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Family Planning TRaC Study: Determinants of Oral Contraceptive Use Among Zambian Women (Second Round)

Society for Family Health

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Summary

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Background and Research Objectives: Between August and October 2007, Society for Family Health (SFH) conducted a household survey designed to investigate the changes in contraceptive use and behavioural indicators among Zambian women since 2005, the determinants of oral contraceptive use, and the impact of SFH's oral contraceptive program activities. This survey was a follow-up to a baseline survey that was conducted in 2005.

Description of Intervention: Society for Family Health (SFH) social markets oral contraceptives, male and female condoms, and will soon be introducing injectable contraceptives to the Zambian market. The reproductive health program includes behavior change communications campaigns that promote the benefits of family planning and advertise the availability of contraceptive products, with the goal of increasing use. SFH introduced Safeplan oral contraceptives in 1996 as a safe and effective way to space births and achieve a healthy family. SFH distributes the product through pharmacies, drugstores, clinics and community-based distributors—making it one of the most widely available contraceptive brands in the country.

Methodology: Face to face individual interviews were conducted to collect the data. Female respondents, aged 15-49, were randomly sampled from households in all of Zambia's 9 provinces. The analysis included logistic regression to identify determinants of the desired behaviour. The evaluation analysis was based on two cross sectional survey rounds (September 2005 and August to October 2007). Results are presented in standard PSI Dashboard form.

Main Findings The survey found that contraceptive use increased among women wanting to space their next birth (45% to 56%) as well as those wanting to limit future births (47% to 64%). Women reporting that they are currently using a family planning method also increased significantly from 45% in 2005 to 57% in 2007. The use of oral contraceptives, however, remained stable at 21% in 2007 compared to 20% in 2005. The study also uncovered behavioural determinants correlated with oral contraceptive use: self-efficacy and knowledge were more consistently indicated followed by intentions, availability, brand appeal, and social norms. SFH family planning communications were found to have a positive

impact on contraceptive use. About 62% of those with high exposure to SFH communications reported having used modern contraceptive methods as compared to 39% of those with no exposure. Exposure to SFH communications is also correlated with the belief that oral contraceptives are safe and the discussion of family planning with a spouse.

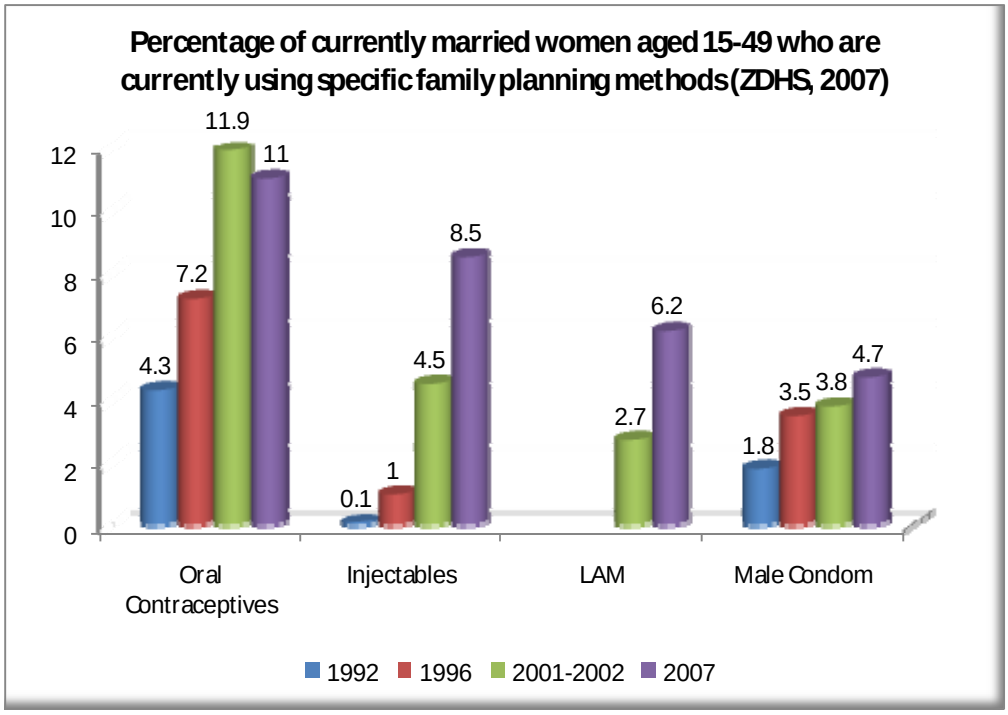
Programmatic Recommendations The results indicate positive trends in health behaviour, knowledge and awareness since the 2005 survey and provide evidence of the effectiveness of social marketing programs in promoting better health practices. These findings imply that family planning programmes should focus on building women's confidence to correctly use oral contraceptives, work to disseminate accurate family planning information, and eliminate myths and misconceptions surrounding modern contraceptive methods. This approach will empower women to make informed reproductive health choices, space or limit births effectively, and achieve a healthy family. Interventions should also focus on increasing availability and coverage of oral contraceptives and communicating its accessibility to women. Integrated, multi-channel communications campaigns are likely to further encourage individual motivation to use oral contraceptives.

Contraception in Zambia

Zambia's birth rate and natural population growth rate are among the highest in Sub-Saharan Africa. The population of Zambia is currently estimated at 12.2 million and is growing at the rate of 2.9 percent each year. The total fertility rate was estimated at 6.2 in 2007 (7.5 in rural areas). Family planning saves lives and has long been considered a key component in socio-economic development. Contraception plays an important role in reducing maternal and newborn morbidity and mortality.

According to the recent Zambia Demographic Health Survey (ZDHS), almost all Zambians have heard of at least one method of contraception, including condoms. The data shows that rising awareness and availability of contraceptive methods has corresponded with an increase in use. Between 1992 and 2007, the use of modern methods increased from 9% to 33%[1] (ZDHS, 2007). The Government of Zambia has played a primary role in increasing access to and use of modern methods to date. In 2007 alone, the Ministry of Health distributed more than 2 million cycles of oral contraceptives and 15 thousand injectable contraceptives (MOH Report, 2007). Increasing acceptability and use of three methods in particular (pills, injectables and LAM) has contributed to gains in modern CPR since 1992. Between 1992 and 2007, current use of oral contraceptives increased from 4% to 11%. Although oral contraceptive use did not increase between the 2001/2 and 2007 ZDHS surveys, the method continues to be the most widely used modern contraceptive method in Zambia. Oral contraceptive users accounts for roughly one third of all modern method users. Since 2001/2, the use of injectable contraceptives and LAM have increased significantly among Zambian women. The Government of Zambia integrated injectable contraceptives into the national reproductive health program in 2005. One study suggests Zambian women appreciate the convenience and concealability of injectables (Ashraf N, Erica F, 2007, Gender, Intrahousehold Decision-making, and the Demand for Children." Working Paper 2008-0028).

[1] Some of this increase is due to the fact that lactational amenorrhea (LAM) was included in this calculation in 2007, whereas previous surveys had treated LAM as a traditional method.

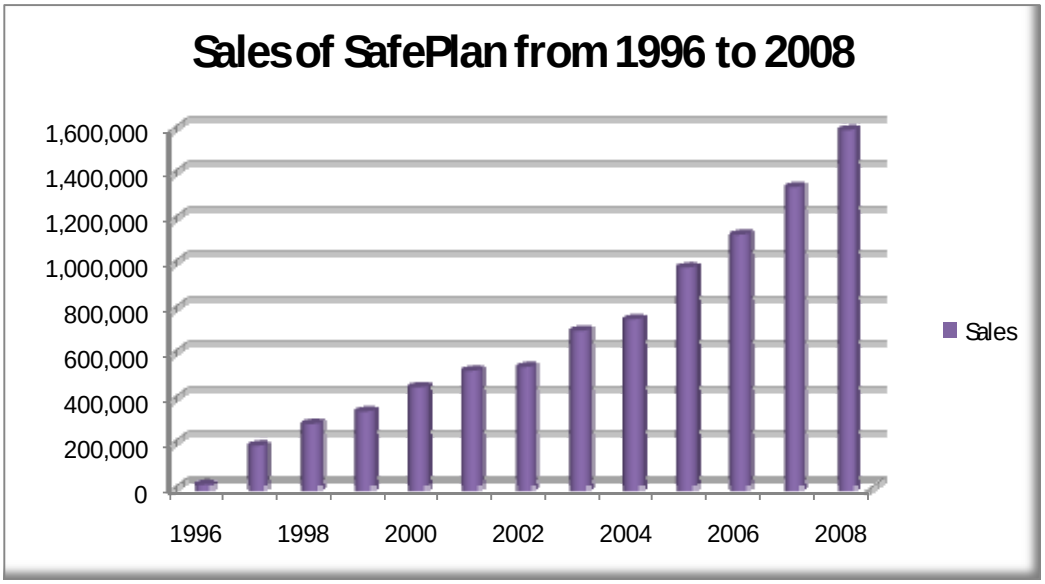


Despite increasing contraceptive prevalence over time, many women still have a considerable unmet need for family planning services. For example, 27.4% of married women surveyed by the 2001/2002 ZDHS report wanting to delay or limit future births, but are not using contraception; 16.8% of these women report an unmet need to space future births compared to 10.6% for limiting (ZDHS, 2001/2). Although the country has made significant progress in expanding access to family planning services over the past 5 years, many women still lack access to these important services.

SFH Oral Contraceptive Program History

In an effort to reduce the unmet need for contraceptives in Zambia, SFH in collaboration with the Ministry of Health (MoH) introduced SafePlan oral contraceptives[2] in November 1996. SFH introduced Safeplan as a safe and effective way to space births and achieve a healthy family. To ensure the product is affordable to low-income women, Safeplan sells for a highly subsidized consumer price of 250 Kwacha/cycle (US$0.06 cents). SFH distributes the product through pharmacies, drugstores, clinics and community-based distributors—making it one of the most widely available contraceptive brands in the country.

[2] The manufacturer Wyeth brands the product as Duofem. SFH over-brands the product as SafePlan.



**2008 show sales through October*

Since its launch in 1996, SafePlan sales have grown steadily. Between 2000 and 2007, annual sales of SafePlan have increased from 433,068 to 1,338,480. For the past several years, consumer demand for Safeplan has exceeded supply due to stock-outs of public sector contraceptives, as well as limited funding for social marketing contraceptive supplies other than condoms.

SFH Advertisement and Promotion

Since the product was introduced, SFH has developed several communication campaigns designed to increase the acceptability and use of oral contraceptives among Zambian women. SFH used a combination of branded and unbranded family planning messages and materials disseminated using television, radio, outdoor and print media to promote Safeplan and address related barriers to uptake. SFH communications emphasized the benefits associated with modern methods, encouraged discussion of family planning between spouses, and aimed to build women's confidence in using modern methods. SFH used the following key messages to motivate increased use of oral contraceptives and other modern methods: "You and your partner can decide together on how to plan your family", "I take SafePlan to space my children, you can too", "Spacing 3 to 5 years saves more lives", "Plan your family with modern contraceptives", "Have children when you are ready" and "Ask your family planning provider or local pharmacist about safe modern contraceptives."

Purpose of the TRaC Study

TRaC (Tracking Results Continuously) surveys are PSI's quantitative research, monitoring and evaluation tool for collecting cross sectional behavioural data. TRaC uses a similar approach to traditional KAP surveys, but is unique in two ways: firstly, it is heavily rooted in the behaviour change framework which is the core of PSI's social marketing and health communications programming; and secondly it is designed with the end use of research findings in mind. Towards that end, it builds upon the *'backwards research process'* where decision-makers first identify the potential decisions that will be based on research findings; this produces the list of indicators or areas of enquiry to be included in the survey. TRaC surveys also differ from standard KAP studies in the way they use psychographic scales to capture the multidimensional and complex concepts that form the *determinants* in PSI's behaviour change framework. The PSI behaviour change framework and Performance Framework for Social Marketing is attached as an appendix.

The purpose of this oral contraceptive use study was to generate evidence to inform family planning programming in Zambia. The study focuses on identifying factors that determine or influence oral contraceptive use. The study was designed to provide actionable evidence that agencies undertaking family planning interventions in Zambia will use to improve and develop programs. The study also serves to provide more current information following the oral contraceptive use TRaC study conducted in 2005.

Study results are presented in this report in a set of standardized tables for segmentation, monitoring, and evaluation of populations [Patel & Chapman, 2005]. *Segmentation tables* answer the questions, among women aged 15-49, which opportunity, ability and motivation factors and demographic characteristics are correlated with oral contraceptive use and, what is the profile of target group segments who do not use oral contraceptives? This information is then to be used alongside analysis of societal or infrastructural determinants of and barriers to oral contraceptive use, as well as qualitative studies, to develop communications messages which will target the appropriate drivers of oral contraceptive use or barriers to use. *Monitoring tables* present levels and trends in key oral contraceptive use indicators. This study provides first and second round figures for key oral contraceptive use indicators. The *Evaluation tables* indicate the association between oral contraceptive use and exposure to SFH's program activities. The differences in desired behaviour between first and second round are assessed and differences are correlated with exposure to interventions. A high level of correlation in a positive direction indicates high program effectiveness.

This study answered questions relating to identification of determinants of oral contraceptive use and measurement of key program indicators.

- Which opportunity, ability and motivation constructs and population characteristics are correlated with oral contraceptive use?
- Is exposure to SFH activities leading to changes in opportunity, ability, motivation, risks and behaviour?
- How has the proportion of oral contraceptive users changed among women aged 15-49 since the last PSI TRaC study conducted in 2005?
- How do the 2007 levels in oral contraceptive use behavioural indicators and opportunity, ability and motivation constructs compare to the 2005 levels?

Monitoring Table

Monitoring of populations is the process of assessing levels and trends of behavioural indicators and those relating to opportunity, ability, motivation and exposure to social marketing activities over time in the segmented population. Such monitoring performs several functions. First, it allows program managers, donors and other stakeholders to determine if indicators in the logical framework have changed and whether programmes have achieved their objectives. Second, monitoring trends and rates of change of indicators found to be drivers or inhibiters of behaviour in the segmentation exercise is helpful in determining whether these important intermediate outcome measures that are correlated with behaviour are changing. Third, monitoring of exposure measures is helpful to social marketers to determine whether the marketing mix has sufficient reach, intensity and duration or, if not, whether changing or stopping the activity is needed (Patel & Chapman, 2004). Fourth, monitoring trends and specifically the speed of those trends informs future project plans in terms of objective setting.

The monitoring tables below present first round and second round data for contraceptive use and potential determinants of contraceptive use among a representative sample of women aged 15-49 in Zambia during August/September of 2007.

Table 1. First and second round data on contraceptive use, determinants of contraceptive use and exposure to social marketing interventions among women of reproductive age in Zambia, 2005 & 2007

INDICATORS	2005 N=1725		2007 N=1670		Sig. Level
	% or mean	N if different	% or mean	N if different	
BEHAVIOUR					
Contraceptive use among women aged 15-49 who want another birth (Spacers)	45.0	988	56.0	984	***
Contraceptive use among women aged 15-49 who want no more births (Limiters)	47.3	657	63.5	575	***
% of respondents who report that they are currently using FP	45.1		57.4		**
Mean length (months) contraceptive use among current users	6.44	778	7.1	958	**
Oral contraceptive use among women aged 15-49	19.9		21.3		
Injectables use among women aged 15-49	8.3		13.9		***
% of women aged 15-29 reported that they used condom pregnancy prevention	16.9	1014	22.8	973	***
OPPORTUNITY					
Availability: Mean	3.0		3.0		
% of respondents who reported that they knew where to purchase SafePlan	58.6		69.0		***
Brand Appeal: Mean	2.5		2.7		
Social Norms: Mean	3.1		3.0		
ABILITY					
Knowledge: Mean	10.8		11.1		
% of women aged 15-49 reported that hormonal contraception does not prevent HIV/AIDS/STIs	87.7		93.8		***
% of respondents who reported knowing condom was used for dual protection	83.7		91.6		***
% of respondents who think that injectables are safe to use	52.5		52.7		
% who think that oral contraceptives are safe to use	70.0		77.2		*
Self Efficacy: Mean	3.1		3.4		***
% of married women aged 15-49 reported that they had discussed family planning with their husband	74.4		72.6		
Social Support: Mean	2.7		2.9		
MOTIVATION					
Attitudes: Mean	3.4		3.6		***

% of women aged 15-29 with unmet need who report that fear of side effects as a reason for not using a contraceptive method	9.3		6.3		
Beliefs: Mean	3.4		3.3		
Intentions: Mean	3.2		3.2		
Outcome Expectations: Mean	3.4		3.5		***
Subjective Norms: Mean	2.9		3.0		**
EXPOSURE TO SFH INTERVENTIONS					
Exposure					
Seen or heard information about SafePlan	35.0		28.3		**
Intensity (Number of channels from which SafePlan information has been received)					
Radio	25.0		14.2		
Television	17.9		16.0		
Posters	15.3		17.4		
Drama groups	5.7		3.1		
Mobile Video Unit	1.4		0.6		
SafePlan Messages					
% of respondents who reported that they had listened to the radio advert that talks about family planning saves lives	27.5		17.7		
% of respondents who reported that they had listened to the radio advert that talks about discontinuation of family planning pill	5.6		1.3		

Significance ***P< 0.01; **P< 0.05; *P< 0.10

The opportunity, ability and motivation behavioural determinants presented above are drawn from the PSI behaviour change framework. *Opportunity* refers to institutional or structural factors that influence an individual's chance to perform a promoted behaviour. Opportunity can be changed by the intervention but is outside the control of the individual. *Ability* is an individual's skills or proficiencies needed to perform a promoted behaviour. *Motivation* is a goal-directed desire. Factors that drive motivation are within the individual and cannot be seen. More detailed definitions of behavioural determinants are included in Annex 4.

The TRaC questionnaire groups opportunity, ability and motivation items into the factors presented below. Scaled responses are given whereby 1=strongly disagree, 2=disagree, 3=agree and 4=strongly agree. Where the statement is a negative one in relation to the desired behaviour (eg 'People who use contraceptives end up with health problems') responses are reverse coded so that 4 becomes strongly disagree with the negative statement.

Using a separate index (based on the number of correct items), knowledge was captured separately with a maximum score of 12. Exploratory factor analysis using varimax rotation is used to identify the number of different dimensions or subscales within each group of items. Uni-dimensional scales containing a minimum of 3 items are then created. The Cronbach's alpha test of internal reliability within each uni-dimensional scales is then performed. Scales with an alpha value < 0.65 are not included, alpha >0.65 is considered minimally acceptable, and > 0.70 acceptable. Composite variables are then created for the multi-item scale by computing the mean response across all items and cases. Where multi-item scales could not be created, individual questionnaire items for the behavioural determinant in question are used. Mean scores for both multi-item scales and individual items in the tables below are a score out of 4, where 1 is the least desirable response and 4 the most desirable.

Monitoring Analysis: Behavioural Determinants of Contraceptive Use, Zambia, September/October 2005 & August/September 2007

Type of modern contraceptive methods

The monitoring analysis shows that contraceptive use increased among women wanting to space their next birth (45% to 56%) as well as those wanting to limit future births (47% to 64%). Moreover, women reporting that they are currently using a family planning method increased significantly from 45% in 2005 to 57% in 2007. Duration of contraceptive use also appears to have increased, from a mean of 6.44 months in 2005 to 7.1 in 2007.

The use of oral contraceptives remained stable (21% in 2007 compared to 20% in 2005). However, the use of injectable contraceptives and condoms for family planning purposes rose significantly during the same time period. In 2007, 14% of respondents reported having ever used injectables, as compared with 8% in 2005. About 23% of respondents reported that they used condoms for pregnancy prevention in 2007 compared to 17% in 2005. Knowledge of the dual protection attributes of condoms increased from 84% to 92% during the same time period. The percentage of women who discussed contraception with their husbands did not change significantly between the two surveys.

Opportunity, ability and motivation determinants of contraceptive use

Four scaled responses are given where 1=strongly disagree, 2=disagree, 3=agree and 4=strongly agree. Generally, opportunity, ability and motivation responses are very positive, with mean scores between 3 and 4 on: availability of contraception, social norms regarding contraception use, women's self-efficacy in using contraception, attitudes, beliefs, intentions, outcome expectations, and subjective norms regarding contraception use.

Exposure to SFH activities

The percentage of women who reported that they knew where to purchase SafePlan increased from 58.6% in 2005 to 69% in 2007, suggesting improved availability and accessibility of the product. Exposure to Safeplan promotional messages, however, decreased from 35% in 2005 to 28% in 2007. The survey further found that about 18% of respondents in 2007 reported having listened to the radio message that family planning saves lives as compared with 28% in 2005. This is likely due to the fact that 2006 and 2007 communications campaigns did not run with similar intensity as compared with 2005.

Segmentation Table

The segmentation analysis presented below uses logistic regression to identify determinants of the desired behaviour. The dependent variable is the behavioural indicator used in program monitoring and evaluation. A person who displays the desired behaviour is referred to as a 'behaver' and those who do not are referred to as 'non-behavers'. Thus, the purpose of the logistic regression analysis is to identify the determinants that are significantly different across the behaver and non-behaver segments, in order to prioritize the behavioural determinants that should be addressed by family planning interventions. The approach is based on the premise that if, for example, women who are confident in their ability to correctly use contraceptives are significantly more likely to use them, then increasing contraceptive use self-efficacy among those not using contraception will have the effect of turning non-behavers into behavers.

Opportunity, ability and motivation, multi-item scales, mean scores and significance are explained in the Monitoring section above. The odds ratio (OR) is the probability of an event happening divided by probability of the event not happening and is a presented in the segmentation analysis as a predictor of behaviour change resulting from a positive change in the independent variable. Alternatively put, the odds ratio tells us the change in odds of the uptake of promoted behaviour when one of the behavioural determinants is changed.

Table 2. Second Round Data on Opportunity, Ability, and Motivation Factors and Population Characteristics of Oral Contraceptive Use among Women of Reproductive Age, Zambia 2007
Risk Definition: Women of Reproductive Age, 15 - 49.
Target Behaviour: Oral Contraceptive Use

	Users of Oral Contraceptives (N=350)	Non-Users of Oral Contraceptives (N=1320)	Sig. level	Odds Ratio
Opportunity				
Availability	3.1	3.0		
Brand Appeal	2.7	2.6	**	**1.3**
Quality of care	3.1	3.2		
Social Norms	3.1	3.0		
Ability				
Knowledge	11.2	11.0	**	**1.2**
Self Efficacy	3.4	3.2	***	**2.3**
Social Support	3.2	2.9		
Motivation				
Attitudes	3.6	3.5		
Beliefs	3.3	3.2		
Intentions	3.5	3.2	***	**2.0**
Locus of Control	1.8	1.8		
Outcome Expectations	3.5	3.4		
Subjective Norms	3.1	3.0		
Perceived Susceptibility	2.9	2.8		
Population Characteristics				
Age				
15 - 24	27.3	32.1		
25 - 29	28.0	23.3		
30 - 34	24.0	20.1		
35 - 49	21.3	24.5		
Educational level				
Junior Primary or less	17.5	25.0		
Senior Primary	21.6	32.7		
Junior Secondary	25.4	21.6		
Secondary +	35.5	21.4	**	**1.2**
SES				
Low	28.9	31.8		
Medium	33.5	36.0		
High	39.7	32.2		

Significance ***P< 0.01; **P< 0.05

Table 3. Second Round Data on Opportunity, Ability, and Motivation Factors and Population Characteristics of Oral Contraceptive Use vs. Use of Other Modern Contraceptive Methods among Women of Reproductive Age, Zambia 2007

Risk Definition: Women of Reproductive Age, 15 - 49.

Target Behaviour: Oral Contraceptive Use vs. Other Modern Contraceptive Method Use

	Users of oral contraceptives (N=350)	Users of other modern contraceptive methods (N=608)	Sig. level	Odds Ratio
Opportunity				
Availability	3.2	3.0		
Brand Appeal	3.0	2.7	***	**1.5**
Quality of care	3.0	3.1		
Social Norms	3.3	3.2		
Ability				
Knowledge	11.4	11.1	**	**1.2**
Self Efficacy	3.7	3.2	***	**2.1**
Social Support	3.2	3.0		
Motivation				
Attitudes	3.7	3.5		
Beliefs	3.3	3.2		
Intentions	3.6	3.2	***	**1.9**
Locus of Control	1.8	1.7		
Outcome Expectations	3.5	3.3		
Subjective Norms	3.3	3.2		
Perceived Susceptibility	3.0	2.9		
Population Characteristics				
Age				
15 - 24	28.3	30.9		
25 - 29	29.4	25.5		
30 - 34	22.0	21.2		
35 - 49	20.3	22.4		
Educational level				
Junior Primary or less	18.0	20.6		
Senior Primary	20.6	22.7		
Junior Secondary	36.0	21.4	**	**1.6**
Secondary +	25.4	25.3		
SES				
Low	27.7	29.1		
Medium	32.6	34.9		
High	39.6	36.0		
N	**350**	**608**		

***P< 0.01; **P< 0.05; *P< 0.10

Table 4 Second Round Data on Opportunity, Ability, and Motivation Factors and Population Characteristics of Oral Contraceptive Use vs. Non Use of any Modern Contraceptive Methods among Women of Reproductive Age, Zambia 2007

Risk Definition: Women of Reproductive Age, 15 - 49.

Target Behaviour: Oral Contraceptive Use vs. Non use of any Contraceptive Method

	Users of Oral Contraceptives (N=350)	Non-users of any contraceptives (N=712)	Sig. level	Odds Ratio
Opportunity				
Availability	3.2	2.9		
Brand Appeal	2.9	2.5		
Quality of care	3.4	3.1		
Social Norms	3.1	2.9	**	**1.4**
Ability				
Knowledge	11.4	11.9	**	**1.2**
Self Efficacy	3.6	3.1	***	**2.9**
Social Support	3.2	2.7		
Motivation				
Attitudes	3.8	3.5		
Beliefs	3.4	3.2		
Intentions	3.4	3.1	***	**2.1**
Locus of Control	1.9	1.7		
Outcome Expectations	3.7	3.5		
Subjective Norms	3.3	2.8		
Perceived Susceptibility	2.9	2.8		
Population Characteristics				
Age				
15 - 24	36.8	28.3		
25 - 29	23.3	29.4		
30 - 34	17.3	22.0		
35 - 49	22.6	20.3		
Educational level				
Junior Primary or less	28.9	18.0		
Senior Primary	35.5	36.0		
Junior Secondary	17.6	20.6		
Secondary +	18.0	25.4		
SES				
Low	40.0	26.3		
Medium	32.4	33.1		
High	27.5	40.6		

***P< 0.01; **P< 0.05;

Segmentation Analysis: Opportunity, Ability, and Motivation Factors and Population Characteristics of Oral Contraception Use, Zambia 2008

In the segmentation table, the group at risk is defined as women of reproductive age, 15-49 years old. In table 2 comparing users of oral contraceptives with non-users of oral contraceptives, four indicators were found to be significant determinants of oral contraceptive use: self-efficacy, knowledge, intentions and brand appeal.

Those currently using oral contraceptives scored 3.7 (on a scale of 0 to 4) on average on the self-efficacy scale, compared with 3.0 among women not using oral contraceptives. This means that self efficacy among the respondents was positively related to oral contraceptive use. The users were more likely to agree with statements such as "I am able to correctly use contraceptives" and "I am able to use contraceptives to limit the number of children I have". If the average self efficacy among the target group were to increase by one unit, the odds of oral contraceptive use will go up 2.3 times.

Knowledge was also a significant determinant; oral contraceptive users scored 11.4 on the knowledge scale (on a scale of 0 to 12), while non-users scored 11.0. This finding suggests that providing women with accurate information on oral contraceptives while dispelling myths and misconceptions could lead to a significant increase in oral contraceptive uptake. If the average knowledge among the target group were to increase by one unit, the odds of oral contraceptive use will go up 1.2 times.

And women who expressed future intentions of using contraceptives were 2.0 time more likely to be using oral contraceptives. By educational background, women with secondary or higher education were more likely to use oral contraceptives.

Segmentation Table 3 shows determinants of use of oral contraceptives against other modern methods. Five factors were identified as drivers of use of oral contraceptives. These were brand appeal, knowledge, self-efficacy and intention. Women who had positive perceptions about contraceptive brands were 1.5 times more likely to oral contraceptives. This was also the case with those with more knowledge (1.2 times), high self efficacy (2.1 times) and positive intentions (1.9 times).

Segmentation Table 4 shows determinants of use of oral contraceptives against non use of any modern method. This segmentation table describes what determinants could be important in converting non users of any modern method to oral contraceptives. Four such determinants were identified. These were knowledge, self-efficacy, social norms and intention. Women who believed it was normal in their community to use oral contraceptives were 1.4 times more likely to oral contraceptives. This was

also the case with those with more knowledge (1.2 times), high self efficacy (2.9 times) and positive intentions (2.1 times).

Across the various segmentation tables, the determinants of knowledge and self efficacy were most commonly indicated. They also had large odd ratios. This means that the program interventions should prioritize communications structured around increasing target group's knowledge and self efficacy to increase the use of oral contraceptives.

Evaluation Tables and Analysis: Effect of SFH Health Communications on Contraceptive Use among Women Ages 15-49 in Zambia, 2007

The evaluation tables illustrate the correlation between the desired behaviour and exposure to SFH program activities. It uses data from surveys conducted in 2005 and 2007. Under the column entitled "Ref", indicator levels are taken from the September 2005 survey round and are equivalent to the levels in the monitoring table. The results of this table inform programme managers as to whether there has been any positive behaviour change as a result of exposure to SFH's health communication efforts. The questionnaire assessed the intensity of respondent's exposure to SFH health communication messages through multiple channels including television, radio, billboards and brochures. To calculate the index, each channel was counted as one form of exposure. If a person was exposed to none of the channels, he/she was categorized as "not exposed". One channel of exposure was categorized as "low exposure", 2 channels of exposure were classified as "medium exposure", and 3 or more were considered as "high exposure".

Table 5: Correlation between oral contraceptive use and exposure to SFH's health communications among women aged 15-49, Zambia, 2007.

Behaviour/Use	Reference[3] (2005) N=1725	Exposure to Contraceptive message[4]				Sig. Level
		None N=1152	Low N=173	Medium N=156	High N=189	
Contraceptive use among women aged 15-49 who want another birth (Spacers)	44.4[a]	57.3[b]	52.2[b]	52.7[b]	59.9[c]	***
Contraceptive use among women aged 15-49 who want no more births (Limiters)	45.1[a]	62.7[b]	65.6[c]	83.9[d]	52.5[c]	**
% of respondents who report that they are currently using FP	44.7[a]	58.5[b]	55.0[b]	56.4[b]	57.1[c]	***
Oral contraceptive use among women aged 15-49	20.1[a]	35.0[b]	47.2[c]	30.2[b]	37.1[b]	**
Percentage who think that oral contraceptives are safe to use	70.2[a]	76.5[b]	76.1[b]	77.8[b]	80.7[b]	
Percentage of married women aged 15-49 reported that they had discussed family planning with their husband	68.4[a]	74.4[a]	71.4[a]	75.6[b]	75.8[b]	**

[3] A note on reading superscripts in the exposure table: When two columns share the same superscript then it means that the difference between those two figures was not found to be significant at 95% confidence interval.
[4] Exposure to family planning advertisement was defined as hearing or seeing messages related to family planning. Intensity of exposure (None, Low and High) was graded based on the number of different channels through which a respondent was exposed.

SFH's Attribution of impact on Preventive Behaviours

Behaviour/Use	Monitoring Table	Evaluation Table	Conclusion about SFH's impact
Contraceptive use among women aged 15-49 who want another birth	Positive	Positive	+ impact
Contraceptive use among women aged 15-49 who want no more births	Positive	Positive	+ impact
% of respondents who report that they are currently using FP	Positive	Positive	+ impact
Oral contraceptive use among women aged 15-49	Non-significant	Positive	no impact
Percentage who think that oral contraceptives are safe to use	Positive	Non-significant	no impact
Percentage of married women aged 15-49 reported that they had discussed family planning with their husband	Non-significant	Positive	no impact

The results indicate that exposure to SFH communications is significantly correlated with use of family planning in general and oral contraceptives in particular. About 84% of those with medium exposure reported having used modern contraceptive methods as compared to 55% of those with low exposure and 59% of those with no exposure. Approximately, 37% of respondents with high exposure reported having used oral contraceptives compared to 47% of those with low exposure and 20% of those with no exposure. Exposure to SFH communications was not significantly correlated with the belief that oral contraceptives are safe, though the view was shared by more than 70% of respondents across the different exposure categories. Among those with high exposure to the SFH program, 76% reported having discussed family planning with their husbands (compared to only 74% of those with no exposure).

Program Recommendations

The results from SFH's 2007 Family Planning TRaC Survey focusing on oral contraceptive use indicate positive trends in health behaviour, knowledge, and awareness since the 2005 survey. They also provide indications of the effectiveness of certain health interventions and campaigns, offering direction for those seeking to improve current programs and design follow-on activities.

The behavioural determinants of self-efficacy and knowledge were highly correlated with oral contraceptive use. As such, family planning programmes should focus on building women's confidence to correctly use oral contraceptives, work to disseminate accurate family planning information, and eliminate myths and misconceptions surrounding this important contraceptive method. This approach will empower women to make informed reproductive health choices, space or limit births effectively, and achieve a healthy family.

These recommendations can also be applied to programmes seeking to increase the prevalence of modern contraception in general. Such interventions should increase women's understanding of how to use family planning methods effectively and communicate the benefits of doing so. Behaviour change communication efforts should educate women on modern contraceptives, emphasize personal risk perception, and eliminate false beliefs about various contraceptive methods.

Levels of education are also positively correlated with contraceptive use. To achieve further gains in CPR and to ensure that no women are deprived family planning services, programmes should consider specifically targeting less educated women.

The evaluation analysis indicates that increased exposure to intervention messages through different media channels yielded significant increase in the desired behaviour. Analysis of the behavioural data showed that exposure to SFH messages through multiple communication channels had a significant positive impact on the knowledge and use of oral contraceptives. Integrated, multi-channel communications campaigns are likely to increase individual motivation to use oral contraceptives.

Appendix 1: Population Characteristics

POPULATION CHARACTERISTICS	% or mean
Currently married	77.8
Less than secondary school education	58.0
Average age of respondents(in yrs)	28.9
Percent residing in rural areas	52.7
Ever had a child	93.4
Mean number of children (mean)	3.4
Among women with children, % of women intending to have more children	63.1
MEDIA ACCESS	
Ever listen to the radio	63.2
Ever watch television	30.1
Ever read newspapers	14.3

Annex 2: Methodology

Sample Characteristics The study was based on reports from randomly selected women (15-49 age groups) from urban and rural areas in all nine provinces of Zambia. This first round of this TRaC study was conducted in Zambia during September of 2005. The study is based on a representative sample of 1725 women aged 15-49 living in Zambia. The second round TRaC study was conducted in Zambia during August 2007 and is based on a representative sample of 1670 women aged 15-49. Both rounds followed the same sampling procedure.

The sample was drawn by the Central Statistical Office (Batista, 2007). A three stage stratified cluster sampling procedure was used to select the required households from which one woman aged 15-49 was interviewed. In the first stage, 66 Standard Enumeration Areas (SEAs) were randomly selected for the study across the country. A sampling interval of the SEAs was calculated by dividing the total number of households in each strata by the number of SEAs to be selected in each cluster. The selection of the sample in each cluster employed Probability Proportional to Size (PPS) sampling scheme, where the measure of size was taken to be the household count in each SEA. A random number was generated to select the first SEA in each cluster. To select the next SEA in a cluster, the random number generated was added to the sampling interval and this process was repeated until all the required number of SEAs in each cluster was selected.

In the final stage of sampling, households were selected using systematic selection method by applying a fixed interval. In an event where there were more than one eligible respondent at household, the woman who was most responsible for daily chores and care of children was interviewed

The fieldworkers were provided with maps to conduct the selection of households to be visited within each SEA. The maps were used to establish the boundaries of the selected SEA. Apart from the maps, fieldworkers had household count forms for each SEA. These were used to establish the sampling interval in each SEA. Thus the number of households in the SEA was divided by the number of households required in order to get the sampling interval.

Data Collection Procedure The first round of data collection was carried out between August and September 2005 and the second round was conducted between august and October in 2007 by a team of 16 interviewers and 4 supervisors. All supervisors and the interviewers attended a three-day intensive training programme. The course covered the

theory and practice of questionnaire design, sources of bias, interviewing techniques, general information about family planning and a lot of mock interviews with the survey questionnaire. The enumerators were divided into 4 teams, and each team was supervised by one supervisor. Questionnaires were manually checked while fieldwork was being conducted. A maximum of three visits (an initial visit plus two call-backs for households that were closed at the first or second visit) were made to each selected household. Only after the three attempts were households substituted and the reason for substitution was recorded on the cover page of the questionnaire.

Survey Instrument(s) The questionnaire was administered by trained interviewers in all nine provinces and took approximately 45 minutes to complete. The questionnaire included population characteristic, behaviour, opportunity, ability, motivation and media consumption items and exposure to social marketing interventions.

The questionnaire used for this survey was designed after a review of the literature and other PSI survey questionnaires used to study attitudes and behaviours related to contraceptive use. Behaviour indicators included log frame indicators and other stakeholder and donor indicators which are important in family planning programming. Questions measuring opinions were presented on a four-point scale: 1) strongly disagree, 2) disagree, 3) agree and 4) strongly agree. Population characteristics, media habits, exposure to other family planning campaigns were included in the adopted questionnaire.

The questionnaire was piloted with 120 women in order to validate the scales used to measure the determinants of behaviour. After completing the reliability and validation check, some of the scale items questions which were not reliable were dropped. . The pilot also served as a measure of how the inbuilt consistent checks were working. Fieldworkers competency to handle the question was again assessed during the pilot survey.

The questionnaire was developed in English and translated first into two most widely spoken languages (Bemba and Nyanja). Thereafter, the questionnares were translated into other languages. Comments and suggestions from experienced supervisors and fieldworkers were integrated into the final version of the questionnaire for greater clarity of questions.

Analytic Technique Data were entered using EPINFO software. Statistical analysis was performed with SPSS. Data were analyzed using PSI's Dashboard Analysis Techniques. The following analyses were conducted:

- Simple frequencies and means were run on descriptive data for monitoring purposes

- Reliability testing was conducted for scale items. Scales were considered reliable if they achieved a Chronbach's alpha of .70 or higher. Individual items from unreliable scales were tested independently in subsequent analysis as possible predictors of oral contraceptive use.
- Scaled constructs, individual OAM variables, population characteristics, and exposure indicators were tested for bivariate correlations with the outcome variable oral contraceptive use. Predictors from each bubble category (opportunity, ability, and motivation) that were significantly correlated with the outcome were selected for inclusion in the logistic regression model. All population characteristics and exposure indicators that were significantly correlated with the outcome variable were also included in the logistic regression model.
- The monitoring table was produced based on amerged data set form the baseline survey of 2005 and the follow-up survey of 2007.
- At the multivariate level, logistic regression analysis was used to measure the net effect of independent variables on the likelihood of oral contraceptive use. To simplify interpretation, the results of the logistic regression analyses were presented as odds ratios. For example, odds ratios greater than one imply a higher likelihood of behavers than the reference category. Odds ratios smaller than one imply a lower likelihood of behavers than the reference category. The evaluation table categorizes exposure in terms of low, medium and high exposure based on exposed to number of channels.

Annex 3: Reliability Analysis

Behaviour Change Determinants: Scale Items	# of items	Cronbach's Alpha
OPPORTUNITY: AVAILABILITY	**5**	**0.7987**
Contraceptives are always available here when needed.		
There are a lot of different contraceptive methods available here that women like me can get nowadays.		
Contraceptives are available within 15 minutes walking distance from my house.		
It is easy to get family planning products in the shops around here.		
The methods I am interested in are available in clinics around here.		
OPPORTUNITY: Brand Appeal	**3**	**0.7583**
I know of a brand of contraceptive that is just for women like me.		
I have a favourite brand of family planning products.		
I remember the slogan for at least one contraceptive method		
OPPORTUNITY: Quality of Care	**5**	**0.8005**
Family planning services around here are of very good quality.		
FP clinics around here give you all information you need to choose the type of contraceptives you want.		
In family planning clinics here, you can get any contraceptive method you choose.		
When you go to FP clinics here, you can talk to providers freely without fearing that someone else would be told whatever you said		
FP services around here are as good as those obtained from other places.		
OPPORTUNITY: Social Norms	**4**	**0.8431**
In this community, family planning is supposed to be used only by older women who want no more children.		
Most of my friends use contraceptives to space births.		
My friends typically use contraceptives to prevent pregnancy.		
In my community many people use contraceptives to limit the number of births.		
ABILITY: Self-Efficacy	**6**	**0.9391**
I am able to correctly use contraceptives.		
I am capable of using contraceptives to prevent births.		
I am capable of using modern contraceptives to space my births.		
I am capable of using contraceptives consistently.		

Behaviour Change Determinants: Scale Items	# of items	Cronbach's Alpha
I can talk to my partner about using contraceptives to prevent unwanted pregnancy		
I am able to use contraceptives to limit the number of children I have.		
ABILITY: Knowledge[5]		
Some contraceptives are to be taken by mouth every day.		
If you stop using a contraceptive method, you can get pregnant again.		
Women can have an injection by a doctor or nurse which stops them from becoming pregnant for several months.		
Women can take a pill which stops them from becoming pregnant for several months.		
A man or a woman can put a rubber sheath on their penis or vagina during sexual intercourse to prevent pregnancy.		
A woman or a man can have an operation to avoid having any more children.		
Couples can avoid pregnancy by not having sexual intercourse on the days of the month when the woman is more likely to become pregnant.		
There is a need to consult a health worker before taking a pill.		
Prolonged breastfeeding can delay the chances of a woman becoming pregnant.		
There are different methods of contraceptives which couples can use to space the birth of their children.		
SafePlan is a family planning pill.		
3 to 5 years between births reduces the risk of death to a mother and child.		
ABILITY: Social Support	**6**	**0.8105**
My friends encourage me to use contraceptives.		
My partner or family members encourage me to use contraceptives.		
My parents would support any decision I make regarding childbearing.		
My parents discuss contraceptive use with me		
Health workers encourage me to use contraceptives.		
My friends discuss contraceptive use with me.		
MOTIVATION: Attitudes	**4**	**0.8606**
Using contraceptive methods is good.		
Using modern contraceptive methods is beneficial.		

[5] Knowledge items were not subjected to reliability analysis, hence there is no Cronbach's Alpha.

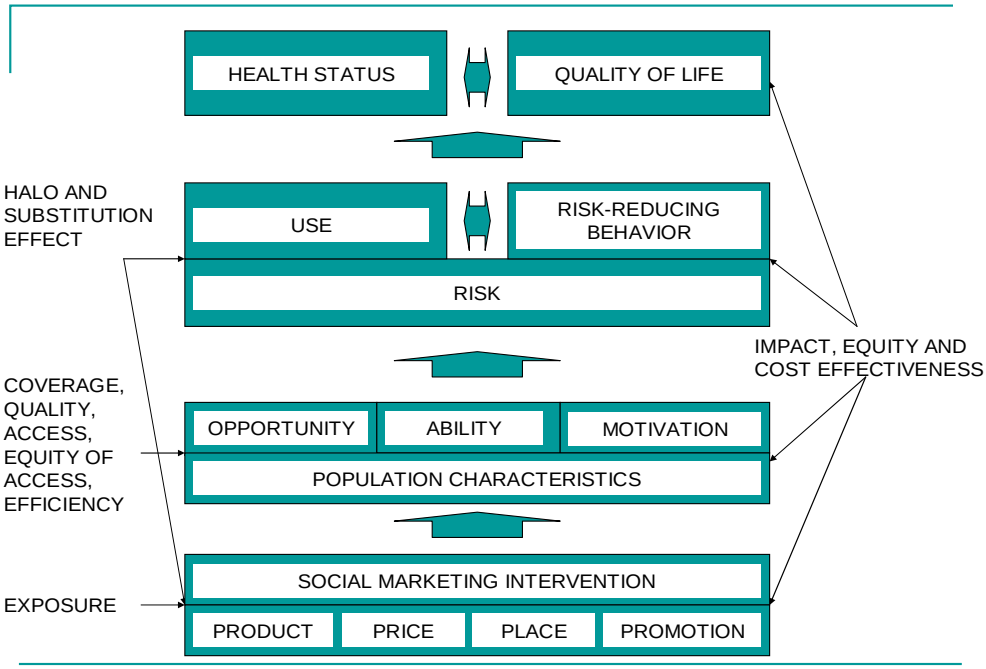
Behaviour Change Determinants: Scale Items	# of items	Cronbach's Alpha
Using modern contraceptive methods is effective.		
Using modern contraceptive methods is safe.		
MOTIVATION: Beliefs	**6**	**0.8162**
Children born to a woman who used contraceptives can have many things wrong with them.		
Using contraceptives reduces the sex drive.		
Contraceptives can affect the quality of sexual relations with partner.		
People who use contraceptives end-up with health problems.		
Contraceptives can cause cancer.		
Contraceptives are dangerous.		
MOTIVATION: Intentions	**3**	**0.8912**
I intend to use a modern contraceptive method to prevent pregnancy.		
I intend to use a modern contraceptive method to limit the number of children I have.		
I intend to use modern contraceptive methods after I get advice from a health worker.		
MOTIVATION: Locus of Control	**3**	**0.6932**
It is up to my husband to make sure that we use contraceptives.		
Whether or not I get pregnant is a matter of fate. Only God decides.		
I could get pregnant even if I do my best to prevent it.		
MOTIVATION: Outcome Expectations	**4**	**0.7972**
Using modern contraceptives is the best way for me to avoid unwanted pregnancies.		
I am more likely to get pregnant if I don't use contraceptives.		
Contraceptives are effective in spacing births.		
In my opinion, using contraceptives is effective in planning our family.		
MOTIVATION: Subjective Norms	**6**	**0.8665**
My best friend believes that I should use contraceptives to prevent pregnancy.		
My best friend would approve of me using contraceptives to space births.		
My parents would approve of me using contraceptives.		
My partner believes that I should use contraceptives to prevent pregnancy.		
My partner believes that I should use contraceptives to space births.		

Behaviour Change Determinants: Scale Items	# of items	Cronbach's Alpha
My best friend believes that I should use contraceptives to limit births.		
MOTIVATION: Perceived Severity	**3**	**0.8750**
Unwanted pregnancy is a major problem in my community.		
Parents who are not being able to limit the number of children they have is a serious problem in this community.		
Families with children who are too close in age is a problem in this community.		
MOTIVATION: Perceived Susceptibility	**3**	**0.9000**
I sometimes worry about unwanted pregnancy		
I sometimes worry that I might become pregnant.		
I sometimes worry about having too closely spaced births.		

All are based on a 4-point scale, where

4 = Strongly Agree, 3 = Agree Somewhat, 2 = Disagree Somewhat, 1 = Strongly Disagree

Annex 4: Performance Framework for Social Marketing



This study design is guided by PSI's PERForM framework. PERForM describes the social marketing research process, identifies key concepts important for designing and evaluating social marketing interventions and mirrors the four levels and concepts in the logical framework.

The top level consists of the goal of social marketing for any health promotion intervention, namely improved health status and/or for interventions relating to coping with sickness or disability, quality of life.

The second level consists of the objectives of social marketing stated as product or service use on the left side and/or other risk-reducing behaviours that do not involve the use of a product or service on the right side. The adoption or maintenance of these behaviours in the presence of a given risk or need for health services is causally antecedent to improving or maintaining health and or quality of life.

The third level consists of the determinants of PSI Behaviour Change framework summarised in terms of opportunity, ability and motivation that may differ by population characteristics such as age and sex. The fourth level consists of the characteristics of the social marketing intervention.

PSI Behaviour Change Framework: Definitions of Behavioural Determinants

OPPORTUNITY	Institutional or structural factors that affect the chance the individual has to perform the promoted behaviour. Factors that can be changed by PSI but outside the control of the individual.
Availability	The extent to which a promoted product or service is found with a pre-defined area.
Brand Appeal	The importance of brand (name, symbol, design, slogan, etc)
Brand Attraction	The extent to which a certain brand (name, symbol, slogan, etc) stands out from its competitors.
Brand Attributes	The extent to which the physical components of a certain brand are practical to use.
Social Norms	The extent to which a promoted behaviour is typically practised in the community.
ABILITY	The skills of the individual or the proficiency needed to perform a promoted behaviour. Factors that can be changed by PSI, that are within the control of the individual and that can be demonstrated by an action.
Knowledge	The level of factual information that an individual has about the subject.
Self Efficacy	The conviction an individual has about his ability to perform a promoted behaviour effectively or successfully.
Social Support	The level of emotional, practical or informational support that the individual receives.
MOTIVATION	The desire or wish of an individual to perform a promoted behaviour. Factors that can be changed by PSI and that are within the control of the individual but that cannot be demonstrated.
Attitudes	The individual's evaluation of a promoted behaviour or product.
Beliefs	The perceptions of a promoted behaviour, that may or may not be true, but specifically false perceptions if they exist.
Intention	The extent to which the individual is ready or willing to perform the promoted behaviour.
Subjective Norms	The pressures that the individual perceives to conform to what he believes other in the social group believe about a promoted behaviour.
Locus of Control	Whether control in the individual's life is situated within him or externally.
Threat	The perceived severity of the problem (including physical, psychological or economic harm).
Outcome Expectation	The extent to which the individual believes that a promoted behaviour, product or brand will deliver its promise.
Willingness to Pay	How much the individual is prepared to pay for different promoted products or services.

Annex 5: References

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