveness between the female condom and the male condom is more complex than just the unit cost difference. There are unquantifiable benefits of using the female condom, especially for specific target groups such as sex workers or people with multiple partners who perform risky sexual behavior (Warren & Philpott, 2003). In Section 4.6.1. Affordability, it is shown that female condoms are above the affordability limit of the care seekers in Myanmar. Therefore, it is concluded that, the promotion of female condoms for PSI Myanmar and health franchising in general, is not as cost-effective as male condoms. The decision of

promoting the use of female condoms depends highly on the target population that the franchisees are providing for.

Long-term methods vs. short-term methods

As discussed in Chapter 4, there are differences in the unit prices and selling prices of long term and short-term contraception methods. Especially implants, with a unit cost of approximately 25$ in 2009, is the most expensive commodity that PSI Myanmar is providing. However, it is seen that, the effectiveness of implants compared to female condoms is still higher and comparable to short-term methods as 1-month injectables. This is due to the fact that implants provide long term and efficient protection compared to other methods. Another important point is the marginal cost of IUDs. IUDs have low unit costs as a long-term contraception method and it seems effective to promote the use of IUDs. It also seems as the incentive mechanism for the IUD insertion is working for this method, judging from its effectiveness in the marginal costs.

In general, long-term methods are provided less than the short-term methods, which is a factor that explains their low contribution of CYP generated by the program. This can be due to many reasons, however, since the health franchising programs tend to be demand driven, the preferences of the society is highly linked to types of services that these programs are providing. According to the most recent Demographic Health Survey conducted in Myanmar, it is seen that long term methods as implants and IUDs are not very preferred by the target population of women aged 15-49 (Ministry of Health and Sports (MoHS) and ICF, 2017). On the other hand, when properly incentivized and the proper clinical conditions are assured preventing wrong procedures, long term contraception methods prove to be highly effective. The study conducted by (Buckel et al., 2012) verifies the results of previous studies stating that the long term contraception has 20 times lower failure rate compared to short term methods such as pills and vaginal rings, among a selected sample. Moreover, when calculating the cost for one year, the short-term methods could seem more cheaper, however, if the costs are calculated for 4-5 years (protection of IUD and implants) and the less failure rate is taken into account, the comparison between long-term and short-term methods could be more fair.

5.1.2.2. Interpretation of the sensitivity analysis

According to the previously presented results of the sensitivity analysis (see Section 4.5. Sensitivity Analysis), the most influential input in the cost per CYP outcome is found to be the number of services provided. The difference between the cost per CYP value between 50% lower services of each type of method and the current value of calculation is very high, respectively, 32,99$ and 18,68$ cost per CYP. This result is in line with the previous study conducted in Tigray, Ethiopia of a community-based distribution program that is providing injectables. The number of monthly commodities distributed per community health worker is found to be the most important factor on the cost per CYP for this study compared to commodity cost per injection and number of community healthcare workers (Prata et al., 2016). The study concludes that if the number of monthly injections provided by the CHWs is doubled, the cost per CYP of the whole program can almost be halved. The findings of this study suggest the same. Although operations of PSI Myanmar consists of many

contraception methods, if all of the monthly commodities distributed are doubled, the cost per CYP of the program reaches 11,52$ from 18,68$.

On the other hand, the subsidy level does not cause a significant change in the cost per CYP. When the value of subsidy percentage is changed from no subsidy to full subsidy, the cost per CYP increases from 16,83$ to 19,39$. However, the subsidy level in the cost model presented in this study only affects the profit of the franchisees, which increases the program costs for the provider. There can be other implications of an increased subsidy level, such as, more providers joining to the network appealed by the low procurement costs of commodities and in return providing more services which would affect the CYP level of the program positively. It is known that the ability of providing cheaper commodities to the community due to subsidized prices, is a motivation for the providers to join the health franchising network (O'Connell et al., 2011). However, the correlation between these two inputs is unknown, therefore it is excluded from the analysis.

The last input that was analyzed for the sensitivity analysis is the unit cost of the commodities. The unit cost is determined by the amount of commodities that the donors are purchasing for the program and the international costs determined for the commodities. Therefore this input is not in the control of the franchisor or franchisees. However, it is still interesting to see the impact on the cost per CYP. Although, lower unit costs decrease the procurement costs that PSI Myanmar is incurring, it is increasing the profit that providers are making out of the program, which is a cost to the franchisor. The relationship between the costs to franchisor and profit to franchisees, the total money flow, is depicted well with the change in the unit costs. There is still a positive relationship between the cost per CYP and the unit cost of commodities, the higher the cost, the higher the cost per CYP and the lower the estimated cost effectiveness of the program. There are attempts from the international donors to lower the prices of long term contraception, especially implants. The price of implants was decreased to a fixed price of 8,5$ from 25$ in the calendar year 2011, which increased the global demand (Reproductive Health Supplies Coalition, 2016). This change is incorporated in the lower bound unit cost scenario for the commodities depicted in Figure 13. Again, when the unit costs change, there may be other consequences that are undermined with the cost model presented in this study. The unit cost decrease with the long-term contraceptive methods can increase the demand for these products, leading to a decrease in selling prices, an increased use, and eventually leading to more CYPs provided by the program.

5.1.2.3. Interpretation of the cost effectiveness ratio comparison

The findings suggest that the estimated cost per CYP for PSI Myanmar SRH operations is 21,31$ in current dollars. In order to understand where this value stands among similar health service innovations in the developing world, the cost effectiveness outcome is compared with findings from similar programs. To allow a proper comparison, the programs which are comparable to health franchising were included, such as social marketing programs and community-based distribution programs. It is especially challenging to make a comparison of the outcome with the family planning services of the public sector in Myanmar, because of the even higher difference between the methods of cost effectiveness analysis. However, health franchisees operate in the private sector of Myanmar or

any other developing country for that matter. The goal of the network is not to replace or undermine the role of public health services, but to complement it, and serve the high proportion of community who are seeking help from the private sector. Therefore, it is found appropriate to position the cost effectiveness ratio of health franchising services among similar sexual reproductive health interventions that are not exclusively utilizing the government resources.

It is not always suitable to compare the cost effectiveness ratios across studies and countries, because of the different costing methods and resources used (Janowitz & Bratt, 1992). For instance, some of the programs might not include the cost of IEC activities or training costs. Another difference among the programs, that should be taken into account when making the comparison, is the types of commodities that are distributed, since for the social marketing programs, long term contraception methods are not provided. These taken into account, the appropriate comparison of the cost per CYP ratio estimated in this study would be with the programs in Pakistan (30,35$) and Myanmar (22,72$-30,9$) for the following reasons:
Similarity in program characteristics: Both of the programs are providing training, monitoring and ensured supply of commodities for the network of providers.
Similarity in the services and goods provided: Both of the programs in Pakistan and Myanmar provide pills, condoms, IUDs and injectables. Note that because of the regulations regarding implants, they are not provided as a part of the program in Myanmar.
Similarity in costs included: Both of the programs take into account the program related costs into account such as the costs of training, incentives, the costs for resupply of goods and unit costs of commodities. Note that for Myanmar, without the support costs from the headquarters for operations as finance, the cost per CYP value is 22,72$.

According to this comparison, PSI Myanmar operations are more cost effective than the Lady Health Workers (LHW) program in Pakistan and the International Rescue Committee (IRC) program in Myanmar. Additionally, the cost per CYP value for PSI Myanmar is also within the limits of previous estimations of community-based distribution integrated with clinical services in Asia (Levine et al., 2001) which is (26.80$ cost per CYP) common used threshold to compare the cost per CYP of family planning interventions (Abbas et al., 2013; Neukom et al., 2011). As explained, in order to conclude one scenario is more cost-effective than the other, comparable scenarios are required with regards to the resources used, target population that is served and the services provided. However, the estimation made here, provides an understanding of the extent of cost effectiveness of the health franchising programs with the program executer's perspective.

5.1.3. Final Remarks on CEA Interpretation

The interpretation of the CEA results can be summarized as follows:

- The promotion of female condoms for PSI Myanmar, is not as cost-effective as male condoms. The decision of whether or not to promote the use of female condoms, depends highly on the target population, since for some groups, it can create additional benefits compared to male condoms.

- Promotion of the long-term contraception methods can increase the cost-effectiveness of PSI Myanmar in the long term.
- The number of monthly commodities distributed is a crucial input in affecting the cost effectiveness of the operations of PSI Myanmar.
- The cost-effectiveness of the SRH services of PSI Myanmar is comparable to previously found thresholds for the similar interventions in Myanmar and it is more cost-effective compared to the integrated clinical CBD in Asia.

5.2. Interview Findings

For a clear representation, the interview findings are categorized in four main themes: accessibility, quality and equity of franchising operations, the value of health franchising, impact assessment and policy. When necessary, direct quotes are given to support the arguments. The interview transcripts and notes can be found under Appendix C.

5.2.1. Accessibility, quality and equity of health franchising operations

Health franchising model has the goal of providing accessibility, quality and equity in the regions of operation. However, the findings on these criteria are controversial in literature. Especially on the accessibility and equity, there are concerns raised whether the health franchises are achieving their promises (Ravindran, 2010). From the interviews, there are insights obtained both supporting the concerns from previous studies and raising new arguments that are interesting to consider when evaluating the performance of health franchising programs. With regards to the concept of equity, the interviews indeed confirm the argument that health franchises are not extending the coverage to the rural areas. Especially in Myanmar, because the franchises are fractional, they are located in urban and peri-urban areas, because of the reluctance of existing private clinics to operate in the rural areas where they perceive less profit.

"Because we are working with existing private providers, franchising is almost always going to be in urban and peri-urban places. So that is a fact that we don't deny. But urban health is a big challenge. I know that urban poverty is different from rural poverty but there are significant issues there that the franchising network is well positioned to solve."
(Daniel Crapper, PSI Myanmar, Deputy Manager)

Even the operations are extended to the rural areas, there is an argument that is raised against the quality, questioning whether the services that are provided are efficiently monitored and the quality is assured in these areas (Nijmeijer et al., 2014). One of the experts mentions the lack of supervision, the lack of referrals to more equipped clinics and transportation issues that occur in the rural areas in certain seasons.

There are also questions raised on the measurement of accessibility. Especially in urban areas, because the people seeking for care are more mobile and have options to choose, it is not very likely to be sure if the target group of the program is being accessed or to identify who is actually using the services.

"In an urban setting it is different. In an urban setting people are free to choose among quite a lot of options such as private and government and other types of providers. Distance doesn't matter that much and people are much more mobile. It is hard to track new demand in this setting because it is not known if any new people are reached. It can also just be the same person switching from one station to the other."

(Jos Dusseljee, Cordaid, Senior Expert Health systems strengthening)

Therefore, the studies that are analyzing the accessibility of health franchising services should be considered with extra care when interpreting the results.

5.2.2. The value of health franchising

Related to what has been explained in the previous section, the adding value of health franchising is a topic that is not explored deeply in literature. During the interviews, as well as verification of the arguments in the literature, new insights have been provided that could be taken into account when evaluating health franchising programs and their possible benefits. Firstly, the fact that health franchising assures minimum stock-outs of contraceptive commodities enables the patients to have informed choice about their method of contraception. Government facilities are known to have stock-outs, in fact, it is considered as one of the weakest points of health services of public health facilities.

"Supply chain is better with health franchisors and the peripheral health franchise has a financial incentive to prevent stock-outs."

(Christina Vries, Cordaid, Public Health Expert and women's health innovation advisor)

Another adding value that the interviewees point out is the safe environment health franchises are offering for their clients with regards to prejudices against individuals based on their age, their sexual preference or based on a cultural prejudice they might have. In developing countries, concepts as sexual intercourse before marriage or at a young age are often considered as taboo. Creating a safe space for specific groups that are seeking help is therefore especially significant and a factor that should be taken into account when evaluating the accessibility of health franchising services.

"We now have 34 providers who are offering free ART treatment in their clinics for people living with HIV. We have succeeded to identify that there are clinics completely comfortable working with gay men. They are willing and happy to offer specific targeted, either free or cheap services to extremely vulnerable groups. So we are able to identify the right places to make effective referrals."

(Daniel Crapper, PSI Myanmar, Deputy Manager)

The training and constant monitoring that the health franchises receive is also considered to play a role in the quality improvement of these programs. Noted by one of the interviewees, public sector providers are often trained to provide curative services rather than preventative services, as it is the most necessary with sexual reproductive health. Counseling on the services provided is a major part of health franchising in sexual reproductive health activities and it is also a measure of impact for the services provided. Furthermore, the fact that there is a lot of hierarchy involved with public health

services, the process of fixing an unexpected problem as an equipment failure or stock-out of commodities evolves slower than the private health services.

5.2.3. Impact Assessment

There are questions raised about the impact assessment from the interviewees from both organizations; PSI and Cordaid. The main concern is the challenge of capturing the real health impact of family planning interventions with any metric. In this sense, CYP is also not considered as a metric that is actually measuring the impact. Rather than actual use, CYP shows the number of people reached with the health franchising services. However, it is not possible to know if the patient actually uses the contraception commodity after she is prescribed. The concept of traceability improves with the long-term contraceptives as injectables, implants or IUDs, because there exists actual record in the franchised clinics that the service is provided to the patient. Another point is that it is easy to track the impact of contraceptives on HIV, however, it is not that easy to track it on the pregnancies averted. This is explained by one interviewee as the reluctance of people to reveal information about these topics and their habits to anonymously purchase contraceptives from drug stores. Another concern that is mentioned in the article by Ravindran (2010), is that when asked for feedback, the patients often tend to give positive feedback about the services provided because of cultural reasons. This situation makes it unreliable to trust only the exit interviews conducted with the patients to conclude that the quality and the impact of the services are positive.

"Cordaid also involves local community based organizations to not only verify that certain services are being used but also get feedback on the quality of services. But the feedback is mostly positive because people do not say something negative about the services they actually use. What is not measured however, is the feedback from the non-users. The health consequences we never measure, we actually measure the service delivery. I am satisfied to a point that the service is delivered but I am not fully satisfied if the needs from demand side are not fully met by the service delivery. And in PSI they always measure the impact by CYP but they never link it to actual unmet needs. It is nice to write so many reports saying that we have delivered so many services but they never link the service delivery to actual needs."

(Jos Dusseljee, Cordaid, Senior Expert Health systems strengthening)

There are other methods to measure the impact of services. For instance, the market share of the family planning services provided by the franchises compared to the private sector is a measure of impact for PSI. However, again, the market share is represented as the number of CYPs delivered, which again takes us back to the discussion about the need of a metric that is measuring the actual use.

"We tried to do an assessment of market share and we identified roughly while the Sun Network compromises about between 15-20% of all providers who are offering FP in the private sector in Myanmar, these 15% of the GPs are providing about 40% of the CYPs delivered by the private sector. So what it means is that GPs who are not part of the franchising network are significantly less interested in providing FP services. So that is a measure of the impact."

(Daniel Crapper, PSI Myanmar, Deputy Manager)

5.2.4. Policy

The policy environment that health franchising is exposed to is an important factor affecting how the delivery model is integrated to the existing health sector. In this section, additional insights from the interviewees about the policy environment of Myanmar and general insights about the role of policy makers in the context of healthcare service innovations will be elaborated.

A shared view among all the experts interviewed is the fact that governmental bodies tend to put more emphasis to public health services with regards to resources, infrastructure and funding. However, the private sector is providing more than half of the healthcare services in the developing countries in Africa and Asia.

"The funding does not flow from the ministry to the private sector in the developing world because it tends to focus on the public sector. If you look at the countries that are low on the development index, you still have a lot of very poor people, if you look at their health seeking behavior; they tend to rely often on the private sector. They perceive a higher quality, whether if there is a higher quality is another question."

(Doug Call, PSI Europe, Deputy Manager)

Another view related to the reluctance of the government towards private healthcare sector is the fact that the MoH in these countries assumes that the private sector receives funding anyhow. However, this is not the case. According to the statement of an interview and also literature (Ravindran, 2010), private sector is also highly dependent on the user charges. Therefore, limited money flow and poor resource allocation from government's side to the private health sector creates a constraint for the operations of the franchised clinics. MoH is in charge of the regulations for the healthcare sector, which means it can enforce some rules that can make it easier or more challenging for the private sector to provide services. An example is the context of task shifting. Task shifting in health services is defined as the action of assigning tasks to the low level health force such as community health workers or nurses rather than the high-order health force such as doctors. The goal is to prevent the burden of underutilized services that can also be provided by lower-order of health providers and letting the doctors focus on the delivery of more critical services. Task shifting has a significant role, especially in countries where there is a shortage with qualified health providers. Most of the health franchises and community level interventions involve task shifting to an extent to make services more accessible for the care-seekers. However, in some countries, the government might set certain criterion for the level of health workers to ensure the quality of clinical services.

"For example with IUD insertions, the regulations in Myanmar states that IUDs can only be inserted in a facility that is set up for birth deliveries. In Tanzania, they allowed nurses to insert IUDs. Whereas in Myanmar you need to be a gynaecologist before you can insert an IUD. So those sorts of things are creating enormous barriers. In Myanmar there is highly restricted environment for task shifting and there is huge reluctance to do task shifting."

(Daniel Crapper, PSI Myanmar, Deputy Manager)

These regulations could create barriers for health franchising programs, though; it does not mean that they are unnecessary. There are some procedures that cannot be performed by a health worker that is not properly trained. More collaboration from government's side requires assurance of a certain level of quality. Therefore, it has to be guaranteed by health franchising programs that task shifting would cause a threat against the quality of services. This is especially the case for clinical services as IUD and implants where there are severe consequences if any complication occurs during the procedure.

5.2.5. Final Remarks on Interview Findings

In conclusion, the main insights from the interviews were explained in four main categories. The main findings that will contribute to the recommendations are summarized below as follows:

- Health franchises are not expanding the coverage of health services in the rural areas since they tend to focus on the urban and peri-urban areas.
- The quality and monitoring of the services might not always be ideal, especially in rural areas.
- The measurement of accessibility might not be as clear as it is reflected, because of the uncertainty of who exactly can access the services in the urban areas.
- Health franchises are answering the need of the care-seekers by decreasing stock-outs and increasing the choices of contraception offered.
- In sexual reproductive health, health franchises are perceived to create a safe environment with less prejudice in sensitive issues and provide targeted services for extra vulnerable groups.
- Especially in sexual reproductive health the training in preventative health has significant importance. Compared to public sector, health franchises and private sector in general, are perceived to be more proficient in family planning counseling.
- In general with family planning interventions, the context of impact is tricky. The metrics that are currently used to capture the impact of health franchising services are not representing the actual use, therefore, the actual impact.
- It is not very reliable to measure the impact based on the feedbacks gathered from patients during exit interviews, due to their reluctance to provide negative feedback.
- The MoH in developing countries tends adopt an indifferent or sometimes discriminating attitude towards the private sector when it comes to resource allocation. Certain regulations of MoH, for instance the limitations on task shifting, can create barriers for health franchising operations.

5.3. Contextual Discussion: Beyond the numbers

So far, this chapter incorporated interpretation of the findings from the analysis and findings from four expert interviews. The interviews extended the understanding of health franchising network and helped to explore the reasoning of the results of the analysis. Building on these findings, in this section, the contextual factors that can affect the success of health franchising in the developing world will be discussed.

International NGOs such as PSI and Marie Stopes International have been in the healthcare sector of developing countries for many years. There are reasons why these international NGOs are more active in the developing world and constantly extending their operations. In the developing world, as with many other public services that aim to improve welfare on the population level, public health services lack the operational resources and necessary expertise to cover the needs of the population that grows unplanned. Public health services suffer from limited availability of equipment, trained health workers and medications (Basu, Andrews, Kishore, Panjabi, & Stuckler, 2012). Although public sector may offer the most affordable health services in terms of out of pocket payments (Basu et al., 2012), still, a good share of the society still prefer to consult private sector providers. This suggests that, the people in these regions perceive a higher quality of private health services and is not hesitant to spend more money when it is a health matter. Likewise, private clinicians also find it appealing to join the franchising networks of international NGOs.

There can be many contextual factors, leading to the success of this business model in the health sector of developing countries. First factor can be identified as the creation of a brand that people perceive as safe and good quality. Most of the international NGOs create a local brand in the countries they are operating and conduct social marketing to promote the brand. It can be argued that there is a relation between the confidence of providers and quality perception of the patients, preferring branded health services. Studies show that in addition to financial incentives, health providers also value non-financial incentives such as increased self-esteem, community trust, respect and recognition (Kok et al., 2015).

Another success factor is the incentive mechanism that is based on performance with the health franchising. It is also proven within the PSI Myanmar program that the uptake of certain contraception methods increases when franchisees are given incentives. The fact that incentives and salaries of the workers are given regularly is a motivating factor for the franchisees, increasing their performance to serve more (Kok et al., 2015). However, incentives can also have negative ethical implications, triggering the providers to supply the materials based on their earnings.

Health franchising also answers the need for a better managerial assistance in the developing context. An international NGO assigns a capable team to monitor the quality and any lacking material to ensure a standardized service. Additionally, clinics that are joining to the network as franchisees agree to certain guidelines and are withdrawn from the program if there are any violations.

Another important gap that health franchising fills in the developing context is the robust supply chain it offers to the franchisees. In developing countries, resupply of commodities or fixing an operational problem might take a very long time, delaying the course of operations. The health-franchising model ensures that the matters of maintenance or restock are done regularly and fast. The materials are branded and it is made sure that they are not expired and in stock. This is also important for making commodities available in remote areas. Related to this, by offering various methods of contraception, franchisees do not limit the choices of the client. However, when the distribution of methods is

compared with the local preferences in the region, findings show that the supply of the programs is very line with what the patients usually prefer (Ministry of Health and Sports (MoHS) and ICF, 2017).

Policy related interview findings suggest that (see Section 5.2.4. Policy) because of the formation of a large network of clinicians, international NGOs can hold a lobbying power towards the policy makers. With the support of local civil organizations they can have the power of avoiding some health regulations that might hamper the operations of the network. An extreme example from Myanmar is the fact that there are franchisees that are also members of the parliament who can shape health policy related decisions.

All of the insights considered, health franchising in sexual reproductive health could be in the cost effectiveness limits in the developing context. However, this is not the only reason behind its success. There are contextual drivers that make health franchising an especially successful business model in the developing countries. These drivers both relate to institutional limitations and client perspectives in these regions. International NGOs indeed fill a gap in the health sector; however, there are still questions on whether if they are the only answer for the aforementioned problems. Their role should not be undermined however, also be carefully examined in order not to support any unnecessary hype around their function within the health sector.

6. Conclusion and Recommendations

The goal of the final chapter is to answer the research questions based on the interpretation of results and present practical and academic recommendations. The chapter is structured as follows; first, the answers for the sub research questions and the main research question will be presented with highlights from the relevant chapters. Following this, a discussion will be presented pointing out the value and contribution of this research with an emphasis on the important findings. Next, practical recommendations will be presented concerning the business model of health franchising. In addition to the practical recommendations, an "experiment blueprint" will be provided, suggesting a standard methodology of conducting cost effectiveness experiments for health franchising programs. The chapter is finalized with future research ideas and reflection of the research.

6.1. Answering the research questions

Five sub-research questions have been formulated in order to answer the following main research question throughout this thesis:

"To what extent is health franchising applied to sexual reproductive health in developing countries cost effective?"

The sub research questions will be reminded to the reader in sequence and the answers will be provided.

(1) What is the current state of health franchising in the developing world regarding its framework and perceived impact?

It is found that currently, there are 70 health franchises included in the latest Social Franchising Compendium, however it is likely that there are many more NGOs operating franchise-like services that is not included in this list. The framework can change from one health franchising network to the other, however, mostly the health franchises operate as fractional franchises, utilizing the already existing private clinics and recruiting them in the franchise network. These providers are provided with monthly trainings and monitoring of their performance and are favored by performance based incentives and subsidized prices for commodities. Health franchises can offer many types of health services, although, the most common service is sexual reproductive health and family planning. The programs are generally funded by international donors and there is cross funding among the health programs, utilizing the funding received to make all the programs sustainable offered under the network.

The operators of the franchising network, franchisors, have four main goals executing these programs in the developing world: accessibility, affordability, quality assurance and equity. The perceived impact of health franchising in the developing world is measured based on these goals. In the literature, there are conflicting conclusions on the impact of health franchising in the developing world

with regards to improving accessibility, quality and equity of sexual reproductive health and family planning services. There are limited studies conducted on the cost-effectiveness.

It seems, health franchisees are not reaching out to the rural areas. The target population is dominated by the clients who are not coming from the lowest wealth quintiles. This can be explained by the fact that health franchises are operating mostly in urban and peri-urban areas with already existing private clinics and there are not enough incentives for these clinics to operate in rural areas. The number of choices of contraception methods is increased with the assurance of continuous supply of the health franchising network, that enables informed choice for the clients that are seeking for help from the clinics. With regards to accessibility, the franchises are able to target specific vulnerable groups and make efficient referrals. The clinics under a franchising network can be guided to not approach patients with cultural prejudices and provide a safe environment for their clients about hard-to-talk topics contraceptive guidance for young people or people with more than one sexual partners. Moreover, counseling is also found to be an important characteristic of the health franchising, regarding their ability to not just aid the care-seekers who are have enough knowledge about contraception methods, but also those who have not heard about the concept. The studies conclude, based on the feedback received from the clients of these services, that the clients perceive better quality of the services once the clinic is a part of the franchising network. However, these feedbacks are mostly gathered from the exit interviews with the clients, which have the risk of being biased and not very reliable. All in all, health franchising is adding a value to the health systems of developing countries, which are mostly suffering from underutilization of resources, limited preventative healthcare knowledge and a robust supply chain of goods and services.

(2) Which indicators can be used to estimate the health outcomes of sexual reproductive health interventions?

The most common measure used to estimate the health outcomes of sexual reproductive health and family planning interventions is found to be the Couple Years Protected. There are also other indicators such as the number of unintended pregnancies averted due to contraceptive use, number of maternal deaths averted due to contraceptive use, number of unsafe abortions averted due to contraceptive use, number of additional users of modern contraception, percentage of women who were provided with information on family planning during their last visit with a health service provider and the method information index. Disability Adjusted Life Years (DALYs) averted is found to be a common measure for representing effectiveness in the studies reviewed with a recommendation from WHO. Throughout this study, another measure was found to be relevant that can be used for sexual reproductive health interventions which is, decrease in the newborn babies per fertile woman in the region franchising programs are operating. The details on the measure are further discussed in Section 6.3.2. The measure is suitable to be used in the context of an experiment, therefore, not used in this study.

(3) What are the costs taken into account for a health franchising program targeting sexual reproductive health?

For a fractional franchise health franchising network, the costs are categorized as direct and indirect costs. Capital costs are not taken into account with the validation of Deputy Manager of PSI Myanmar that there was not significant investment in building new clinics due to the pre-existing capital resources. The direct costs of a health franchising network are: procurement costs, cost of keeping the franchisees in the network and the distribution costs for commodities to the franchisees. Because the franchisees are incentivized, the cost of keeping them in the network is taken into account as the profit they make out of being a part of the network from the subsidies, incentives and the profit they make from their sales. The indirect costs are the cost of IEC materials, personnel costs on monitoring, distribution and trainings and trainings costs. Total cost is calculated as a sum of the direct and indirect costs. The direct costs constitute 56% of the total costs, most of the proportion belonging to distribution costs. Training costs and IEC activities make up for 12% of total costs. Personnel costs form 30% of the program costs for PSI Myanmar SRH operations.

(4) To what extent the outcomes of cost effectiveness analysis will be affected by the change in input variables?

The findings are that the most important input variable with regards to its impact on the cost per CYP is the number of monthly commodities distributed by the providers. With a double amount of current level of services provided, the cost per CYP for the PSI Myanmar program can be almost halved. It is important to note that the role of long term contraception methods would be significant in achieving a higher output, due to their high CYP level and the direct relation to the cost per CYP value of the program. It is seen that the percentage of subsidy provided, from no subsidy to full subsidy, does not significantly affect the cost per CYP. For the unit prices of the commodities, the affect is also not that significant, with a change from the lower and upper bound of unit costs, the cost per CYP changes from 18,28$ to 19,47$ in 2009 dollars.

(5) How does the cost effectiveness of health franchising compare to other types of sexual reproductive health interventions in the developing world?

For the comparison, among the sexual reproductive and family planning interventions in the developing world, the most comparable ones are selected: social marketing programs and community-based distributions. First, the cost per CYP value found for PSI Myanmar program is compared to the 26,80$ average cost per CYP value in current dollars for the community based distributions with integrated clinical services in Asia. For this threshold, the estimated cost per CYP ratio in this study is found to be more cost effective. Following this, the ratio is compared to two programs from Pakistan and Myanmar respectively, with similar services delivered and cost types included. The cost per CYP estimated for PSI Myanmar is again found to be within the limits of these thresholds.

Thereby, having answered all the sub-research questions, an in-depth answer to the main research question can be provided.

"To what extent is health franchising applied to sexual reproductive health in developing countries cost effective?"

Health franchising for sexual reproductive health in the setting of Myanmar has found to be in the cost-effective limits according to the comparison of affordability threshold and with previously recognized thresholds for similar interventions. However, it is challenging to conclude whether if health franchising in general in sexual reproductive health is a cost-effective strategy. Different programs can have different characteristics affecting their costs and service levels such as: the maturity of the program, the number of providers in the network, the willingness of the clients to seek care from the private sector and the policy environment among others. It can be said that, from the program perspective, with the structure of the program analyzed here, health franchising is a competitive service delivery method with regards to its cost effectiveness in the developing world.

The extent of cost effectiveness was explored with additional analysis conducted in Chapter 4 of this thesis study, with marginal cost comparison of different commodities, the contribution of different methods to the CYP generated by the program and the sensitivity analysis. Health franchising can be cost-effective, as long as, it is combining long-term and short-term methods and indirect costs are shared among these to compensate for the high unit cost of long-term methods. Health franchising can be cost-effective, as long as quality monitoring is done sufficiently to prevent costs for any non-value added activities for the operations. The steady growth of the network and the right strategy to keep the providers in the network are also important for the extent of cost effectiveness for health franchising activities. Moreover, since it is found that the most significant factor for the cost-effectiveness is the number of services delivered monthly, health franchising is cost effective, as long as the growth in the service provided is possible.

6.2. Practical Recommendations

With the integration of the insights from literature review, cost effectiveness analysis and interviews with experts, there emerged a follow-up outcome of this thesis study: practical recommendations. The goal in presenting these is to provide additional insights for the executors of these programs and identification of the areas for improvement. Recommendations are categorized into two main topics: composition of services and operations.

6.2.1. Composition of services

The composition of services refers to the services offered by the health franchisees. As a result of the analysis and with support from the interviews, it is concluded that some of the commodities offered by the health franchises are not cost effective and are not adding as much value in generating CYPs (see Section 4.4. Cost-effectiveness ratio and Marginal Cost) Female condoms are not as cost effective as male condoms and because of their low preference and presumably not as successful marketing, they

are lagging behind in delivering CYPs. When deciding in order to promote them or not, health franchises should adopt a strategic approach based on the target clients. The target population should be segmented and the contraception methods that would be especially beneficial for specific groups should be assigned to the clinics that have the record to serve these populations.

Long term contraception should be promoted better within the health franchising programs due to two reasons: the longer protection and the traceability of services. Especially among the population that is not satisfied with short-term contraception and prone to change behavior, long term contraceptives can be marketed better. Offering free removal of IUDs and implants and more counseling about the benefits of long term contraceptives can be among the activities that health franchises could pursue for a better promotion. However, it should be kept in mind that for clinical services as IUDs and implants, the quality of the clinics should be assured well. Additionally, dual protection should still be supported, since long term contraception do not protect for HIV/AIDS.

6.2.2. Operations

The incentive scheme on IUDs for PSI Myanmar has efficiently improved the marginal cost of IUDs. This scheme can also be adopted for implants as the method that has the highest unit cost and can cause hesitation from the franchisee's side to offer the service. It is suggested that the incentives to the providers should be one of the main focus of the program. The goal should be targeting the services that are low in demand and the franchisees that are low in performance. The incentives also can be managed according to what the franchisor aims to improve such as serving special groups or boosting the uptake of long-term contraception.

The quality should be a priority for the health franchisees. Most of the care seekers prefer the private clinics because of their perception of a higher quality of services than the public clinics. Health franchisor should ensure no expired commodities, sterile clinical conditions, and well-trained providers to accomplish clinical procedures. It is suggested to identify key performance indicators for quality for better monitoring. (See Section 6.3.2.) As mentioned, receiving feedback from the patients with exit interviews could lead to unreliable answers. In order to explore more the impact and actually the non-impact of services, the non-users can be targeted for their feedback. So the question to answer here would be "Why are they not using any method of contraception or why are they not using health franchising services?". Especially vulnerable groups, such as young people who are sexually active, the sex workers or people living with HIV could be approached for feedback and expectations from services.

Another recommendation for the health franchising operations is more integration with public sector officials in the matters of funding. It is known that health franchising networks are highly dependent in external funding which makes their financial sustainability questionable. More collaboration with public services, in terms of joint training of the staff, joint campaigns or voucher programs could enable the franchising network to benefit from public funding and utilization of resources.

6.3. An Experiment Blueprint

With the research presented here, it is also aimed to contribute to the existing methodology of cost effectiveness analysis experiments. It was not in the scope of this thesis to conduct an experiment. However, the findings presented from expert interviews, analysis process and literature on past experiments can be helpful to demonstrate an experiment blueprint to be used for an effective assessment of health franchising programs.

As explained in Section 2.1.3., the experiments conducted in the field remain as quasi-experiments with low validity and the methods to measure the impact are biased. To address this, the set of recommendations will include details on how to set up the experiment, costing, health impact metric used and quality measurement. The steps are listed as follows:

6.3.1. Setting up the experiment

In order to monitor the impact of the intervention on certain performance and health indicators, the most important step is setting up an experiment that minimizes the external effects. For the case of health franchising, a pre-test and post-test experimental design with experimental and control groups is suggested. This means an intervention and control area that both receive a pre-test before the intervention at t=0 and a post-test after a determined period of time at $t=t_1$.

Control and Intervention Area

As explained, in the case of a fractional franchising network, most of the clinics are located in urban or peri-urban areas. In these areas, patients are more mobile and there is more chance for them to change their healthcare service provider due to the high amount of options. The control and intervention area are defined as follows:

Control area: A township in an urban region where none of the private clinics are franchised.
Intervention area: A township in an urban region where all of the private clinics are franchised.

To allow a viable experiment, the following matters should be taken into consideration:

- *Comparable groups:* The control and intervention area should have similar characteristics regarding geography, patient demographics, population size and intake of patients from other regions.
- *Inclusion Criteria:* Inclusion criteria should be all sexual reproductive health clinics in the urban regions identified, with a comparable target population.
- *Minimum Cross Contamination:* In order to avoid confusion when measuring the health impact in the target group, the control and intervention areas should not be located close to each other where there might occur a cross contamination. In other words, the post-test results for the population of the target groups in control and intervention area should not be affected by each other. A patient in the control area should not have a high probability of accessing health services from the intervention area.
- *Target population:* The catchment area of the clinics in both control and intervention area should be recorded to have an idea on the target population characteristics and the market

share of the clinics among the current healthcare service providers at t=0. Because the experiment concerns the urban region, it is inevitable that clinics will receive visitors from either rural regions or other townships with no other choice. The proportion of these patients should be recorded with exit interviews in order to estimate the impact area.

Time horizon

There should be sufficient amount of time between the data collection for pre-test and post-test in order to capture the impact of the intervention. Therefore time horizon depends heavily on the nature of the intervention. For a malaria intervention, the negative outcome that the intervention seeks to prevent is a malaria infection. The infection shows symptoms quickly and the duration to monitor the impacts long. On the other hand, for a SRH and family planning intervention, one of the negative outcomes that the intervention seeks to prevent is an unwanted pregnancy, which puts a minimum limit of 9 months to the time horizon of the experiment, to observe any impact. The experiment cannot take too long in order not to cause complication with the business plan of the franchisor.

6.3.2. What and how to measure?

The goal of the experiment is measuring the following characteristics of franchised private health clinics: cost effectiveness, quality and accessibility. In other words, the experiment aims to find out whether there is a change when a private clinic in an urban or peri-urban area joins a health franchising network.

Cost effectiveness

As presented in this study, the main components of measuring cost effectiveness are the valuation of costs and health impact. Costs for both the control and intervention area can be calculated from the program's perspective as explained in Section 3.3.2.4. If both of the clinics are offering various integrated health services as in the example of PSI Myanmar, then, the same cost allocation technique for the joint indirect costs should be used for both the intervention and control area. A cost allocation method is needed when there is not enough information on how tasks are allocated for activities that are done for all of the services that are creating a health outcome. The allocation of joint costs can be conducted proportional to the units of DALY averted per health service offered. This allows comparability among different types of goods distributed by the clinics.

In this study, Couple Years Protected is used as a health outcome to calculate the effectiveness of a health franchising program. Although CYP is a good measure that gives an idea about the prospective impact, it involves various assumptions on the use of the commodities provided. For the experiment, a metric is preferred which is easily measured and can capture the real impact. One of the goals of a SRH health intervention is preventing unwanted pregnancies. This is indicated by the number of newborn babies per fertile woman that seeks contraception. In order to observe the impact of a SRH health franchising program on the target population, the decrease in the number of newborn babies per fertile woman from t=0 to $t=t_1$ and its comparison to the control area can be a proper measure of the impact. The metric also draws attention to any significant decrease in unmet need for family planning

among the target population of both franchised and non-franchised SRH clinics. In order to track the number of newborn babies per fertile woman, the regions that are in the clinical outreach of the clinics should be clearly defined. For this, the visitors of the clinics can be surveyed or there can be exit interviews tracking the following information: age, education level, residency (urban or rural area), knowledge of contraception, marital status, number of children (if any) and current contraception use, among others.

Quality

As explained in Section 2.1.3., the quality of health franchising programs have been measured so far with only qualitative methods. These qualitative methods have been limited to exit interviews with the patients following their visit to the clinics. However, these feedbacks tend to be biased, because patients are often hesitant towards giving negative feedback about their experience for various socio-cultural reasons. Interview findings also suggest that, exit interviews with patients should not be taken as the only indicator of quality. Furthermore, these kinds of feedbacks may limit the identification of quality improvement areas, because of their unstructured nature. Therefore, for an experiment, it is suggested to identify key performance indicators (KPIs) for the quality of health franchising programs. Especially because health franchising is done in the developing context, managerial supervision can be lacking. To assure good quality, continuous monitoring is key.

Following KPIs are suggested to measure quality that can be extended according to the structure of the program:

- *Number stock outs per month:* A robust supply chain is significant for continuous supply of commodities within the program. It is an unwanted situation when a patient asks for a certain contraception method and it is not in the stocks of the clinics. A health franchising network differentiates itself with its ability to provide all the options possible to the patients, therefore providing a freedom of choice. Stock outs can be measured every month in detail, monitoring the times when a patient needed a method of contraception and that method was not in stock. This requires the franchisees to keep track of monthly demand and their monthly stock. Additionally, it requires unbiased reporting from the franchisee's side to the monitoring team that performs monthly visits.
- *Number of expired products in stock:* It is important that the stocks of franchisees possess not expired and not defected products. The stocks should be checked every month carefully, making sure there are no products that are kept longer than the expiration date. This is especially important for mature programs that are operating for a long time.
- *Number of long-term contraception provided:* According to the findings, long term contraception can improve the health impact generated and durability of franchising programs in SRH. Especially in the regions where the patients do not prefer or do not have the knowledge of long-term contraception methods, this indicator would also show the ability of franchisees informing the patients and affecting the preferences when needed.
- *Existence of proper clinical circumstances:* This indicator is linked with the previous, in the sense that long-term contraception as IUD insertion and implants require clinical procedures. Any failure with these procedures may lead to irreversible outcomes for the patient. It is important that these procedures are performed properly according to the health legislations in

the country regarding the clinical equipment and supervision. From country to country, different rules may apply. For instance, there may need to be a professional clinician in an accredited health facility close to the franchised clinic.

Accessibility

Accessibility is defined as the extension of clinical outreach, reaching out to the locations where there were no clinics available providing SRH services before. In other words, it refers to new clinics that are opened in places as rural areas, where there is very limited access to health services. With a fractional franchising network as PSI Myanmar, this metric is not valid since a fractional franchising network just aims to utilize the resources of current clinics rather than expanding the clinical outreach. Therefore, with fractional franchises, there can be other accessibility measures.

Following KPIs for are suggested for measuring the accessibility of franchised clinics:

- *Number of clients served from the lowest wealth quintile:* This indicator refers to the accessibility of health services to the patients that come from a low economic profile. It is directly related to the affordability of the franchised services and the ability of franchised clinics to provide lower prices due to the subsidies they receive as being part of a franchising network. By keeping track of the economic profile of the patients visiting the clinics, the difference between the number of patients reached from the lowest wealth quintile gives an idea about the increase in economic accessibility.
- *Number of clients served from special groups:* It is important to see the impact of the franchising network on the possible prejudices that franchisees might have. This involves not providing family planning counseling to special groups such as young people, sex workers and people living with HIV. Because of some topics as sexual relation before marriage or prostitution can be taboo even in the developing world, the health providers can be hesitant to provide services for these special groups. The accessibility of the services of franchised clinics for these special groups is important in differentiating their role in the healthcare system.

6.3.3. Experiment Overview

After a detailed explanation, in this section, an overview of the experiment will be provided. The experiment design is suitable for any health franchising operation offering sexual reproductive health services that takes place in an urban area. Following steps are defined for the experiment:

1. An intervention and a control area are defined with private clinics joining the franchising network in the intervention group and not receiving any intervention in the control group.
2. The clinics in both groups are randomly paired for comparison.
3. For a given time frame the changes are observed in the following: costs incurred and previously defined KPIs of quality, accessibility and health impact.
4. The results are compared with statistical tools both internally within control and intervention areas between $t=0$ and $t=t_1$ and also among the areas to identify any significant changes.
5. The comparisons are reported and the net impact of the intervention is presented on the KPIs.
6. Cost per decrease in number of newborn babies per fertile woman is calculated for the intervention area, costing conducted from the program's perspective.

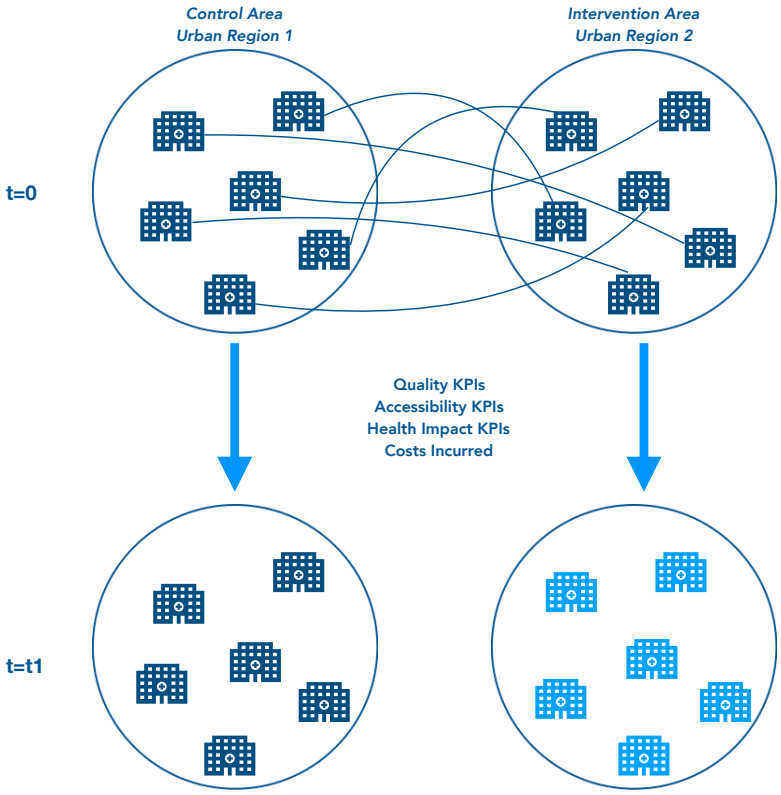

Figure 15 - Experiment overview

Certain improvements are expected with this experiment design both compared to the research presented in this study and prior research that have been conducted in the field of health franchising. Firstly, compared to the research presented in this study, the experiment is expected to have more accurate results because it is an experiment conducted in real life conditions. The health metric discussed for the experiment promises to capture the real impact of a SRH health franchising program. In other words, it seeks to identify "what happens" rather than "what is expected to happen" when services are provided. Secondly, the experiment also aims to explore the impact of a SRH health franchising program in other significant claims of the programs as accessibility and quality. As presented in Section 2.1.3., previous studies attempted to measure accessibility and quality, however, there were limitations concerning the experiment design. For instance, in these studies, client satisfaction is considered as an indicator of quality and is measured by exit interviews with the clients. In the experiment blueprint presented here, it is aimed to avoid indicators that are biased in nature and focus on the factors that directly affect end user's satisfaction instead. In addition, there is a new accessibility measure introduced in the experiment blueprint, which aims to introduce the inclusiveness dimension to accessibility measure, which is found to be relevant to the impact of health franchising. Moreover, it is seen that in the previous studies, the health impact is measured by the change in contraceptive prevalence rate in the regions of control and intervention. However, if all the private clinics are not franchised in the intervention region as it is suggested in the experiment blueprint presented here, it is tricky to understand which source of contraception delivery is affecting the contraceptive prevalence rate in the region.

6.4. Reflection

There are some challenges and limitations in this research that were discovered along the process. Some of them were identified and were successfully tackled, while others were overcome with the use of assumptions. Firstly, because the cost-effectiveness analysis in health franchising is not a very explored area, some assumptions with the costing methods had to be made. Assigning the costs of keeping the franchisees in the network as the profit they make out of the network as a direct cost is a crucial assumption of the analysis. Although this assumption is verified with the PSI expert interviews, still it may decrease the comparability of the costing method. Secondly, due to limited data, the assumption of allocating the indirect costs based on the service level and based on the number of clinics offering sexual reproductive health services is a limitation of the research. As presented, cost allocation is a challenging issue for the programs providing integrated services. Therefore, it was inevitable for this research not to face this limitation. Another concern is the comparison of cost per CYP ratios among different programs. Although this issue is addressed by presenting the most amount of studies possible and comparing the ratio to widely used comparison thresholds, it might affect the validity of outcomes. Especially with the research in health, there will always be differences with regards to demographics of the population, health systems, the unmet need of the population and behavior. Because this study was conducted for Myanmar, generalizing the results presented here has to be done with care, considering the other countries that health franchising networks are operating.

6.5. Further Research

The main goal of this research has been to demonstrate the cost effectiveness level of health franchising in sexual reproductive health with the analysis of PSI Myanmar case. The main scientific contribution is the demonstration of this value with comparison to similar programs in the developing world. The study presents certain adjustments to the CEA framework to be used for a fractional health franchising program that can be adapted by future research. The study also has exploratory characteristics, due to an in depth analysis of a field that has not been much explored and an identification of the value of health franchising. Another important contribution is the fact that this study constructs an experiment blueprint to evaluate health franchising programs that can be used by researchers conducting experiments in the field.

Building on the findings of this research, there are several topics that could be explored further. It could be interesting to explore the correlations between the input variables, which was not taken into account in this research. For instance, how does the procurement cost of franchisees or the profit they make, affect their willingness to join the program therefore, directly affecting the number of franchisees in the network. If a weight or a correlation factor could be implemented in the model presented in this thesis study, the result of cost per CYP ratio would be more reliable.

Another study could be to conduct a cross-case study for the health franchising network in different countries, identifying the factors that are affecting the differences of performance level between these programs. The case studies can include both quantitative data on the characteristics of the program and also qualitative data on the insights of program executors. Additionally, factors as the support of

policy environment, the economical level of the society and number of people seeking care from health franchises can be explored further to see the impact in different settings. An analysis of this kind, would also provide more arguments on the comparison of cost per CYP ratio among different programs in different countries, justifying the reasons of different outcomes for similar programs.

Finally, referring to the limitations of this research, the model provided here could be improved with a cost allocation technique that is more viable. Because it was beyond the scope of this study, the cost allocation was not conducted with regards to the health impact created from each health service field of PSI Myanmar. However, if this is done, it would complement the results of this study, leading to a more accurate cost per CYP value.

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Appendix A – Definitions of Contraception Methods

Long Term Contraception Methods

Intra Uterine Device (IUD)

IUD is a small flexible plastic device that contains copper sleeves or a wire and is inserted into the uterus. The copper component damages the sperm and prevents it from meeting the egg. It is found to be 99% effective and can protect from pregnancy up to 5 years (World Health Organization, 2017b).

Implant

A contraceptive implant is a small and flexible rod or capsule that is placed under the skin of the upper arm. It contains progesterone hormone only. The healthcare provider must insert and remove it. It can be used 3-5 years depending on the implant (World Health Organization, 2017b).

Short Term Contraception Methods

Male Condom

A male condom is a sheath or covering that fit over a man's erect penis. It forms a barrier to prevent the sperm and egg from meeting. It provides up to 98% protection if used correctly and consistently. Male condoms also protect against sexually transmitted infections, including HIV (World Health Organization, 2017b)..

Female Condom

Female condoms are sheaths or linings that fit loosely inside a woman's vagina and it is made from transparent soft plastic film. Just like the male condom, it forms a barrier to prevent the sperms meeting the egg. Its effectiveness in preventing pregnancy is found to be 90% with correct and consistent use. Female condoms also provide protection against sexually transmitted infections, including HIV (World Health Organization, 2017b).

Emergency Contraception

Emergency contraception is in the form of a pill that provide protection if taken up to 5 days after unprotected sex. The pill delays the ovulation while not disrupting a pregnancy that is already existing (World Health Organization, 2017b).

Monthly Injectables

Injectables are injected monthly or every three months depending on the type, into the muscle under the skin. They prevent ovulation. Their effectiveness in preventing pregnancy is 99% with correct and consistent use and 97% with common use (World Health Organization, 2017b).

Oral Contraception Pills

The combined oral contraception pills contain both progesterone and estrogen and are taken monthly. They prevent ovulation. The effectiveness in preventing pregnancy is 99% with correct and constant use and 92% with common use (World Health Organization, 2017b).

Appendix B – Sensitivity Analysis & Marginal Cost Calculation

Table 12. Marginal Cost Calculation

	Current Values:	IUD_CYP	1IJ_CYP	3IJ_CYP	OC_CYP	MC_CYP	FC_CYP	Implants_CYP	EC_CYP
IUD	12200,00	12201,00	12200,00	12200,00	12200,00	12200,00	12200,00	12200,00	12200,00
1-month injectables	120533,00	120533,00	120546,00	120533,00	120533,00	120533,00	120533,00	120533,00	120533,00
3-month injectables	55424,00	55424,00	55424,00	55428,00	55424,00	55424,00	55424,00	55424,00	55424,00
Oral Contraceptives	224604,00	224604,00	224604,00	224604,00	224617,00	224604,00	224604,00	224604,00	224604,00
Male Condoms	171224,00	171224,00	171224,00	171224,00	171224,00	171344,00	171224,00	171224,00	171224,00
Female Condoms	3189,00	3189,00	3189,00	3189,00	3189,00	3189,00	3309,00	3189,00	3189,00
Implants	1031,00	1031,00	1031,00	1031,00	1031,00	1031,00	1031,00	1032,00	1031,00
Emergency Contraceptive	7303,00	7303,00	7303,00	7303,00	7303,00	7303,00	7303,00	7303,00	7323,00
Total Cost	19100600,68	19100701,14	19100750,04	19100644,58	19100668,84	19100644,68	19101391,11	19100085,64	19100708,45

Table 13. Subsidy Scenario

Contraception Method	**No subsidy**	**Lower bound**	**Current Value**	**Full subsidy**
IUD (voucher)	0,00	0,41	0,72	1,00
IUD (without voucher)	0,00	0,41	0,72	1,00
1-month injectables	0,00	0,41	0,85	1,00
3-month injectables	0,00	0,41	0,57	1,00
Oral Contraceptives	0,00	0,41	0,58	1,00
Male Condoms	0	0,41	0,95	1
Female Condoms	0,00	0,41	0,76	1,00
Implants	0,00	0,41	0,87	1,00
Emergency Contraceptive	0,00	0,41	0,41	1,00
Cost per CYP	**16,83**	**17,88**	**18,68**	**19,39**

Table 14 - Unit cost scenario

Contraception Method	Lower bound	Current Value	Upper bound
IUD	0,43	0,74	0,80
1-month injectables	0,83	0,84	0,85
3-month injectables	0,76	0,85	0,86
Oral Contraceptives	0,17	0,31	0,90
Male Condoms	0,02	0,02	0,04
Female Condoms	0,52	0,62	0,62
Implants	8,50	25,30	25,30
Emergency Contraceptive	0,27	0,29	0,41
Cost per CYP	**18,28**	**18,68**	**19,47**

Table 15 - Monthly commodity scenario

Contraception Method	50% lower	Current value	50% higher	100% higher
IUD	6100,00	12200,00	18300,00	24400,00
1-month injectables	60267,00	120533,00	180800,00	241066,00
3-month injectables	27712,00	55424,00	83136,00	110848,00
Oral Contraceptives	112302,00	224604,00	336906,00	449208,00
Male Condoms	85612,00	171224,00	256836,00	342448,00
Female Condoms	1595,00	3189,00	4784,00	6378,00
Implants	516,00	1031,00	1547,00	2062,00
Emergency Contraceptive	3652,00	7303,00	10955,00	14606,00
Cost per CYP	**32,99**	**18,68**	**13,91**	**11,52**

Appendix C – Interview Notes and Transcripts

Interview Transcript 1 – Doug Call – PSI Europe Deputy Manager

ZH: How long have you been a part of PSI operations?
DC: I started in June of 2000. So 17 years.
ZH: What kind of functions have you had?
DC: First job was in Washington DC, associate programmer engineer covering east Africa region, mostly in headquarters. Then I went to the field the first time in Caribbean as a Deputy Country Director, where I first started working for franchising. And then I came back to Washington and I was the Deputy director of an HIV project, which was a global project. There, I was trying to expand a franchise for counseling and testing for HIV services in high prevalence rate epidemic countries. And then I went back to the field in Madagascar where I was country director for 3 years for PSI Madagascar platform where I was responsible for a franchise. It was already existing but I was adding services to the current services and expanding the portfolio. Then I came back to Washington and I was the regional director and eventually vice president for southern Africa region, so all the southern Africa portfolio until December 2015. And I have been in the European Office for 1.5 years. Our job here is to represent PSI to European donors, which is more than half of our funding. And to occasionally be a port of funding where European donors have a policy to fund a European organization rather than an American organization. We can receive the funding and channel it to where it is needed without it going to the Washington office. And it is an employment hub for people who can't or don't want to work in America.

ZH: This is a stakeholders figure I made for a health franchise. I was wondering if there is more to add to this network.
DC: It looks good. The academic community is sometimes there sometimes not there. There is always a donor. Sometimes the international agencies provide regulatory guides.

ZH: For the ministries as well?
DC: Yes. (Referring to local and international donor): This can be sometimes blurred, meaning, you can have the USAID which is based in US but they have a local office or the local donor could be a government or a company.

ZH: So the local government also funds franchising programs?
DC: Sometimes, yes. We have to talk about that, because, when people talk about franchising, some people assume that it is a private provider. But it doesn't have to be because you can have public providers who are franchised. But when it comes to private providers, most governments tend to think of the health sector as the public health sector. And they tend to ignore, or worse, they tend to discriminate against the private sector, which is funny because a lot of doctors who work at the ministry also have private practices. Because their salaries are usually not very good so they have to supplement their income by working evenings or weekends. So most traditional money flows from international donors, even international agencies like the World Bank will give a loan and the ministry will focus on supporting the public health system. That tends to be government clinics, government hospitals, and government laboratories.

ZH: So the money doesn't necessarily flow so much from the ministry to the private sector?

DC: Yes, because it tends to focus on the public sector. If you look at the countries that are low on the development index, you still have a lot of very poor people, if you look at their health seeking behavior; they tend to rely often on the private sector. They perceive a higher quality, whether if there is a higher quality is another question. Sometimes it is about confidentiality, they are concerned when they get into tricky issues like HIV, they don't necessarily trust the government. So they feel a little bit more comfortable with the private sector. But not a lot of money is focused on building capacity in the private sector. And if you go to the public clinics, some of these doctors were trained 30-40 years ago. And it's not like they have access to on the job training, so it's like they are stuck in a time capsule from long time ago. They don't have the best practices or the latest thinking. And often times, what they are trained to do, especially in the developing world is treatment and not preventative health. When you get into sexual reproductive health, preventative health is really important. Even with the contraception, I am not a medical practitioner but I know about contraception than most of these doctors do. It is pitiful. They may perform a surgery on you but they don't know how to consult you about oral contraception. Or worse, they may discriminate you because you are too young to use contraception. They can tell you that your parents should be a part of this conversation. Or you are a sex worker and they discriminate you or you are a man who has sex with men and they discriminate you. They may just deny the care you need because of discrimination.
From our point of view, we started off with, who is paying attention to the capacity of private providers and how can you improve the status of the private providers? How can you invest in their capacity in a way that reinforces the whole health system? We see the whole health system as inclusive of both (private and public).
We have an archetype. Sarah. So Sarah is a woman, she could be in Turkey, she could be in Mozambique, she could be in a refugee camp in Syria. She could be 15 and just starting sexual activity and totally unaware of what options she has. She could be 25 and having a fourth kid and having difficulty in conversing with her husband about contraception. So she is the icon of the archetype of who we are looking at. She doesn't think in the way that is depicted here (showing the stakeholders figure) she is in her village and trying to decide which kind of healthcare service facility to choose. We want to support these options. So we want to make sure that our healthcare is relevant to Sarah.
Sometimes the ministries, when they see the money flowing from international donors to the private sector, they can say "Wait a second, shouldn't this money be flowing to the public sector?"
Anyway, there is nothing I would like to add to the stakeholders figure since it looks good. Just one thing is that, put the consumer in the middle of the two healthcare sectors. Because the consumer or the client sit in the middle trying to decide where to go.

ZH: (Giving the explanation of Myanmar system SQH and SPH).
DC: SPH are community agents and demand generation agents. Task shifting is a good term that captures the resource constraint. In a country like Myanmar where you have finite number of trained providers and if the international agencies like WHO and the government ministry is trying to regulate who can do what you would create bottlenecks. So the doctors may be involved with some patients because they are the only ones who are legally clarified to see these patients. So the good example would be attending a birth, so for example if Myanmar says all births must be attended by a trained physician and you don't have enough trained physicians, you are creating a problem right? Plus these doctors have other things to do. If they all focus on attending births then what about the people who have TB or HIV? So the whole concept of task shifting is taking a look at the continuum of care, all the mortality and morbidity of the country and taking a rational decision of who is the right person to provide that care? Doctors may be reluctant to refer patients to nurses and inclined to handle the health services by themselves. But the nurses often times can do it. And then depending on the technology the intervention, for example injectable contraception, some countries may introduce it as "only a

doctor can inject you with this shot". But it is a needle and a nurse can do that. So if you create a policy environment that can task shift that work down the continuum of care, you are taking a burden off those doctors. The concept of task shifting is an important policy issue, because you can go too far. You don't want a community health worker doing an open heart surgery. There is a limit. But there is a tendency of the doctors to own everything.
ZH: (Talking about the allocation of costs to the RH services only and the assumptions of doing it)
DC: Just so you know, we struggle with this too. The whole industry struggles with it. Because you can look at the national health data and see some indicators for the SRH. We define women in reproductive age between 15-49 years of age. What is their total fertility rate, so what is the average amount of children they have? And what is the desired fertility rate? So the average number of children they would like to have? Usually the total fertility rate is higher than the desired fertility rate and that different to us is the unmet need for contraception. You can get the data from a representative population of the percentage of using a modern method of family planning. That would be the contraceptive prevalence rate which is what we are trying to influence. One of the ways of doing that for us is social franchising and social marketing which we actually started with. So subsidizing pills and condoms so that people can afford that. You can track down these changes and monitor the data but it is not a really good measure on evaluating our programs because you can see fertility rate going down and CPR rate going up and you can pat yourself in the back but maybe the public sector is doing a good job. Maybe you were marginally involved. In Madagascar I remember I was tracking the suppliers so the number of contraception goods going into the country.

ZH: I did that from the information in UNFPA site. I calculated the unit costs of the products from there.
DC: So you have the public supply which is usually free through the public services and you have the for-profit through the commercial side which is the pharmacies and social marketing is in between. And looking at the supply side, one way to look at it is the CYP basis. So the idea is to aggregate the effect of different methods and come up with an indicator. You can see the correlation by looking to how many commodities supplied (CYP supplied) and the contraceptive prevalence rate. How do we know that what we are doing is effective?
ZH: So, CYP as a measure just tracks "how many people are reached" but it does not track use.
DC: Yes. And use is always going to be a tricky thing. I can't put a GPS indicator on every condom that tells me if it was opened if it was put on properly and there are ethical rules I cannot always interview you everytime you have sex to tell me exactly what happened.

ZH: But would you say that health franchising programs in general can decrease the wastage or increase the effectiveness?
DC: Yes, that's the assumption but then again, how do you know? So you are a client and you come in and ask me about contraception. We have a talk and after the talk I recommend through the concept of informed choice some options that are suitable for you. You pick one you are the most comfortable with. I write a prescription and you can go pick it up. With the injectables, if as a provider I perform the injection then that is not "reach" that is actually "use" and I record that I have provided you the contraception as a franchise.

ZH: So this decreases the unrecorded data indice.
DC: Yes. But if I write a prescription and you go to a pharmacy to buy it, even though I know that you purchased it from your tracking number, maybe you went home and your husband took it away from you. So it is always going to be tricky to know the exact impact of what actually happened. We can model, we can find correlations but do we really know that that is what happened? No.

ZH: Another question, when I am trying to allocate the building costs for the fractional franchises. How would you suggest to do it?
DC: Yes it is tricky. Say I am running a franchise in Myanmar and turns out the Government of Myanmar is actually really supportive of franchising. But say in another country the government says every time you invest in the private providers you are not putting money into the public sector. Then I need to defend this investment and say this is a cost effective intervention. So what is the true cost of having that place to the provider? Even if I am not paying for it, did the provider buy that place or rent that place? So in the public sector they may do cost analysis depending on their salaries but there is a sunk cost of property and public facilities. The public facilities that the government owns were bought long time ago and the government might see them as "this is ours." That costs are not included necessarily in their cost calculations. So it is hard to compare the costs of a public sector intervention to a private sector intervention. Because the assumptions of the cost side are often very different. So for us, we don't tend to include in the cost side what the provider puts in the clinic, because, presumably they are going to do that regardless.
ZH: So you treat it as sunk cost. It is already there the equipment, furniture and the building?
DC: Yes. I would also argue that it is a more sustainable cost because it is private money. He has opportunity cost with that investment but it is not like the choice is between him donating the money to the public sector or investing in a clinic. So when we look in the cost basis we look at our staff, the training costs, the clinic audit, the cost of the demand creation side. Then it gets interesting, how do we know if our marketing budget is cost effective? So I am running a clinic and there are demand creation activities from the side of SPH providers. Maybe 80% of my clients are coming from 20% of the agents. I am spending all this money on the agents. If I double the amount of my agents maybe I will double my clients. If you have a good referral system then maybe the client shows up with a referral paper that you can allocate the number of people showing up to the clinics referred from SPH. (After this point he talks about the new cell phone technology which will make the tracking of which demand creation agent is referring most of the patients to the clinics and understanding which group is working hard and which is not. Then there is actually an option to compare performance of these providers and then understand the reason behind the inefficiency.) So this cost effectiveness data is hugely important for decision making.

ZH: About the cost of time of these providers. (Talking about the incentive system in Myanmar).
DC: The concept of incentives also has ethical dimensions. So the right of Sarah to choose between contraception options should not depend on the financial incentive the provider has. Maybe you want to be on IUD and you have reasons for that. I as a provider, I may do a cost benefit analysis on my own and say I can get you hooked on pills I can charge you more than I can with IUD.

ZH: That is why I think they are doing the incentives for IUD.
DC: Yes but some donors will say that you can't put IUDs to women that should not be on IUD. There are some medical limitations for that.

ZH: I added cost of time as the profit they make because that is what keeps the providers in the network.
DC: Yes that makes sense because it is their incentive to participate in the network. For example in Madagascar we were going to this small clinic providers and sometimes there is an individual doctor there. He travels 10 kms every 5 days of the week and he runs the clinic from 9 to 5. He only has time maybe for 15 consultations a day. And he is already at 15 consultations a day. And we come in and we say "we can increase the demand for your services." However, he doesn't have time to see more

clients. So what is his incentive? Our approach there is to have a discussion with them and try to make them understand that they can utilize the health services they give. Maybe hiring a nurse or an assistant that can take care of the low-priority services that would enable them to see high-priority patients. Also maybe they are not taking on SRH services because of ethical reasons: they don't want parents coming their clinic and asking about "why are you putting my daughter on the pill?". SRH is a very controversial issue in any country, even in Netherlands.

ZH: I was checking the outputs from different programs. And what could affect the outputs, the number of commodities distributed?
DC: The maturity is important because the program that is mature would have lower costs than the program that is just starting.
About the accessibility: we started with social marketing and the approach was "if coca cola is there, then our condom should be there." But that involves some actors in the health system that are typically not involved in the health system. You have a corner shop that is selling FMCG and now they are also selling condoms. You have a condom outlet that did not exist before. And now they are distributing condoms in a routine basis as an enterprise. But that only gets you so far. Because you cannot sell an IUD in a cornershop. You don't want that guy behind the counter putting an IUD in you. As you get into more clinical interventions then you need a provider. The issue is that the providers are normally located in urban or peri urban areas, there is less incentive for the private providers to set up shops in the rural areas. In Madagascar we started with 75 providers and we grew into 150 providers. The people most at risk is actually outside of the service area that the providers are working for. Your risk as Sarah in an urban area getting pregnant is less than Sarah in a rural area. For the Sarah in the rural area, even the provider can understand her problem and can refer her to a urban facility, she most likely will not have the resources of travelling there depending on all kinds of reasons. The point is that the risk is not the same for these Sarahs. Social franchising here comes in the picture by convincing the public or private providers to visit the rural areas once or twice a month. Providing subsidies and a "pop-up" clinic for that doctor is among the things that could be done.

ZH: I also checked the types of commodities distributed by programs in different countries and they were really correlating with the health demographics so the choices of contraception method of the people living there.
DC: Yes, it is demand driven.

ZH: So would you say that the social franchising programs are affecting the method of preference of these people or they are basically demand driven?
DC: I would say it is probably a little bit of both. Maybe as Sarah you go to a public clinic because you want to use a certain kind of contraception. Maybe the public sector provider did not have a very good technical training and a good inventory so they prescribed you with what they have. Because they have stock-outs. The private provider may have more methods, may have more training. You may have a pre-conceived notion of what you want. But you might not know that if a certain kind of contraception is actually not the right one for you. A doctor should just present you your choices, should not say "you should make this choice". This leads to a unbiased decision. To know what happened differently as a result of the training giving by the franchisor is hard to know. So the question of "what is the counterfactual?" is tricky to answer.

ZH: How would you evaluate the future role of health franchising within the healthcare system of developing countries? What can enhance the further acceptance and integration to the health system? What is the role of policy makers?

DC: At the end of the day I see this as a resource allocation problem. In the next five years I suspect that we will see more economic nationalism. Think Trump, think Brexit. The developed countries tend to focus more on their economy. If it sustains itself, you can see less and less of money going into these programs. We already see that the global health spending peaked in the year 2012 and it is not coming back. But the need has not gone away. If we did what the World Health Organization recommended we would take all that money and give it to health ministries so that they could invest in their health infrastructure. And I would say that that would be a short sided decision. That money is going to grow less and less every year. So unless those governments are able to cover the gap... Governments need to at some point stop being reliant to World Bank loans and bilateral systems. There is no rational allocation of resources from the government's side. You have weak governance and a lot of waste in the public sector. The private sector by definition is more sustainable because you have people investing their own money. If you are public sector practitioner, you went to medical school, you worked hard you finally had this job in the ministry. You get paid your salary, (hopefully,because sometimes you don't) whether you do a good job or not. Whether you see ten clients a day or whether you see twenty. Hopefully you are a good human being and you took that job because you care about human beings. I saw a lot of doctors who are like that and I saw a lot of doctors who are not.

ZH: But in the otherside you can also have these ethical problems of making profit out of providing health services.
DC: But on the otherside you put your own money in it. You invest in it. You have to get your money out of it. Your livelihood is based on the volume of your clients. What I think is less appreciated by the public health system is that ……
In places like Myanmar, 3 or 4 percent of the healthcare provided is coming from a franchise which is an astonishing number. Those doctors existed before but presumably they are giving a better quality of service now. Now we have this collective bargaining power with several thousand franchisees in the system. They used to say that they need the commodities and the training but as that system has matured, now they are asking for new things as an ultrasound machine. Donors are not providing that. But maybe if we can actually go to an external provider, such as Philips and say we are representing this much of the healthcare system in this country. The price asked from the external provider can decrease with the collective bargaining power rather than giving it to an individual. That is why right now PSI is transitioning and going beyond the individual relation to collective support. This also means that donor money not just going for subsidies but also credit facilities and investment for private sector money where those investors might actually get money back.

ZH: So there are opportunities and a lot of potential. But you said that the public sector is a bit discriminating private sector in these countries.
DC: Depends on the country. But in general I think the governments are trying to recognize and we are learning how to lobby governments. We franchise maybe it is the pharmacist maybe it is the private practitioners, they usually have syndicates or organizations. We work with them as a collective group and then you get them to go work with the government. They can be the voice of PSI as part of the PSI for negotiating governments to change policies.

ZH: So we can say that it can get more support from the government.
DC: Yes. The question here again is that " can psi help to facilitate the collective bargaining? " and I think that is what we will learn. Rather than just the traditional model where the donor gives us X, we subsidize the product we provide the training. That worked for a long time and still in some countries we are starting it. But as the franchising system matures we have to be evolving with it. Because at the

end of the day it gets back to the definition of what is sustainability. There are two key indicators: use (which is also a proxy for health impact) and subsidy. In a fully public sector provided economy, the subsidy is 100%. In a matter of time, you want use to go up and the subsidy to go down. US government is one of the richest governments in the world and they subsidize healthcare. ObamaCare is a subsidy. There is always going to be poor people who cannot afford private healthcare. But over time if you think about sustainability you want the subsidy to go down. We call this the total market approach. What is the total health system? Is it responding to the needs of the community? And is use of those needs, those services, growing? Why is it going up or down? We are trying to grow use and we are trying to reduce the subsidy. There is no perfect sustainability. In Madagascar we were lobbying with the first lady's wife and she got very passionate at some point and said all contraception must be free. Ok that's great but we have a small model of community health workers and private practitioners and she is saying they cant charge the service for that. If I am a private practitioner what is my incentive to continue? If you want the health sector to be free that is a policy decision but if the use goes up and the subsidy goes up you are ok. But if you do this in the private sector your use will go down and you won't get more sustainable.

Interview Transcript 2 – Daniel Crapper – PSI Myanmar Deputy Manager

ZH: How long have you been a part of PSI operations?
DC: For 15 years and in Myanmar 3 and a half.

ZH: What kind of functions did you hold before?
DC: Currently I am the deputy director. I am behind the strategic thinking of all our activities.

ZH: (Talking about the stakeholder map. Mentioning the collaboration between the private and the public health sector and the fact that health franchises recruit people from the public sector.)
DC: We don't. The providers we work here in Myanmar are almost entirely private sector. We do have some small public private partnerships we have been supporting the public sector for example for training in long term methods. But this is a technical small component and it is not franchising. That said, some of these private providers are former public sector providers. There is always a blurred line.
ZH: Would you add more actors to this picture that I missed and that are crucial for the health franchising network?
DC: For Myanmar specifically, you could add the Myanmar Medical Association.

ZH: What are the main costs you are taking into account when you are measuring the cost effectiveness of the program?
DC: When we calculate our costs we take a more internal look into the operations and maybe not include some of the costs you have seen in the UCSF study which takes a more academic approach. The hardest issue for us, and Myanmar has this particularly, Myanmar is the most integrated of the franchising networks that I have ever witnessed. (And I have worked in 4-5 countries already). This makes it so much harder to make out a cost per health area. It is tricky because how can you allocate the cost of the supervisors doing the trips. You have to have a method of cost allocation and whatever method you choose is going to be sort of flawed. If I am going to be honest, because it is so complicated, we tend not to do it as much as we might.

ZH: In the article it also states the building costs. But because it is a fractional franchise you have minimum building activity.

DC: Yes correct. We have probably done some minor clinic renovations for clinics that are doing IUDs. But that would be marginal. I don't think it is a significant sum of money.

ZH: (Talking about the CYP and the fact that it is hard to understand the impact once you distributed the products) Do you think there might be something that the health franchising is adding value and this metric is not capturing it?
DC: With social franchising we have more confidence that the service is provided. We use reports of actual insertions for IUDs, actual numbers of injectables injected and those require the provider to be there. So we are more comfortable about those numbers. You are right that when it comes to selling, we can't guarantee that the commodity is used and not being thrown away due to expiry. However I think we don't have big problems in this country with respect to expiry. Our SRH products are rare to have expiries.

ZH: If we accept that health franchising is more cost effective, compared to public sector, what would be the reason behind it? More effectiveness or less costs?
DC: Among the reasons, in our health franchising, there is a co-payment from the patient which makes it more efficient. There are also co-payments in the public sector but they tend to be informal. So those informal payments are not really taken into account in the public sector. So in private sector there is a shared cost. The massively larger number of outlets that we have, 1200 outlets we have and probably all of them are doing short term methods. And they tend to be open at the times that people want to use them. The typical opening times would be 7.00-10.00 and then 18.00-21.00. But those are efficiencies that are hard to capture and to monetize. But they are important.

ZH: (Talking about task shifting)
DC: It is interesting for you to say that because the challenge in Myanmar is that **task shifting is very way behind where it should be**. So the fact that we are using doctors in the SQH (Sun Quality Health Network) to inject people with injectable contraceptives is completely waste of resources. I had a consultant saying you got doctors doing what nurses could be doing in other countries and they are absolutely right and that is because **there are legal restrictions around that.**

ZH: How do you see the current policy environment for health franchising in Myanmar?
DC: The answer is as always slightly complex. There is a new national health plan that was issued at the end of last year in December 2016. In that health plan there is a huge amount that supports the concept of working with networks of private GPs. And there is a lot of talk about task shifting. That said, we are in an environment where there is extremely low task shifting up until now. When I arrived in 2013, the government have gone massive steps backward. For example with IUD insertions, it said IUDs can only be inserted in a facility that is set up for birth deliveries. In Tanzania, they allowed nurses to insert IUDs. Whereas in Myanmar you need to be a gynaecologist before you can insert an IUD. So that sort of things are creating enormous barriers. So in Myanmar there is highly restricted environment for task shifting and there is huge reluctance to do task shifting. There are exceptions to this rule. We managed to get approval for completely untrained informal providers to do malaria tests. That's a massive task shifting exercise. But that was a one-off and we are not quite sure how that got approved. Finally the government agreed on ordinary GPs doing IUDs. But we took a step backwards for 2 years when we went down from 150 providers to 15. Because only 15 was set up with a sufficient facility to meet the new government requirements. And on paper the government is talking about doing even more task shifting but to be honest we haven't really seen much evidence of it yet.

ZH: What other things could be done from the policy side to support the integration of health franchising?
DC: My personal opinion is that strategic purchasing is the future for Myanmar with private sector engagement. (Check the additional documents on strategic purchasing). We don't know yet what the government is thinking about targeting (which group to target specifically) but there will be a time when government will pay some kind of strategically processing fee to their providers where maybe PSI will be acting as an intermediary. Because maybe we are able to network with 1000 doctors together therefore the government can do one contract with PSI instead of making 1000 separate contracts.

ZH: Can you say compared to other countries, in Myanmar specifically, health franchising is adding a value because of some local aspects or because of the environment there?
DC: If we move beyond the FP side, there is a study called FPWatch, where we tried to do an assessment of market share effectively and we identified roughly while the Sun Network compromises about between 15-20% of all providers who are offering FP in the private sector in Myanmar, these 15% of the GPs are providing about 40% of the CYPs delivered by the private sector. So what it means is that GPs who are not part of the franchising network are significantly less interested in providing FP services. **So that is a measure of the impact.** Moving beyond FP, the market share that we are achieving in certain areas is significant. If you look at TB, we are caring for about 15000 TB patients. And this is about 15% of the entire TB services in the entire country. It is a nationally significant number. In urban areas the proportion of TB patients who are from the lowest quantiles was higher in SUN than it was in the public sector. So what this demonstrated was that SUN, even though they are private GPs, thanks to the support they were getting from PSI and the public-private partnership, the sun network was able to provide for more patients from the poorest population in urban areas than the public sector.

ZH: What do you think are the factors affecting the accessibility of these programs?
DC: Because we are working with existing private providers, franchising is almost always going to be in urban and peri-urban places. So that is a fact that we don't deny. But urban health is a big challenge. So even urban FP is not solved. With the massive migration to urban areas, there is huge slum growing around the edges of the city. The government kicks the people out of the center of the cities to these slum areas. I know that urban poverty is different from rural poverty but there is significant issues there that the franchising network is well positioned to solve. The urban population will get bigger relative to rural population over time.

ZH: How is the relationship between the franchisor and the local government maintained? Is there more ways for you to get your ways with the government? Because Doug was mentioning that you are recently learning how to lobby with the governments as well.
DC: Again it is a nuanced question. I'll give you the positives. In the elections we had last year when a new civilian government was formed, we had 26 some present and some former Sun doctors who got elected as MPs. So that's a reasonable measure of influence you might say. The kind of people who becomes doctors in this country are without doubt the elite of the elite. They do have relatively high amounts of power. At the same time the people who ended up working in the private sector, under the previous government would have been considered subversive. A relatively large number of them supported the opposition. So under the previous government they were considered with a lot of suspicion. Whereas with the current government there is far more readiness to engage and a lot more lobbying power that they have. I would say that the current situation is evolving positively. That said, as in almost every country, the traditional sectors of the traditional public sector have always been

indifferent and sometimes hostile to the private sector. Often it is indifference. So the new National Health Plan which is endorsed by the planning unit of Ministry of Health, is widely not liked very much by the traditional vertical program elements of the MoH. So the new national health plan is all about integrated central package of health services and that is inherently threatening to the National Malaria program the National HIV program the national TB program which always though vertically and they expect to be vertically funded. Whereas now the donor funding is getting less it is more thinking in the way of we should have integrated national health package. Therefore the national health programs are more thinking as "wait a minute that is taking away from my funding". If you think about it, the GPs are already providing integrated health services. It is only us as PSI who come to them and say " I have funding from a TB donor and I want you to run a TB program " We are the ones thinking vertically whereas the provider himself or herself is saying "Ok I will add that to the primary package of services I offer". In a way we were thinking in a wrong kind of way that is vertically and we just now started to think as we need to support this provider in delivering primary healthcare. Which is a good thing but it makes it very hard to perform the costing for just one type of service.

ZH: How would you describe the adding value of health franchising programs? For example the ethical aspects… the discrimination from doctors?
DC: Stepping back, I would say that as private GPs, these people are full of their own prejudices. I am not saying that they automatically offer better services than private or the public sector. But I would say that there are plenty other providers out there who are open and willing to offer a wide range of different services. We now have 34 providers who are offering ART, free ART treatment in their clinics for people living with HIV. We have succeeded to identify that there are clinics completely comfortable working with gay men. So, willing and happy to offer specific targeted, either free or cheap services to extremely vulnerable groups. So we are able to identify the right places to make effective referrals. We are able to do exit interviews, counselling is a big part of what we do and identify if mistakes are happening. So by creating significantly higher number of service points, you are creating many options for the patients. Whereas with the public facilities the options are limited.

ZH: How do you see the future of Sun Quality Health Network?
DC: The future as I see it is the strategic purchasing program. One of the big challenges we have is funding and financing. For example today we have no donors supporting family planning. So we are keeping that alive with our own money. Out of our program income or with subsidies that we are prepared to offer if you want to keep the program alive but that's not quite sustainable. We are essentially able to sustain the program because we have donors supporting TB and supporting malaria so if someone has travelled to the clinic to do TB supervision visit they can restock with FP products at the same time. Different programs can effectively cross subsidize each other in different times. We are very open with the donors about this, we are saying that it is because we offer integrated services the people are attracted to the clinic. The future is we anticipate declining amount of vertical programs, we anticipate that the future in Myanmar is going to be based on strategic purchasing and in the long run it will be the government doing that strategic purchasing. In the medium term we have a lot of donors looking at our pilot and saying this is one of the most exciting opportunities that we have seen in a while which as both private GPs, the government and donors all working in exactly the same direction. It is an actually amazing confluence of mutual support. This week we have asked the MoH to visit five clinics that we have started the strategic purchasing activities and we will be having cortically meeting when they will be there, we will talk about progress results we will talk about learning we will talk about challenges. So it is not like we are trying to say here is a perfect program without any difficulties it is about sharing our learnings and continuous improvement.

ZH: How is the relationship maintained with the donors and what do they expect when they are investing in these programs or in the health areas?
DC: The donors are generally very pleased with the network. But that is not the same as saying they want to keep funding it. Funding is limited. The most exciting service we are giving is the fact that we are able to provide ART through the GPs and the integration with TB. However we are being challenged by more efficient ways of working and the strategic purchasing plan is the answer we are looking and hoping for. Which means that one day the government will be engaged and the government will be that long term funder.

Interview Transcript 3 - Jos Dusseljee – Cordaid - Senior Expert Health Systems Strengthening

ZH: What are the costs you take into account with sexual reproductive health related programs (results based financing programs)?
JD: With results based financing programs, we do strengthen local health service providers and we do encourage them to focus a lot on sexual reproductive health especially with family planning by providing them an incentive with every service they provide. So it is up to the clinic to organize demand in whatever way, we don't interfere with that. We know that if we provide an extra incentive with every additional service provided, then the clinic management would actually be interested in promoting that service. What we do is we contract the clinic in the areas where we work for a set of indicators. Different methods have different prices. The price is not related actually to the cost. The price is related to the relative importance that we attribute to a particular service. So if we think that certain services are underutilized but still are vital we increase the incentive for providing that service. Our intention is to boost the uptake of services that are vital for the community. We do not just incentivize for quantity but also for quality. We measure on a quarterly basis the quality of service delivery and that is converted into a percentage score topping up on quantity. And the quantity is fee for service, so every additional unit of service, additional incentive. So the quality comes on top and there is another factor that is the isolation/remoteness. Because we know that certain clinics are in situations where the number of potential uses is less due to low population density etc. We know that it is hard to generate demand for these services, we compensate with incentives. Direct costs are these: quality, quantity and remoteness. The indirect costs include verification, contracting, human resources so the costs incurred to keep the program running. So the incentives would make up for 65% and the indirect costs would make up for 35%.

ZH: How do you measure the accessibility? Because with health franchising programs they are mostly focused on urban and peri urban areas.
JD: For us it is the opposite. We mostly focus on rural areas. Only few voucher programs in Zimbabwe are in urban areas. They again target the poor that are under utilizing the services. In rural areas we contract health facilities, health facilities cover a certain geographical area which has a number of population. So basically wherever we work, we have insight on the population numbers and the catchment area. And with the catchment population we try to calculate the composition in terms of male-female, age composition and also reproductive health. We measure service delivery and we guesstimate what our coverage is. We want all women to deliver under supervision by a graduate midwife, we want to see 100% of the deliveries in the system which is hardly ever achieved but that is our ambition.

Lonneke: So you measure the services provided but you don't know which people used these services. So you never exactly know if the catchment area that you take as the target group is really the user of these services. So accessibility is really difficult to measure because it can be the same people that are using the service or there can be people coming outside of the target population.
JD: Another element is we contract all the health facilities in a district, so we do not discriminate between private and public. Recently in Zimbabwe, and I met Population Services Zimbabwe which is not a PSI affiliate but it is a Marie Stopes affiliate. So PSZ are actually providing outreach FP services. And at a time when I was involved with developing the program, I concluded that for me for the RBF program it was less a problem who performed the service as long as the service was performed and people are using the services and the health center actually accommodates service delivery. Then they would get paid. So what happened was that the PSZ would have their outreach station at a health facility that is contracted under RBF and the statistics of that health center would be combined with the statistics of this outreach clinic and then qualify for incentives. I was surprised to see that although that was done already for 6 years everybody had forgotten about it so the PSZ said "how are they going to be compensated for the services that we provide?" The basic idea is that there was a cross under utilization of FP services and the more outreach activities the more utilization would be in interest of the program. So that's why it was organized in this way. In an urban setting it is different. In an urban setting people are free to choose among quite a lot of options. Private and government and other types of providers. Distance don't mater that much and people are much more mobile. It is hard to track new demand in this setting because it is not known if any new people are reached. It can also just be the same person switching from one station to the other.

ZH: How do you see the role of task-shifting and the attitude of policy-makers towards it?
JD: It is quite common, particularly in a country where health system is very structured that task shifting is prevented. However, in Africa this is not the case. Actually in Africa, without task shifting you cannot get anything done. If you regulate certain basic services to the hospitals then it is basically saying that these services will not be provided. You have the develop the quality assurance mechanisms that make sure certain services are provided as close to the public as possible. In Zimbabwe that was one of the reasons why we started with RBF because of the fact that all delivery services were done by district hospitals and all the midwifes we recruited were also in district hospitals. So that meant a large distance done by people which comes at a cost. And the district hospitals were not free. So there was a total underutilization of the delivery services. What we did is we brought the services back in the health centers. We trained more midwives.

ZH: What do you think of CYP as an effectiveness metric for SRH interventions?
JD: We are not using it there yet but I would like to use it and I used it in my previous job. Because it is the only indicator you can use to compare one method with another one on the effect and also the costs. So what we do indirectly is, we incentivize an implant more that we incentivize for instance pills, or we incentivize an injection. You always see in our programs implants are valued more than the other commodities and condoms we usually don't count at all. Because we separate HIV protecting measures from the FP measures. Apart from the 2 programs we have the rest is in Africa and in Africa HIV is a big problem. That's why we separate them. But of course the impact is there.

ZH: How would you define the adding value of these programs compared to public sector?
Lonneke: So in the private sector and in the public sector, mostly the starting level is very different. I am focusing on Uganda and the public facilities are totally funded by government and are very centralized. If something is not working or equipment is broken, there are many different procedures for it to actually get replaced. The private sector on the other hand ıs organized in a different way.

Mainly because of the user fees they have more an incentive to keep going to meet patient's demands. Whereas the public sector do not have this much of a motivation.

ZH: We were also discussing this in the other interviews that people feel safer with asking about contraception in private facilities because of the prejudice they might face in public facilities.
JD: This is definitely a problem in church services and government services, the prejudice against the young people using contraception. It's against the culture. But for the private sector and that is why also organizations like PSI provide relevant services in a lot of countries, is because they can be paid, they can sign a contract that is also paid by another donor for providing particularly services for a specific group of users that otherwise would not be reached. For instance the gay community. That is also why we use the voucher programs to target specific groups. So this means that you remove the barrier that is there with a church related or a government related service. That is also where agencies like PSI distinguish themselves because they are trying to create demand.

ZH: What is the role of the policy maker for these programs / what kind of challenges have you faced during implementation phase of past projects?
Lonneke: I don't think you can say one thing in general about public and private as it is different by every country. The political situations in every country and positioning of these programs are very different. What I know from Cordaid is mostly focusing on the first years of intervention and getting the program started but in the end, in the final stages you actually want to hand it over to the government themselves. So you actually want to build up the whole system. So in one hand you want to get the government involved but on the other hand it is still very difficult to get the money flow within the country.
JD: But in general the governments find it difficult to finance the private sector because they presume they get their money anyhow. That's not the case anymore. They also depend a lot on user charges. Sometimes in RBF program you say the incentives we give will replace the user charges but it may not be enough to keep in business and this is the decision of the health facility. And if the people are prepared to pay for it because of the value of the service then actually there is not a major problem. In general in Asia the private sector is by far the most amount of services provided.

ZH: What happens if the donors are not available anymore. The programs have to be sustainable.
JD: Yes, it can happen. It happens to our programs as well so you hope to collaborate with the government to take responsibility. It is also interest of the government to ensure quality and quantity. There is hardly a government in a developing country which is fully financing its own healthcare. They all get funding. More and more I see that these donations are often performed in the form of loans. So the government in a particular country and the donor agree on certain outcomes and then they find a specific actor like PSI submitting a tender proposal and winning the tender to actually help building the capacity of clinics and improve the service delivery.

ZH: (Explanation of the stakeholders)
JD: I think you covered all of them, but I would like to distinguish and breakdown the community. Because especially in the areas you are referring you deal with gender and there may be gender inequality, and you deal with age. So we are currently with the RBF services are not separating one unit of demand from the other based on age specific use. (early child marriage) If it was up to me I would change that. And another thing, among the stahekolders we also have committee representatives that are in health center clinics or hospitals. I haven't come across any analysis that is attributing any relevance to including youth for instance in such a committee. Cordaid also involves local community based organizations to not only verify that certain services are being used but also get feedback on the

quality of services. But the feedback is mostly positive because people do not say something negative about the services they actually use. What is not measured however is the feedback from the non users. The health consequences we never measure, we actually measure the service delivery. I am satisfied to a point that the service is delivered but I am not fully satisfied if the needs from demand side are not fully met by the service delivery. And in PSI they always measure the impact by CYP but they never link it to actual unmet needs. It is nice to write so many reports saying that we have delivered so many services but they never link the service delivery to actual needs.

ZH: How do you see the role of CEA?
JD: Price and cost. Cost are not always relevant from a public health point of view. It doesn't matter what it costs it matters if the service is actually being used. That's why also we work with incentives and its impact on the critical use. For us I would like to do more analysis on couple years protection and **see also the link to fertility rates** and so far we don't do that. Even with STI prevention we don't do that yet. The problem is also that we submit tenders based on the request we get from the donor and if that includes a cost effectiveness study then we are eager to do so but we are not the government. And with the government, it is extremely relevant if you have a limited amount of money, strategic purchasing as a concept is extremely relevant but not often done. And also in our programs as I find it a pity. The program in Zimbabwe after 6 years it is going to be handed over to the government and now our goal will be the technical advisor. There I hope we can conduct a bit of research to see the effects of different incentives etc on the outcomes that we would like to achieve.

Interview Notes – Christina Vries – Cordaid - Public Health Expert and women's health innovation advisor

Rural Areas

Cordaid mostly collaborates with the public sector and the faith based organizations and the results based financing program. Therefore, it involves the public sector clinics trying to reach out to the rural areas rather than urban areas. Health franchising networks tend to focus on urban and peri-urban settings, for the largest populations, while governments and NGOs value equitable services and health for all.
Yes there is also unmet need in the urban areas where PSI can handle well if they have a good network. However, the lobbying of PSI is biased because it is not including all the facts.
The adding value of these health franchises changes from country to country, the quality assurance of the clinics should be done in a proper way. This is maybe being done in the urban areas however in the rural areas this is not seen. The burden on the women can be very high leading to infertility if there is something wrong with the insertion of contraception. This is one of the reasons that the public health sector does not allow providers without expertise to take part in these services.

Operations

It is getting harder and harder for PSI also to resupply commodities. Normally all the contraception commodities that is imported to a country has to be checked in a government office in the developing countries (I think the example was Kameroon) however this is not done. There is a lot of smuggling and expired goods. In the public sector the access to the following two things is a big problem: the variety in options and the availability of the contraceptive.
There are many factors affecting the success of the franchising programs that are from the supply side, the operational efficiency of the supply chain and from the demand side, the infrastructure within the country. Stock outs is a big problem and any supply chain that can maintain continuous supply of goods is successful. Supply chain management is better with PSI, and the peripheral health franchise

have a financial incentive to prevent stock-outs. Task shifting where possible, but always need for a back-up of a medical doctor (within one-hour reach) in case of complications. Both the taskshifting and the back-up are more difficult to realize in a context of 40% vacancies for midwives, nurses and doctors as in most rural areas of African countries.

The health worker can give less often a LARC than condoms or pills, but if the payment or bonus to do so is better, s/he will be more motivated. In addition, with an unmet need of 40-80& of rural women, the number of clients can rise. 10-25% of young people are not satisfied with side effects of oral pills (own programme research), and they change frequently. More satisfied clients will improve the image of the health franchise. The clients need the assurance that the LARC will be removed at the moment they wish, without unexpected costs.

Impact

How do we measure the impact? By the number of new users of contraception in a region that we are operating, which is a common measure. With the accessibility we consider the age range of the person. So depends on the youth or not. The impact of condoms on HIV is measurable, but far less for pregnancies in general (maybe for subgroups). Not all clients want to be recorded, many young people buy anonymously at drug stores.

Condoms appear cheaper than an implant for instance, because the costs are often compared using CPY for one year. But if you compare the costs over 5 years, and include the costs of less failures, the comparison is more fair.

Quality

Contraception is a health area that the healthcare sector is keeping a distant attitude towards. There is a lot happening when the contraception is imported to the country, still to this day, even though PSI is not operating in --- (an African country) there are expired PSI branded contraception in the country.

Effectiveness

In order to measure the effectiveness, there can be a focus on the long term methods. The long term methods are known that they are delivered and they cover a longer term protection. This is also done with results based financing that the providers are incentivized more with long term contraception. If you make sure that the providers are earning more money inserting IUDs implants and injectables, this will generate more impact in the end. So not just calculating the CYPs but having a special focus on long term methods.

Comparison

What do you include in the costs ? Eg the supply chain ? How do measure the results ? Control groups ? PSI uses algorithms which are rather biased.