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Impacts of a Government Social Franchise Model on Perceptions of Service Quality and Client Satisfaction at Commune Health Stations in Vietnam

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Abstract

This study evaluates behavioral outcomes associated with a new approach - the Government Social Franchise (GSF) model - developed to improve reproductive health and family planning (RHFP) service quality and capacity in Vietnam's commune health stations (CHSs). A quasi-experimental design with a matched control group assessed GSF model effects on client perceptions of serviced quality and satisfaction. Survey data from 1181 users and potential users were collected at baseline, six months and 12 months after implementation of the franchise network. Regression analyses controlled for baseline differences between intervention and control groups. CHS franchise membership was significantly associated with improvement of community perceptions of service quality and client satisfaction as well as their likeliness to return and recommend low cost, community-based RHFP services to others. This study provides preliminary evidence regarding the ability of the GSF model to increase client satisfaction with RHFP services in primary public health care clinics.

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INTRODUCTION

The social and economic reform formally introduced in Vietnam in 1986 has shifted the country from its centrally planned system to a market oriented one. Health sector reform began three years later with the partial privatization of health services. The government allowed private health care practices, commercias supplies of pharmaceuticals, and fee-for-services for certain public health care services. In efforts to improve the overall reproductive health (RH), the government of Vietnam and the Ministry of Health have been implementing a National Population Strategy and a National Strategy for Reproductive Health (2001-2010) to ensure universal access to quality reproductive health services throughout the country.

The health system of Vietnam consists of four levels: the national level with the Ministry of Health at the top; the provincial level with the Provincial Department of Health and provincial hospitals; the district level with district health centres (DHC) and district hospitals; and the communal level with commune health stations (CHSs). As the basic unit in the primary health care system, CHSs are responsible for providing primary care, including RH and family planning (FP) services, to local people. Primary health care services are subsidized by the government and people are entitled to free services at their local CHS but not at the CHS in other communes. Therefore, people have little incentive to seek primary health care from CHSs outside their residential commune. RH services provided in a typical CHS include ante-natal care, delivery services, postnatal care, and family planning (FP). However, CHSs located close to a DHC or a provincial hospital are restricted from providing delivery services.

Compared to other developing countries in the same range of GDP per capita, the health system in Vietnam has obtained significant achievements in preventive and curative health care, particularly in the area of maternal and child health. Still, people's perceived and actual needs of reproductive health care are substantially unmet, especially among the poor, people living in mountainous areas, and ethnic minorities. Unmet needs are reflected in low percentages of pregnant women receiving pre-natal care and health professional-attended deliveries, and high abortion rates (an estimated 40 percent of pregnancies ending up in termination) (UNFPA, 2005). Quality of health services at CHSs was perceived as low and associated with unqualified health staff, outdated equipment, limited drugs and supplies (MOH & WHO, 2007). The "asking-for and giving" mechanism, referring to the common situation in which people had to ask for a public service, which was then delivered as a favour, has long existed in health care practices, especially with services subsidized by the government. CHS staff believed that their responsibility is only to fulfil the government quota for the services they provide regardless of clients' satisfaction. There is an increasing trend of patients seeking health care at private clinics or bypassing CHSs to go to district or provincial hospitals (Khe, Xuan, Eriksson, Hojer, and Diwan 2002). This has resulted in a low utilization of reproductive health services at CHSs including antenatal care, delivery services, and family planning (Duong, Lee, and Binns 2005).

Social Franchise Model of Reproductive Health

Application of commercial market strategies to promote the provision and utilization of contraceptives and reproductive health services has been one of the new directions in the

field of reproductive health. The model of social franchising reproductive health services has been developed and implemented in several developed and developing countries (Stephenson, Tsui, Sulzbach, et al, 2004). It was originated from contraceptive social marketing programs, which aimed to increase awareness of family planning and to improve availability and accessibility of contraceptives.

The social franchised network is organized by a franchisor, usually a non-governmental private organization. Health care providers are selected to join the social franchise as franchisees. Social franchising of health facilities currently exists in two forms: “stand-alone” and “factional” models. In the stand-alone model, all services in a facility are franchised, while in the factional model, only a portion of the services in a facility join the franchise. A franchised facility seeks to provide a uniform set of services under its brand name with predefined quality of care and costs. Social franchising of reproductive health services is different from commercial franchising in that in the former, franchisers and donors rather than franchisees, bear the financial risks from setting up a site or establishing the services (Stephenson et al, 2004, Smith 1997).

Social franchising of health facilities is a mechanism to increase the provision and utilization of reproductive health and family planning services in low- and middle-income settings. It could benefit both health care providers and clients. Joining a franchise, health care providers have opportunities for training, increased promotion, increased clientele and revenue, and an expanded range of services (Stephenson et al, 2004). Franchise membership can help increase volume of general and family planning clients and the range of contraceptive method brands. At the client level, social franchising model helps improve clients’ perceptions of service quality, satisfaction and

the likelihood of their returning and recommending franchised outlets for services to others (Agha, Karim, Balal, and Sosler, 2007; Agha, Karim, and Balal, 2007; Decker and Montagu, 2007; Stephenson et al, 2004).

The effectiveness of social franchising reproductive health model can vary in different cultural settings. This study is intended to evaluate the effectiveness of a social franchise model in the public health care (referred to as the government social franchise [GSF] model) tested for the first time at CHSs in Vietnam. We investigate whether the GSF model improves the clients' satisfaction and perceptions of service quality and assess the extent to which franchising can be applied in the public health sector in a developing country context.

SETTINGS AND GSF PROGRAM

The GSF model including settings, social franchise principles and approach are fully described elsewhere (Ngo, Alden, Nguyen, and Dinh, 2009). As a response to the unmet demand for high-quality RHFP services in the communities, and with funding from a major private foundation (The ATLANTIC Philanthropies) and technical assistance from an international NGO (Marie Stopes International Viet Nam, [MSIVN]), two provincial departments of health in Da Nang and Khanh Hoa Provinces (central Vietnam) undertook a three-year project to enhance the service capacity of CHSs clinics. Based on a "needs assessment" conducted in 2006 and the successful experience of private sector social franchising, the two provincial health departments and MSIVN developed a new model of fractional (partial) social franchising for publicly provided RHFP services. It was

referred to as the Government Social Franchise (GSF) network in which Provincial Departments of Health serve as *Franchisor* and CHSs as *Franchisees*.

To become a member of the GSF network, CHSs had to first be solicited by the franchisor. Invitation was extended to 10 CHSs in Da Nang and 28 CHSs in Khanh Hoa. All CHS invitees either had met or had the potential to meet the standardized 'brand promise' within the early stages of the GSF launch (for example, upgraded building facilities and waiting area, completion of social marketing training, adoption of service quality evaluation program, and so forth).

Once invited, but prior to launching the GSF in July 2007, all CHS franchise staff underwent extensive training beginning in February, 2007. Instruction was provided by local trainers who had received professional training on social franchising, service quality evaluation, and social marketing, etc. This training focused on: customer relationship management; service quality evaluation; financial sustainability; social marketing and branding; and clinical instruction on RHFP service delivery. Additionally, CHS doctors and midwives received specialized training on quality of care and clinical training.

During the same period, prior to the launch, a professional marketing communications firm developed a franchise-wide GSF branding program. The client population and CHS service providers offered extensive inputs prior to finalization of franchise parameters. Specifically, formative research explored clients' expectations of quality services and identified communication strategies that were culturally and contextually relevant to the franchise target market in Vietnam. All communication materials were pre-tested with the target audience prior to launch.

A brand-name, *Tinh Chi Em* (Sisterhood), was adopted following consultation with the target audience regarding its underlying meanings associated with the proposed

franchise. *Tinh Chi Em* was meant to emphasize the sisterhood and the empowerment of women through use of RHFP services. It was also found to communicate closeness, friendliness, sharing, and caring - service quality attributes that clients expected from their RHFP provider. To promote a consistent brand image and to respond to clients' stated desire for more information about RHFP services, a *Tinh Chi Em* “branded room” was planned as a requirement for all franchise members. The “branded room” was designed as a physical representation of the brand promise and key values - a comfortable place where clients would be respected and treated with understanding. Finally, during this pre-launch period, several workshops were held to achieve "buy-in" of the standardized franchise program from stakeholders (for example, provincial, district, and commune government officials, health authorities as well as CHSs).

The GSF network was formally launched in July, 2007 with the opening of 10 franchises in Da Nang and 5 in Khanh Hoa. The remaining 23 franchises in Khanh Hoa were opened in late September and early November, 2007. After the launch of *Tinh Chi Em* in July, 2007, female clients, their partners and families were encouraged to visit the “branded room.” The inclusion of women’s partners and families in this effort aimed to increase awareness and use of GSF quality services among all potential clients. In addition, in Vietnam, the decision to use RH services often depends on mutual agreement between partners. Hence, exposure of partners to the "branded room" was considered critical to increasing demand for RHFP services through franchised clinics.

At the same time, extensive external marketing activities including road shows, media tours of the social franchise network and dissemination of print media (for example, brochures, leaflets, PSA banners, and local newspapers) were carried out to

raise interest in the new brand. These marketing efforts were designed to "look and feel similar" to cultural and social events in which Vietnamese women and their families already participated in order to attract larger numbers of potential clients. In addition, two paid “brand ambassadors” (one from the Women’s Union and one from the Youth Union) in all communes with GSF franchises were recruited and trained. The "brand ambassadors" were all experienced in working with other community health programs. “Brand ambassadors” encouraged targeted segments (that is, women, their partners and other family members) through face-to-face communications to visit and refer others to the GSF clinics. Most were also connected to the community through involvement with large local organizations. Such connections provided a direct brand communication channel and helped establish a referral network.

A post-launch qualitative evaluation conducted 2 months following the formal opening of the CHS franchise clinic found evidence of improved service quality as well as increased client satisfaction (Ngo et al., 2009). This improvement was reflected in clients’ positive comments on clinic tangibles (that is, appearances, facilities, and equipment), and staff service attitudes (for example, more caring and enthusiastic); and their expressed willingness to pay extra fees for CHS services that they viewed as higher quality.

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METHODS

Evaluation design

To quantitatively assess the effectiveness of the GSF model identified in the post- launch qualitative evaluation, this study seeks to measure the extent to which franchise practices

have improved clients' perceptions of CHS service quality and satisfaction. A quasi-experimental design with pre-test and post-test, using matched control group on 1:1 ratio was applied. To avoid contamination, 38 control CHSs were recruited in the two neighbour provinces (Quang Nam and Phu Yen), matching with the pre-selected 38 intervention CHSs (in Da Nang city and Khanh Hoa province) on four characteristics: (i) availability of a medical doctor; (ii) geographical location of CHSs (that is, urban or rural); (iii) recent physical upgrade; and (iv) availability of RHFP services. The matched provinces are fairly similar to the intervention provinces in terms of social and cultural characteristic although per capita income is lower in the control groups (General Statistics Office, 2008). In addition, the CHS head's willingness to join the franchise network, which was assessed during the survey interview, was also considered. Other characteristics of the CHSs and communes that may affect service utilization were identified and measured, including distance from CHSs to the DHCs, number of women at reproductive ages and population in the commune, availability of specialised services other than primary health care, availability of government health insurance.

Data and measurement

This study uses data collected from household surveys of users and potential users in a sub-sample of 13 communes conducted at baseline and six months, and 12 months following the full implementation of the GSF model. The interview of clients in their community helps avoid "courtesy bias" (Bertrand, Hardee, Magnani, and Angle, 1995) that may arise from relationships between clients and CHS staff. Control CHSs and communes were not informed of the intervention program in the intervention provinces.

Sampling and sample size calculation

Based on the proportion of users provided by the previous survey (37% in Da Nang and 44% in Khanh Hoa) (MSIV, 2006), a sample size of 673 users/potential-users in Da Nang and Quang Nam and 508 in Khanh Hoa and Phu Yen was determined to have the statistical power of 80% to significantly detect a 20% increase in the proportion of users to the total population at reproductive ages. Since the majority of RH/FP service users are female, the sample was constructed to include no more than 20% males. Two-stage cluster sampling was applied to recruit a demographically representative sample of users/potential users from the communities. The sample plan involved two types of clusters: communes/precincts (primary sampling units), followed by residential groups (listing units). Seven listing units were randomly selected in Da Nang and Quang Nam, and 5 listing units in Khanh Hoa and Phu Yen.

Survey measurement

The questionnaire used in this study was adapted from that of a previous study of service quality and client satisfaction in private clinics in Vietnam (Alden, Do, and Dharm, 2004). We measured client satisfaction, likeliness to return, possibility of recommending the service to others, and ten dimensions of service quality and client satisfaction, including environment structure, waiting area structure, waiting time, consultation time, activities, privacy measures, confidentiality measures, attitudes, explanation, and perceived expertise (Al Qatari and Haran, 1999). The seven-point Likert scales (for example, high to low quality; knowledgeable to ignorant, very satisfied to very dissatisfied) were used for all those measures. Before interviews, the Vietnamese version of the questionnaire was reviewed by focus group with women in each of the four

provinces for its relevance, comprehensibility, and appropriate ways of asking questions on seven-point Likert scales. Modifications were then made to maximize the comprehension and desensitize the questions. The final questionnaire included 13 items measuring client assessment of service quality, three items measuring client satisfaction, and two items measuring client's likelihood to return and recommend the model to others. In addition, there were several demographic items, a measure of general perception of the community about CHS service quality and staff expertise, and respondents' experience using RHFP and other services.

Factor analysis, using the baseline data, was conducted on the following measures: client satisfaction, likeliness to return, and likeliness to recommend the model to others as primary outcomes of interest. The redefined measures of service quality were used as secondary outcomes to predict these three primary outcome measures. Only items that predict primary outcome measures and fit in the measurement model were considered as outcomes of the intervention.

Insert table 1 here

Interview procedures

In each selected residential group, data collectors approached households from 5-8 p.m. or during weekends to interview all household members aged 15-49. Out of a total of 13 selected residential groups each arm, all males and females were interviewed in six residential groups. In the other seven groups, only females were interviewed. For Likert scale questions, a comment card displaying the seven-point scales was presented to respondents to help elicit a response. A list of respondents and their home addresses compiled from the baseline survey was used to contact and make appointment with

respondents for follow-up interviews in the two subsequent surveys. All respondents were asked about their general perceptions of the CHS service quality and staff expertise regardless whether they have used CHS services. Only those who had visited their local CHS at baseline and those who visited their local CHS during the time between the two surveys were asked questions on their satisfaction, likeliness to return or recommend the model to others, and their assessment of service quality.

Data analyses

Multivariate regression models are fitted for each of the client outcome measures (dependent variables) of the two follow-up surveys: i) client satisfaction; ii) likeliness to return; iii) likeliness to recommend the model to others; iv) and client assessment of each dimension of service quality. The sample size for each model specification of the above outcome measures only included those users who visited their local CHS during the time between the two surveys (Table 4 and 5). In addition, perceptions of the general community on CHS service quality were assessed in separate regression models with analytical samples including both users and non-users (Table 3). For multiple-item outcome measures, average scores of related items were entered into the regression models. The key independent variable in each of the regression models is the franchise status (franchised vs. non-franchised). We hypothesize that franchise membership has a positive effect on the outcome measures. The other explanatory variables include distance from commune to the DHC (5km ≤ distance, 5km<distance ≤10km, 10km<distance); provision of ultrasound test (Yes/No); main reason for visiting the CHS in the last visit;

demographic characteristics (marital status, number of children, education, and occupation) and baseline differences of the outcome measures.

RESULTS

Sample description

Two CHSs in the intervention group failed to meet the brand promise criteria and membership commitments and thus were excluded from the network. This exclusion resulted in a total of 36 CHSs in each group in the final evaluation. Table 2a presents baseline characteristics of selected CHSs. There was a statistical difference in two CHS measures: distance to from commune to the DHC and the provision of ultrasound test service ($p<0.05$).

Insert table 2a here

The baseline survey included 1181 individuals each arm. Response rate was almost similar in the intervened and control groups. At the first follow-up survey response rates were 90% in franchise communes, and 91% in non-franchise communes. At the second follow-up survey response rate were 82% in franchise communes, and 80% in non-franchise communes. Table 2b presents baseline demographic characteristics of the surveyed participants in the first follow-up sample. Although, there were statistically significant differences across the two groups except gender and residential location, inclusion of the demographic variables in the regression models controlled for possible confounds.

The changes in Likert scores measuring client perceptions of and satisfaction with services quality

Likert scale scores measuring general community perceptions of service quality and staff expertise increased in the two groups. The scores measured other outcomes in the intervention group were unchanged or slightly declined, while the scores in the control groups all decreased. For example, Likert scale scores for client satisfaction in franchise communes were 6.09 at baseline, 6.0 at the first follow up, and 6.08 at the second follow up. The corresponding figures of the control communes were 5.95, 5.83, and 5.81.

Association between franchise membership and outcome measures

Community perceptions of service quality and staff expertise. Table 4 presents the regression results of the relationship between franchise membership and changes in scores that measure local residents' perception of service quality and staff expertise at their local CHS regardless of whether they have ever visited the CHS clinic. There was a significant positive association between franchise membership with the improvement in residents' assessment of service quality (coeff = 0.18 at the first follow-up and 0.19 at the second follow-up survey). Franchise membership is also significantly associated with improvements in residents' assessment of staff expertise (coeff = 0.17 at the first follow-up and 0.19 at the second follow-up survey). Other factors were also associated with these outcome measures. At the CHS level, the second follow-up survey found that people residing in communes that were more than five km from the DHC gave significantly lower scores than those in communes that were five km or less from the DHC when rating these two attributes of the CHS service quality. There was a significant

positive association between the provision of ultrasound test with the increased perceptions of service quality at both the baseline and follow-up survey (coeff = 0.17 and 0.16, respectively) and perceptions of staff expertise at the first follow-up survey (coeff = 0.22). At the individual level, two follow-up surveys found that those who visited their local CHS during the time between the two surveys gave higher scores than those who did not when assessing service quality and staff expertise at their local CHS. Relative to farmers, the first follow-up survey found that those having other occupations gave significant lower scores when rating their local CHS's service quality and staff expertise (Coeff=-0.21 for students, -0.12 for housewife/unemployed, and -0.12 for other occupational groups).

Insert table 3 here

Client perceptions of service quality. Factor analysis found that the measurement model was only fitted to 7 out of 13 items measured in the survey. These items include: staff expertise (two items); staff attitudes (three items), and CHS environment structure or clinic tangibles (two items) (Table 1). Table 4 presents the results of modelling association between franchise membership and Likert-scale measures of clients' perceptions of service quality in terms of staff expertise, staff attitudes, and tangibles of the CHS clinic. Franchise membership is associated with a statistically higher scores measuring clients' perceptions of staff attitudes (coeff=0.16 at the first follow-up, and 0.31 at the second follow-up) and the CHS clinic tangibles (coeff=0.37 at the first follow-up, and 0.36 at the second follow-up). It should be noted that the increase in clients' attitude scores is much greater at the second follow-up survey (Coeff=0.31 vs. 0.16).

However, there is no statistically significant association between franchise membership and clients' assessment of staff expertise at both the first and second follow-up survey.

Insert table 4 here

Other factors were also significantly associated with clients' perceptions of service quality. Of the CHS measures, there was a significant positive association between the provision of ultrasound test service and clients' perceptions of staff expertise at both first and second follow-up survey (coeff=0.21 and 0.25, respectively). This outcome measure was also significantly associated with clients' perceptions of staff attitudes at the first follow-up (coeff= 0.16). At the client level, the first follow-up survey found some other factors statistically associated with clients' perceptions of service quality. Clients visiting their local CHS for Gyn/Obs checks up (including IUD) gave higher scores when rating staff attitudes than those coming there for general health services (Coeff=0.16). Also, clients who at least finished high school or more gave higher scores when assessing staff attitudes in their last visit than those who had a lower level of education (coeff=0.15), and clients who did other jobs than students, housewife or unemployed gave lower scores when rating the CHS clinic tangibles than those who were farmers (coeff= -0.13).

Client satisfaction, likeliness to return, and likeliness to recommend others. Table 5 represents results of modelling client satisfaction, likeliness to return, and likeliness to recommend others in association with franchise membership. Franchise membership is significantly associated with increased Likert scale scores measuring client satisfaction at both first and second follow-up survey (coeff=0.16 and 0.18, respectively). For measures of client likeliness to return and likeliness to recommend to others, a significant

association was only found at the second follow-up survey (coeff=0.30 and 0.20, respectively).

Insert table 5 here

Of other independent variables, provision of ultrasound test service was significantly associated with increased client satisfaction at both the first and second follow-up survey (Coeff=0.19 and 0.20, respectively) and with likeliness to return and likeliness to recommend to others at the first follow-up survey only (Coeff=0.19 and 0.24, respectively). Of demographic variables, ever married clients were more likely to satisfy with services rendered at their local CHSs than those who were single at baseline in the second follow-up survey (Coeff=0.33); and those who at least finished high school were more likely to return than those who had lower level of education at the first follow-up survey (Coeff=0.14).

DISCUSSION

Findings from this evaluation indicate that the GSF model has produced positive impacts at both the community and client level. The GSF model was significantly associated with improved perceptions of both users and potential users about the CHS RHFP service quality and service providers' expertise. This achievement reflects effectiveness of concentrated marketing efforts to promote the brand name and RHFP services in the wider community. The surveys on users that experienced CHS service use after the formal launching the GSF model found that the intervention program improved client assessment of service quality in two dimensions including staff service attitudes and the CHS clinic tangibles at both the first and second follow-up. At the same time, client

satisfaction and likeliness to return or recommend the CHS services to others also increased but the improvement was observed only in the responses to the second follow-up survey. This discrepancy means that it would have taken a longer time for CHSs to benefit from the GSF model, having more clients to return and new clients referred by existing clients.

There was statistical evidence on the association between types of service use and staff attitudes. Relative to clients who used general health services, the first follow-up survey found that clients who visited their local CHSs for Gyn/Obs check-up were more likely to be pleased with staff service attitudes (Coeff=0.16). This finding is consistent with the focus of the intervention on RHFP services. Furthermore, a lack of significant association between almost all client demographic characteristics and the outcome measures suggests the robustness of concentrated marketing efforts and the staff training program. The intervention has produced impacts on clients regardless of their socio-economic and demographic background.

Among measures of CHS features, the provision of ultrasound test, one specialized service that was not subsidized by the government, was significantly associated with several outcome measures at both the community and client level. Residents living in communes where this service is available at their local CHS gave higher scores when rating service quality and staff expertise. Relative to CHSs without ultrasound test service, clients there were more likely to appreciate the level of staff expertise (coeff=0.21 at fist follow-up and 0.25 at second follow-up; $p<0.05$), more likely to be satisfied with services rendered (coeff=0.19 at fist follow-up and 0.20 at second follow-up; $p<0.05$), and more likely to return for subsequent visits (coeff=0.19 at fist

follow-up; $p<0.05$). As fees for this service came from the clients' pocket, this positive evaluation of service quality complements findings from the qualitative evaluation that clients prefer high-quality services at affordable prices to "free" services perceived as low quality (Ngo et al., 2009). Thus, efforts to standardize affordable service fees and improve service quality in franchised CHSs could have helped clients see value in services they received and better met their perceived needs for high-quality services.

A lack of statistical evidence on increased clients' perceptions of service providers' expertise challenges franchising efforts in improving clinical and professional competency of service providers. Perhaps, the staff training program was unable to improve staff expertise to the level that meets clients' expectations or one year following the full implementation is insufficient for the model to produce an impact on this outcome. Perhaps, greater emphasis should be placed on improving service providers' clinical skills in any future franchising program.

Strengths of this evaluation are noteworthy. First, a quasi-experimental design with a matched control group selected from a neighbor province with fairly similar socio-cultural characteristics increases the comparative evaluation's internal validity. Second, the evaluation assesses the GSF model's impact on behavior of both clients and potential clients in the community, using multiple outcome measures. Third, with 2 follow-up surveys that had a reasonably high response rate, the time trend in behavioral outcomes was taken into account when evaluating the intervention's impact.

Our evaluation has several limitations. Firstly, outcome data primarily based on self-reports without health outcome measures (for example, mobility) prevent objective assessment of service quality. The changes in clients' perceptions of service quality may

have been driven by franchise membership advertising, not necessarily reflecting improvements in service quality. However, the consistent change in client satisfaction in two follow-up surveys implies that this possibility is minimal. Secondly, the 12-month follow-up may not be sufficient to access the sustainability of the intervention after the GSF model ended. Thirdly, intervews conducted at household after clients' visit to their local CHS may be subject to recall bias.

CONCLUSIONS

Regardless of different plausible causal pathways, findings from this evaluation indicate that the GSF model piloted for the first time in Vietnam has been effective in dissipating previous perceptions of CHSs as low quality, and has increased client satisfaction at low-cost community based RHFP services. Integration of franchising into primary public health care offers an opportunity for a feasible and sustainable business model. Franchised CHSs can generate income from their services to reinvest in their facilities, technology and equipment and thus meet client expectations on high quality services. As quality of services should meet both clients' medical and psychological needs and socially accepted (Mendoza, Piechulek, and A Al-sabir., 2001), enhancement of quality of care should be carried out along with social marketing and communication efforts to improve clients' perceptions of service quality and promote quality services in wider communities. At the same time, staff service attitudes should be considered as important as their clinical and technical expertise in future social franchise intervention program.

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Table 1. Seven point Likert-scale items measures of service quality and client satisfaction

General perceptions (two separate items)

Evaluate the overall quality of the RHFP services provided by your local CHS based on your own experience and/or on what you heard from others

Evaluate service providers' expertise at your local CHS based on your own experience and/or on what you heard from others

Expertise (alpha =0.72)

CHS staff was very ignorant/very knowledgeable abut RHFP

The advice from CHS health staff was not trustworthy at al/very trustworthy

Attitudes (alpha =0.86)

Staff at CHS were very unwilling/very willing to help whenever you visit CHS

CHS health staff did not care at all/care a lot about you at your visit

CHS health staff treated me with a lot of disrespect/a lot of respect whenever you visit

CHS clinic tangibles (alpha =0.81)

The CHS clinic facilities overall were very dirty/very clean

Equipment used by the CHS clinic was very dirty/very clean

Client satisfaction (alpha =0.90)

Were you satisfied with types of RHFP services provided

Were you satisfied with the support given while receiving RHFP services

Overall, were you satisfied with CHS RH/FP services

Likeliness to return/recommend others (two separate items)

How likely would you return to the CHS for RHFP services

How likely would you recommend CHS to others

Table 2a. Baseline characteristics of CHSs

	Intervention (n=36)		Control (n=36)	
	n	**%**	**n**	**%**
Location**				
Urban	14	39	14	39
Rural	22	41	22	41
Having a doctor**	26	72	26	72
Being upgraded**	36	100	36	100
Distance from the DHC				
5km or less	13	36	24	66*
6-10 km	10	28	9	25
More than 10km	13	36	3	9*
Not providing delivery service**	6	17	6	17
Having ultrasound test	5	14	0	0*
Implementing health insurance	36	100	36	100

*p<0.05; ** Matching variable

Table 2b. Baseline characteristics of surveyed respondents

	Intervention		Control			Intervention		Control	
	n	**%**	**n**	**%**		**n**	**%**	**n**	**%**
Gender					**Religion***				
Male	127	12.6	143	13.3	Buddhism	497	46.6	167	15.5
Female	939	93.3	934	86.7	Protestant	0	0	48	4.5
Age (years)					Catholic	103		19	1.8
15-19*	133	13.2	83	7.7	Praying ancestors	67	9.7	168	15.6
20-29	272	27.0	256	23.8	Non-religion	398	37.3	668	62
30-39*	374	77.2	434	40.3	Other	1	0.1	7	0.6
40-49	287	28.5	304	28.2	**Education***				
Marital status*					Secondary or less	667	62.6	766	71.1
Single	268	26.6	148	13.7	High or more	399	37.4	311	28.9
Other	798	79.3	929	86.3	**Occupation***				
Number of children*					Farmer/Fishery	161	15.1	430	39.3
None	236	23.5	98	9.1	Student	134	12.6	79	7.3
1-2	539	53.6	658	61.1	Housewife/unemployed	399	37.4	302	28.0
More than 2	291	28.9	321	29.8	Other	372	34.9	266	24.7
					Residential location				
					Urban	413	38.7	444	41.2
					Rural	653	61.3	633	58.8

*Statistically different between intervention and control (p<0.05)

Table 3. Association between franchise membership and general perceptions of users/potential users about CHS service quality and providers' expertise

Explanatory Variables	Quality (Dependent variable)		Expertise (Dependent variable)	
	First follow up (n=2127)	**Second follow (n=1911)**	**First follow up (n=2119)**	**Second follow up (n=1907)**
Baseline	0.21(0.18, 0.25)	0.20 (0.16, 0.23)	0.22(0.18, 0.26)	0.19(0.15, 0.22)
CHS MEASURES				
Non-franchised				
Franchised	*0.18(0.09, 0.26)**	*0.19(0.11, 0.27)**	*0.17(0.09, 0.26)**	*0.19(0.11, 0.28)**
Distance to DHC				
5 km or less	Ref	Ref	Ref	Ref
5<distance≤10 km	-0.08(-0.18, 0.02)	*-0.11(-0.21, 0.02)**	-0.10(-0.20, 00.00)	*-0.11(-0.20, -0.01)**
More than 10km	-0.04(-0.18, 0.09)	*-0.15(-0.28, 0.02)**	-0.11(-0.24, 0.030	*-0.19(-0.33, -0.06)**
Ultrasound test				
No	Ref	Ref	Ref	Ref
Yes	*0.17(0.04, 0.30)**	*0.16(0.02, 0.29)**	*0.22(0.09, 0.35)**	0.07(-0.06, 0.20)
Visiting the CHS				
No	Ref	Ref	Ref	Ref
Yes	*0.26(0.18, 0.34)**	*0.22(0.14, 0.03)**	*0.25(0.16, 0.33)**	*0.22(0.14, 0.30)**
Marital status				
Single	Ref	Ref	Ref	Ref
Ever married	0.13(-0.05, 0.30)	0.11(-0.06, 0.27)	-0.16(-0.33, 0.020	0.07(-0.10, 0.24)
Number of children				
None	Ref	Ref	Ref	Ref
1-2	-0.13(-0.31, 0.04)	-0.01(-0.18, 0.15)	0.07(-0.10, 0.25)	-0.07(-0.25, 0.10)
More than 2	-0.13(-0.29, 0.04)	0.02(-0.13, 0.18)	0.00(-0.16, 0.17)	-0.06(-0.22, 0.10)
Education attainments				
Secondary school or less	Ref	Ref	Ref	Ref
High school or more	0.09(-0.00, 0.18)	-0.03(-0.11, 0.06)	0.05(-0.04, 0.14)	-0.02(-0.10, 0.07)
Occupation				
Farmer	Ref	Ref	Ref	Ref
Students	-0.13(-0.32, 0.06)	0.19(0.00, 0.37)	-0.13(-0.32, -0.06)	0.08(-0.11, 0.27)
Housewife/unemployed	-0.08(-0.19, 0.03)	-0.01(-0.12, 0.09)	-0.08 (-0.19, 0.03)	-0.11(-0.22, 0.00)
_Other	-0.06(-0.17, 0.04)	0.05(-0.05, 0.16)	-0.06(-0.17, -0.04)	-0.05(-0.16, 0.06)

*$p<0.05$

Table 4. Association between franchise membership and perceptions of service quality: expertise, attitude, and cleanness (Coeff and 95% CIs)

Explanatory Variables	Expertise (Dependent variable)		Attitudes (Dependent variable)		Clinic tangibles (Dependent variable)	
	First follow up (n=826)	**Second follow up(n=676)**	**First follow up (n=827)**	**Second follow up(n=675)**	**First follow up(n=825)**	**Second follow up(n=674)**
Baseline	*0.21(0.14, 0.27)**	*0.25(0.18, 0.33) **	*0.22(0.16, 0.28) **	*0.21(0.14,0.27*)*	*0.20(0.14, 0.26) **	*0.15(0.08, 0.23) **
CHS FEATURES						
Non-franchised	Ref	Ref	Ref	Ref	Ref	Ref
Franchised	-0.01(-0.12, 0.23)	0.10(-0.02,0.23)	*0.16(0.04,0.27)**	*0.31(0.19,0.43)**	*0.37(0.26,0.49)**	*0.36(0.23, 0.50)**
Distance to DHC						
5 km or less	Ref	Ref	Ref	Ref	Ref	Ref
5<distance≤10 km	-0.01(-0.13, 0.11)	-0.02(-0.15, 0.11)	0.00(-0.12,0.12)	0.01(-0.19,0.21)	0.03(-0.16, 0.22)	0.02(-0.20, 0.24)
10km or more	-0.03(0.22, 0.16)	0.02(-0.19, 0.23)	0.03(-0.16, 0.23)	0.03(-0.16,0.22)	0.02(-0.14, 0.17)	0.05(-0.16, 0.26)
Ultrasound test						
No	Ref	Ref	Ref	Ref	Ref	Ref
Yes	*0.21(0.25,0.36)**	*0.25(0.05, 0.44)**	*0.13(0.03,0.29*)*	0.00(-0.12,0.12)	-0.10(-0.21,0.02)	0.04(-0.09, 0.18)
Reason for attending services						
General health	Ref	Ref	Ref	Ref	Ref	Ref
Gyn/Obs check ups including IDU	0.00(-0.12, 0.12)	0.07(-0.05, 0.18)	*0.16(0.04,0.29)**	0.10(-0.01,0.21)	0.03(-0.09, 0.15)	0.08(-0.04, 0.20)
Other maternal/child health	0.04(-0.23, 0.31)	-0.04(-0.39, 0.30)	-0.15(-0.57, 0.27)	0.12(-0.20,0.44)	0.10(-0.17, 0.37)	0.02(-0.34, 0.38)
Other FP	0.17(-0.16, 0.50)	0.32(-0.15, 0.79)	-0.22(-0.56,0.12)	0.35(-0.01,0.80)	-0.15(-0.48, 0.18)	0.36(-0.13, 0.86)
Marital status						
Never married	Ref	Ref	Ref	Ref	Ref	Ref
Ever married	0.00(-0.30, 0.31)	-0.09(-0.45, 0.27)	0.09(-0.22,0.40	0.26(-0.08,0.60)	0.05(-0.25, 0.35)	0.09(-0.29, 0.47)
Number of children						
None		Ref				
1-2 children	0.04(-0.26, 0.34)	0.17(-0.24, 0.59)	-0.08(-0.38,0.23)	0.10(-0.29,0.50)	-0.08(-0.38, 0.21)	0.24(-0.20, 0.68)
More than 2	-0.02(-0.32, 0.28)	0.21(-0.21, 0.63)	-0.08(-0.39,0.24)	0.14(-0.26,0.53)	-0.13(-0.43, 0.17)	0.20(-0.25, 0.64)
Education						
Secondary school or less	Ref	Ref	Ref	Ref	Ref	Ref
High school more	0.06(-0.06, 0.18)	0.06(-0.19, 0.07)	*0.15(0.03,0.28)*	-0.05(-0.18,0.07)	0.07(-0.05, 0.18)	-0.06(-0.20, 0.07)
Occupation						

Farmer	Ref	Ref	Ref	Ref	Ref	Ref
Student	0.05(-0.62, 0.72)	0.24(-0.53, 1.01)	-0.33(-1.02, 0.36)	0.53(-0.20,1.26)	-0.19(-0.85, 0.47)	0.26(-0.55, 1.07)
Housewife/unemployed	-0.03(-0.17, 0.10	-0.02(-0.17, 0.13)	-0.05(-0.19, 0.09)	0.01(-0.13,0.15)	-0.04(-0.18, 0.09)	-0.01(-0.17, 0.15)
Other	-0.04(-0.17, 0.09)	-0.03(-0.17, 0.11)	-0.07(-0.21, 0.06)	0.05(-0.08,0.19)	*-0.13(-0.26, -0.01)**	0.01(-0.14, 0.16)

*p<0.05

Table 5. Association between franchise membership with client satisfaction, likeliness to return, and likeliness to recommend other (Coeff and 95% CIs)

Explanatory Variables	Satisfaction (Dependent variable)		Likeliness to return (Dependent variable)		Likeliness to recommend others (Dependent variable)	
	First follow-up(n=827)	**Second follow-up(n=677)**	**First follow up(n=824)**	**Second follow up(n=676)**	**First follow up(n=828)**	**Second follow up(n=676)**
Baseline	*0.25 (0.19,0.31)**	*0.22 (0.17,0.28)**	*0.15 (0.09-0.21)**	*0.15 (0.09,0.22)**	*0.18 (0.12-0.24)**	*0.24 (0.18-0.30)**
CHS FEATURES						
Non-franchised	Ref	Ref	Ref	Ref	Ref	Ref
Franchised	*0.16 (0.05-0.27)**	*0.20 (0.09,0.31)**	0.04 (-0.09,0.18)*	*0.32 (0.19,0.44)**	-0.02 (-0.17,0.13)	*0.2 2(0.08,0.36)*
Distance to DHC						
5 km or less	Ref	Ref	Ref	Ref	Ref	Ref
5<distance≤10 km	0.03 (-0.08,0.15)	0.02 (-0.09,0.13	0.03 (-0.10,0.17	-0.06 (-0.19,0.08)	0.04 (-0.12,0.19)	-0.08 (-0.23,0.06)
10km or more	0.02 (-0.17,0.20)	-0.02 (-0.21,0.16)	-0.15 (-0.37,0.06)	-0.05 (-0.28,0.17))	-0.01 (-0.25,0.24)	-0.05 (-0.28,0.18)
Ultrasound test						
No	Ref	Ref	Ref	Ref	Ref	Ref
Yes	*0.19 (0.04,0.34)**	*0.20 (0.02,0.37)**	***0.19 (0.01,0.37)****	0.09 (-0.12,0.30)	***0.24 (0.03,0.44)****	0.10 (0.02,0.22)
Reason for attending services						
General health	Ref	Ref	Ref	Ref	Ref	Ref
Gyn/Obs check ups including IDU	0.03 (-0.09,0.14)	0.07 (-0.07,0.12)	0.06 (-0.08,0.20)	0.08 (-0.04,0.20)	0.15 (-0.10,0.30)	0.04 (-0.16,0.25)
Other maternal and child health	0.17 (-0.09,0.43)	-0.16 (-0.44,0.11)	0.23 (-0.08,0.54)	0.10 (-0.26,0.47)	0.17 (-0.36,0.70)	-0.25 (-0.60,0.09)
Other FP	-0.07 (-0.39,0.26)	0.31 (-0.07,0.70)	-0.20 (-0.58,0.18)	0.40 (-0.10,0.91)	-0.1 (-0.53,0.33)	0.24 (-0.25,0.73)
Marital status						
Never married	Ref	Ref	Ref	Ref	Ref	Ref
Ever married	-0.02 (-0.32,0.27)	***0.33(0.02,0.65)****	0.20 (-0.15,0.55)	0.29 (-0.10,0.67)	-0.08 (-0.48,0.32)	0.12 (-0.28,0.52)
Number of children						
None	Ref	Ref	Ref	Ref	Ref	Ref
1-2 children	0.05 (-0.24,0.34)	-0.04 (-0.41,0.32)	-0.08 (-0.43,0.27)	-0.19 (-0.64,0.26)	0.14 (-0.26,0.53)	-0.01 (-0.48,0.46)
More than 2	0.03 (-0.27,0.32)	0.02 (-0.35,0.38)	-0.13 (-0.48,0.22)	-0.18 (-0.63,0.28)	0.04 (-0.36,0.44)	-0.02 (-0.49,0.46)
Education						
Secondary school or less	Ref	Ref	Ref	Ref	Ref	Ref
High school more	0.09 (-0.03,0.21)	0.02 (-0.1,0.13)	0.14 (0.00,0.28)	-0.04 (-0.18,0.10)	0.10 (-0.06,0.25)	-0.08 (-0.23,0.06)
Occupation						
Farmer	Ref	Ref	Ref	Ref	Ref	Ref
Student	-0.01 (-0.67,0.64)	0.22 (-0.45,0.89)	-0.08 (-0.93,0.77)	0.24 (-0.70,1.17)	0.28 (-0.69,1.25)	0.44 (-0.53,1.41)
Housewife/unemploye	-0.01	-0.02	0.03	-0.03	0.02	-0.01

d	(-0.15,0.12)	(-0.16,0.11)	(-0.13,0.19)	(-0.19,0.13)	(-0.16,0.20)	(-0.18,0.16)
Other	-0.01 (-0.14,0.11)	0.05 (-0.07,0.17)	-0.04 (-0.19,0.11)	0.02 (-0.13,0.17)	0.00 (-0.16,0.17)	0.04 (-0.11,0.20)

*$p<0.05$