International Development

ISSN 1470-2320

Working paper Series 2013

No.13-136

Women and the Soft Sell:
The importance of gender in health product purchasing decisions

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Published: January 2013

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Women and the Soft Sell:

The Importance of Gender in Health Product Purchasing Decisions

There has been considerable scholarly attention given to the importance of pricing in determining outcomes in social marketing schemes; whether charging a positive price or free distribution is preferable for increased uptake and usage of important health products. Though grounded in the desire to improve the cost-effectiveness of distribution methods, these debates overlook the possibility that factors other than price can also impact uptake and usage. Using marketing data collected in northern Uganda, this paper presents evidence suggesting that the gender of the salesperson and the customer can also have a significant impact on uptake and usage.

The data on which this paper is based was collected by Innovations for Poverty Action (IPA) during 2011. I was employed by IPA as a Project Associate to manage the fieldwork. The primary focus of the fieldwork was for a separate research project, on which the Principle Investigators were Dean Karlan (Yale), Greg Fischer (LSE), Margaret McConnell (Harvard) and Pia Raffler (Yale). My thanks go to them for making this data available to me.

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1. Introduction

Social marketing is an innovative approach to encouraging healthy behavior in low-income, high-risk sections of society. It is increasingly used by public health officials in both the developed and developing world, apparently with some success (Grier & Bryant 2005). While commercial outfits sell health products too expensive for the poorest, free public health services are often over-burdened and inefficient. Proponents of social marketing claim they can provide affordable goods with private sector efficiency. By charging a positive price, social marketers are able to utilize local commercial infrastructure, thereby increasing the availability of important health products (PSI 2003). While NGOs such as *Population Services International* (PSI) lead the charge to "make markets work for the poor", researchers have become increasingly interested in evaluating this approach.

There is a growing literature on the effect of pricing on uptake and usage of health products. Fascinating debates rage over whether higher prices induce a sunk-cost effect or a screening effect, or whether cost-sharing is always prohibitive for the very poorest (Ashraf *et al* 2010, Cohen & Dupas 2010, Dupas 2010). Yet there has been less attention given to other factors which could influence uptake and usage. Marketing literature on exchange relationships indicates that characteristics of the salesperson and customer are relevant (Wren & Simpson 1996), and while many 'characteristics' would be time-consuming and costly to alter, one that could more easily be controlled is the gender of those involved in the transaction. At present, however, there is little evidence to support hiring or targeting one gender over the other when conducting social marketing. As cost-effectiveness is increasingly becoming a pre-requisite for funding in this field, it seems strange that factors other than pricing have not been given more attention.

In Uganda, the social enterprise *Living Goods* is a perfect example of social marketing in action. Adopting the Avon direct-selling model of marketing (Avon 2012), *Living Goods* provides a sustainable distribution platform for thousands of micro-entrepreneurs who make a living from going door-to-door selling affordable and effective products designed to improve the health, wealth and productivity of the poor (Living Goods 2012). Crucially, these micro-entrepreneurs are all women. In the 19th century, when Avon started selling cosmetics door-to-door, the logic behind preferring women as salespeople was straightforward; women use make-up, they can better persuade other women to buy it. Yet when selling medicines, household items and basic foods, the rationale for a women-only sales force is less clear. Certainly empowering women and generating livelihoods for them is laudable. Yet if the central argument behind social marketing programs is that they are more *effective* than either purely commercial or purely public sector efforts, can *Living Goods'* women-only policy be defended on these grounds?

This paper aims to answer that question. By looking closely at door-to-door marketing interactions, it will be argued that the genders of the salesperson and customer do indeed affect sales outcomes. Using data collected from a randomized controlled trial in Uganda, it is found that female salespeople are associated with a greater propensity of the customer to decide to buy health products, and male customers are associated with purchasing greater quantities. These findings suggest that the *Living Goods* female marketers-only approach may indeed be effective. Furthermore, the findings prompt a rigorous examination of what we consider 'effective' social marketing to be; should the focus be on uptake or usage? Most importantly, this paper indicates that price is not the only determinant of uptake and usage. Further research into other determinants could help to improve the cost-effectiveness of social marketing schemes.

Section 2 considers existing knowledge on the topic from the literature. Section 3 outlines the relevant contextual factors and fieldwork methodology, and in Section 4 the main hypotheses are posited. Section 5 presents the results, and then in Section 6 these are analyzed and discussed. Section 7 concludes.

2. Social marketing effectiveness

Given the current appetite of the donor community for 'measurable outcomes', monitoring and evaluation studies have unsurprisingly become *de rigueur* for most large development organizations. There are a variety of studies that have evaluated the impact of social marketing efforts, with equally varied levels of rigor and reliability (Knerr 2011). Indeed, PSI proudly proclaims that it evaluates the impact of its interventions "using a variety of metrics and research tools" (PSI 2012), while *Living Goods* is currently implementing a large-scale RCT to evaluate the impact of their work[1]. While such efforts are commendable, there have been few attempts to measure the effectiveness of different social marketing practices.

Pricing

Studies on the effect of pricing have been most prevalent, with good reason. Intuitively we can see that price is likely to have a significant impact on uptake. Recent studies have delved deeper into the effect of price, using innovative methodologies to separate the effect on uptake from the effect on usage. Ashraf *et al* (2010) investigate the impact of varying the price paid for a water purifier, and find strong evidence for screening effects (those with a higher *a priori* propensity to use the product are more

[1] In collaboration with J-PAL, results are expected in late 2012.

prepared to pay a higher price for it), but no evidence of a sunk-cost effect (those who actually paid more for the product were not more likely to use it). The implication is that the conditions of the purchase (the price) do not affect the level of usage. These findings are corroborated to some extent by Cohen and Dupas (2010), who find that increasing the cost of bednets does not affect usage, aside from impacts on uptake; even slight increases in price *significantly* reduce uptake. This in turn is in keeping with findings by Shampanier *et al* (2007) that free products are treated by purchasers as being more than simply at a lower cost; they are treated as if their benefits were greater too.

The debate over the impact of pricing is far from settled, but it is certainly an issue under intense scholarly scrutiny. However, if we are concerned about devising social marketing strategies which are cost-effective, price is only one factor. Indeed, price is also an expensive factor to vary. If we follow Cohen and Dupas, for example, free distribution of bednets is far preferable in terms of lives saved. Yet at a large scale the extra cost of distributing bednets at full subsidization compared to even minimal cost-sharing is likely to be substantial. If alternative means of affecting uptake and usage exist, and they are cheaper to implement than offering full subsidies, this would represent a startling improvement in cost-effectiveness. The argument of this paper is that such 'low hanging fruit' are not so rare.

Customer gender

The first variable that will be considered is the gender of the customer. There is strong evidence to expect male and female customers to respond differently to salespeople – and thus affect sales outcomes - and there is more of a consensus over the behavioral tendencies exhibited *by* different genders than over the behavior *towards* different genders. This is reflected in a number of schemes that target women only. The PROGRESA conditional cash transfer program in Mexico, for example, sends cash to mothers under the assumption that this will better "target the funds within the household" towards the children's well-being (Gertler & Boyce 2001).

Numerous high-quality papers provide compelling evidence firstly that within the household there are often separate and non-fungible male and female income streams, and secondly that men and women have different expenditure preferences (Duflo & Udry 2004, Duflo 2003, Hoddinott & Haddad 1995, Phipps & Burton 1998). Yet it is possible to go further on the latter point, which for our purposes is instructive. Many of these studies find that women's expenditure preferences tend to stick to gendered stereotypes; food, health and nutrition, while men's expenditures tend to stick to prestige and adult goods (Hoffman 2008). It seems uncontroversial, then, to assert that men and women appear to demonstrate heterogeneous expenditure preferences. Surely this should be taken into consideration by social marketers? If women are more likely to buy health products, they could be targeted when selling door-to-door to avoid wasting time on male customers who are less likely to make a purchase.

A caveat is required however. While women may indeed express a preference for certain products, this does not equate to them having the liberty to spend household money on those products. Indeed, where there are separate income streams within a household, the woman may be free to spend her money as she pleases. Yet this is not always the case. Conducting a survey in Malaysia, Kusago and Bahram (2001) asked respondents about men's and women's purchasing and decision-making powers within the household. In line with the above discussion, they find heterogeneity of preferences between mothers and fathers. However, they also find that both mothers and fathers agree that *fathers* have more financial decision-making power on all expenditure items. This is significant because if mothers do not make household purchasing decisions, and so express their expenditure preferences, it reduces the efficacy of targeting women. Ultimately this is likely to be a cultural factor which varies by location. While in South Africa Duflo (2003) finds evidence that grandmothers do have some decision-making power over expenditures, clearly in Malaysia this may not hold.

Salesperson gender

As far back as 1981, Weitz (1981) wrote that the effectiveness of exchange relationships is "moderated by or dependent upon characteristics of both the salesperson and the customer". There is a large literature analyzing the 'buyer-seller dyad'; certainly relevant for social marketers interested in increasing their effectiveness. Among other factors, it is asserted that the sex of the salesperson is important (Wren & Simpson 1996); indeed Strutton *et al* (1995) find that male salespeople are *more* likely to use *less* effective persuasive strategies than female salespeople. These findings from the marketing literature are corroborated by more recent studies considering gender and behavior.

Bertrand *et al* (2010) investigate how non-informative advertising content can affect consumer choice of loans in South Africa. They find that showing a female photo on the advertising mail-out has a significant positive effect on demand for loan take-up, and that male clients in particular took up significantly more; the female photo seems to have had a more significant effect on male than female clients. This is particularly relevant for the present study as will be shown below. One of Bertrand *et* al's main conclusions is that content which triggers so-called System I (quick, intuitive) decision-making has a significant impact, whereas content triggering System II (conscious, deliberative) decision-making does not[2]. They place the gendered photo in the System I category. This suggests that gender can be an important factor in influencing people's decisions about non-trivial matters (such as whether or not to take up a loan), and that the gender interaction between the solicitor/salesperson and customer can be significant too.

[2] See Kahneman (2011) for a more detailed discussion of System I and II decision-making.

There are a number of channels through which the gender of a person could affect the way others behave towards them. One that has received attention is what is known as the 'beauty premium'; a number of papers suggest that people of above average beauty tend to be treated differently (Hamermesh & Biddle 1994, Mobius & Rosenblat 2006, Landry *et al* 2006). Andreoni and Petrie (2008) go one step further, and present evidence that women tend to benefit more from the 'beauty premium' than men. So attractiveness is one possible channel for gender to exert an influence. Another is trust. Again, there are a number of studies assessing how trust and gender interact. Some find that women are more trusted than men (Feingold 1994, Wright & Sharp 1979), while others find that men are more trusting (Buchan *et al 2008)*. Indeed there is also evidence that women tend to behave in a more trustworthy manner, taking fewer bribes (Treaster 1999) and being associated with lower corruption in government (Dollar *et al* 2001). So there is plenty of evidence to suggest that people could and often do behave differently towards people depending on their gender. Thus our second variable to consider is the gender of the salesperson.

Customer-salesperson interaction

Finally, it is important not to overlook the importance of the interaction between the two variables just discussed. We have seen evidence that men and women can behave differently, and that people can behave *towards* men and women differently. Now we must consider the interaction between the gender of the salesperson and the gender of the customer. The paper cited above by Bertrand *et al* suggests there is reason to expect men and women respectively to behave differently towards men and women. Bertrand *et al* find that the female photo in the advertising mail-out has a greater effect on male customers than on female customers. The preceding discussion on the importance of female attractiveness can perhaps explain part of this finding; men are more likely to find women attractive than women are to find women attractive.

More relevant to the doorstep buyer-seller dyad that concerns us, Landry *et al* (2006) assess factors affecting doorstep charitable giving, in particular solicitor characteristics. In a door-to-door fundraising drive, they find that one standard deviation increase in the physical attractiveness of female solicitors increases the average gift by 35-72%. Importantly, they claim that this increase is largely due to the increased participation by households where males answered the door. In fact they found that attractiveness differences were as important as differences in the methods of fundraising in terms of the amount raised. As with the Bertrand *et al* paper, the effect is largely on the extensive margin (the number of households that decide to participate) rather than the intensive margin (the amount a household pledges). So we can see a pattern developing in which the behavior by males towards females has special characteristics. However, there is also evidence suggesting that this interaction can

work in other ways. Andreoni and Petrie (2008) find that as the number of men in a group playing a public goods game increases, the level of cooperation between men increases. They attribute this outcome to "generosity competition" between men; a further indication that interaction between genders is an important variable to include.

3. Fieldwork and methodology

Context

This paper is based on data collected as part of a randomized controlled trial conducted in Gulu District, northern Uganda[3]. This is a region only recently emerging from a decades-long civil war. Many of the villages visited by salespeople had until recently been abandoned, the residents having been relocated to internally displaced people (IDP) camps. The first implication is that many of the customers have until recently been dependent on free hand-outs of health products from NGOs, and so willingness to pay for health products could be diminished. The second implication is that there were not necessarily well established income streams for customers of either gender, but particularly for men. Since the relocation out of IDP camps, widespread under-employment (including agricultural work) of men has become a growing problem. As such, literature on intra-household accounting is perhaps of less relevance in this context. Anecdotal evidence suggests that income from crops tends to be handled mostly by men, irrespective of who actually farms the crops.

Study design

The primary aim of the data collection was to measure the impact of various factors on willingness to pay for health products. Salespeople went door-to-door in rural areas marketing health products and recording who received which products. There were two waves of marketing. In the first wave there were two treatments; the type of distributing organization (NGO or for-profit firm), and price of the product (free or market price), creating four treatment cells, randomized at the village level. In the second wave, 6-8 weeks later, the salespeople returned to the same customers, and this time there was no variation; the entire sample was marketed to by salespeople presenting themselves as a for-profit firm, and the products were all for sale at market price. Each customer was only offered one product, which was randomized at the individual level for wave one. The products were Panadol (a painkiller), Elyzole (a deworming medication), and Restors and Zinkid in combination (Restors – oral rehydration salts [ORS], Zinkid – zinc supplements). In wave two each customer was offered the same product,

[3] Appendix A contains more information on the original study.

except for 25% of the sample who were assigned to a new product, Aquasafe (a water purifier). The key data is the record of which customers purchased/received which products, and in what quantity. In all, nearly 3,000 customers were located and marketed to during the second wave, spread across 120 villages in all the sub-counties of Gulu District in northern Uganda. 55% of customers were female. There were 40 salespeople, 17 of whom were female. Please see Appendix A for a more detailed description of the fieldwork methodology.

For this paper, we will primarily use data from the second wave, for three reasons. Firstly, there is a larger sample-size; in wave one half the sample received their product for free, and so this data is not useful for our purposes. Furthermore, of those remaining who were offered a product for sale, the means of distribution was not constant; half were approached by a salesperson from an NGO, half by a salesperson from a for-profit firm. This variation and smaller sample size would undermine our efforts to draw robust conclusions. Secondly, the team of salespeople for wave two was larger, and contained a higher proportion of females, thus giving us more variation within the group of female salespeople. Finally, by the time of the second wave of marketing, due to the timing of harvest for a number of local crops, households were more likely to have cash available on the spot. This is preferable as it means decisions on purchases are more likely to have been made based on the qualities of salespeople rather than the extent of cash constraints.

However, data on usage of the health products was collected between the first and second waves. Four to six weeks after the first wave of marketing we returned to 10% of the households that had received products, and asked to see the product packaging[4] to check how much of the product was remaining. We had a record of how many tablets each customer received, and so we are able to generate a measure of proportional usage. This ranges from zero (no tablets were used) to one (all the tablets received were used). The important point here is that when we discuss usage, we will be using data from the first wave. The sample size here is small – roughly 200 customers. Once we break this down by salesperson and customer gender, the numbers are very small. Thus our findings on usage must be treated as suggestive of potential trends rather than firm statistical correlations. Nonetheless, the data on usage is still of interest.

The data allows us to test the relationship between a number of independent and dependent variables. The key independent variables of interest will be the gender of the customer, the gender of the salesperson, and an interaction term between these two. The key dependent variables are the decision to purchase, which is a simple binary, and quantity purchased, which was capped at a maximum of five

[4] Customers had been informed on receiving a product that they had been entered into a lottery, and that if selected they would need the packaging from the product to redeem a prize (bags of salt).

units[5] and runs from zero to five in positive integers. These equate to the extensive margin (decision to purchase) and intensive margin (quantity purchased) respectively, and so we can test the findings from Bertrand *et al* and Landry *et al* on the impact on extensive and intensive margins. Together these variables represent uptake decisions. The final dependent variable we will look at is proportional usage, which as discussed above runs from zero to one and indicates the proportion of tablets received that had actually been used.

While assignment of the treatments that constitute our independent variables were not formally randomized during the data collection[6], Appendix B presents the analysis of randomization. These indicate that our key independent variables are not significantly correlated with any of our dependent or other control variables. As such, the results of this paper can be considered robust, though no claim is made here that this was a formal randomized trial focused on the present research question.

The products

A brief discussion of the products themselves is useful, as they have attributes that may become relevant for the analysis. Firstly, whether products are well-known to the customers, or whether they are new. Dupas (2010) discusses the introduction of new health products, and suggests that the existence of a "comparable status quo technology" is important. The existence of such comparable technology, she claims, could give households an idea about the likely usage costs and effectiveness of the new product. These type of priors about new products significantly affect uptake. Detailed information was gathered about the availability and recognition of each of our products in every village we operated in, which gives us a good idea of how customers were likely to view the products offered by the salespeople. It is important to remember, however, that for most of the data we will be using (from the second wave), all the customers will at least have been offered the product once before from the first wave, and many will have actually purchased and used it.

The second distinction is the usage instructions with regards to age, and to a lesser extent gender. Some of the products were banned for use by children while some were designed specifically for children. Understanding these subtleties could be important if we are to try and understand why gender affects sales outcomes. Finally, we must make a distinction between preventive and curative products. Preventive products are used in advance of any symptoms or ailments, to prevent health problems from arising. Curative products are used once symptoms or ailments occur, to cure or reduce problems.

[5] One unit corresponds to ten tablets for Panadol and Zinkid, six tablets for Elyzole, and eight tablets for Aquasafe.

[6] As mentioned above, the central research question behind the data collection was not the one considered in this paper.

Banerjee and Duflo (2011) concisely underline the health and financial differences between preventive and curative healthcare; preventive measures tend to be cheaper but using them faces 'time inconsistency' obstacles. Curative measures tend to be more expensive but can demonstrate a more concrete impact on the sick when used. This is also relevant when discussing usage; if a curative product has not been used, it could simply mean that no-one has fallen ill, rather than indicating ineffective marketing. So, below is a brief description of each of the products, and where they stand in relation to the three categories outlined above. It is important to note that all the usage instructions and guidelines were conveyed verbally and on pamphlets to customers; they would have been very likely to have understood what the product was, what it did, and who should use it.

Panadol was by far the most well-known product. Most customers would have been familiar with the product (painkillers) and with the brand itself. The brand and other substitutes were widely available in most drug-shops. The type of Panadol used was aimed at adults only; children under 12 could not use it. Perhaps another important factor for us; pregnant women were not allowed to use it. This is relevant, as it could potentially bias women against using it. Finally, Panadol is of course a curative product; it is only for use once symptoms (pain) become apparent.

Elyzole was less well-known, but other brands of deworming medication had been widely distributed, and so while the brand was often new to customers, they were familiar with deworming medication, and its costs and benefits. Although Elyzole could be used by people of any age (except babies), parasitic infestations are most acute amongst children. In this respect, Elyzole can partly be seen as a product more likely to be used by children. And again, Elyzole is a curative treatment, it does not prevent future worm infestations, it simply kills any parasites already in the gut.

Restors and Zinkid are slightly more complex. Restors and Zinkid were sold in combination, with one sachet of Restors to ten Zinkid tablets. Restors was a new brand, but generic ORS was widely used and recognized, and freely available from health centers. Thus, there was a strong expectation that ORS should be free, and a high degree of familiarity with the product. As such, it makes sense to focus on the characteristics of Zinkid. Zinkid was a completely new product. The importance of zinc supplements in combating diarrhea had only recently been publicized, and as such Zinkid represents a completely new brand and product, with no 'comparable status quo technology' at all. Furthermore, Zinkid was a product specifically aimed at children. While it could be used safely by adults, the target age group was six months to five years. In terms of being preventive or curative, Zinkid is slightly ambiguous. While it should be used with the onset of loose stools to reduce the severity and duration of diarrhea (so curative), it is also claimed that using Zinkid will reduce the likelihood of diarrhea returning for three months (preventive).

Finally, Aquasafe was one of two brands that dominate the water purification market in northern Uganda, the other being WaterGuard. The concept of water purifiers was well-known and understood, while the Aquasafe brand itself was relatively new although certainly not unheard of. As such, it is neither a new brand nor a new product. It should be used by all members of the family, without discrimination in terms of age or gender. Aquasafe is the only product which is explicitly preventive. It is recommended to use water purification at all times, for all drinking water, to prevent parasites and other diseases being transmitted. One implication of this is that if used properly, a household would need a large quantity of Aquasafe, and there would not necessarily be any immediate positive learning effects from using it. This will also become relevant when discussing usage of the products. Finally, Aquasafe is the only product which was not used during the first wave of marketing. Every customer who was offered Aquasafe in the second wave would have been offered one of the other three products in the first wave, and so there will not have been any learning possible.

4. Gender and sales outcomes: hypotheses

Given our understanding of the data at our disposal, and of the current literature on the topic, we can begin to formulate hypotheses about the impact of gender on sales outcomes. The first point to make is that male and female customers are likely to have different *a priori* preferences. Work on gender-based preferences would lead us to expect that women will demonstrate a preference for health products, and perhaps also child-focused health products. Bear in mind, however, the hypothesis that within the household women have less financial decision-making power. If correct, we may fail to see any association between the gender of the customer and our uptake indicators. Nonetheless, our first null hypothesis will be as follows:

Null(1): *there is no association between the gender of the customer and uptake decisions.*

On proportional usage, we have no basis on which to form strong expectations about what how gender might affect usage. Intuitively we might suggest that usage is subject to the same influences as uptake decisions; so factors that induce higher uptake also induce greater usage. However, given the lack of evidence to support this view, and the inferior quality of the data on usage, we will not develop a specific null hypothesis to test with regards to usage.

Yet while still important, these *a priori* preferences are of secondary interest to us. We are interested in the point of sale, and what factors are more effective. What do we mean by 'effective'? The argument here is that a more effective salesperson is better able to *persuade* the customer to make a purchase, to purchase a greater quantity, and then to use the product more, irrespective of their *a priori* preferences.

It is this element of persuasion that is important. The customer will make a decision about whether to purchase or not, and an effective salesperson will have a greater influence on this decision-making process. Understanding preferences is helpful for knowing which groups to target, but understanding whether the gender of the salesperson can alter these preferences is arguably of even greater importance.

We know from the psychology literature that in making decisions, there are two types of 'thinking' that we adopt. System I decision-making is fast, intuitive and often made unconsciously or automatically. On the other hand, System II decision-making is slower, more deliberative and conscious, and requires concentration and agency (Kahneman 2011). In the context of deciding whether or not to purchase a health product from a door-to-door salesperson, factors such as the comparative market price of the product, its local availability, the sell-by date of the product, or the likelihood of the product being needed or useful in the household would all be considered to influence System II decision-making. The attractiveness of the packaging, one's rapport with the salesperson, and perhaps even one's mood at the time of the sales pitch would all be considered factors that would affect System I decision-making.

Bertrand *et al* find evidence that System I factors can have a significant impact on decision-making over loan uptake, arguably a more important topic for decision-making than whether or not to buy a relatively cheap health product. Thus we can expect System I factors to be important for marketing. The channel through which gender might influence purchasing decisions is certainly System I; the literature surveyed above suggests that trust, attraction and competition are all mechanisms through which behavior could be affected. Gender-based feelings of trust, attraction and competition are all likely to trigger responses through System I thinking. Yet it is important to break down what exactly we might expect. As discussed above, certain papers found that women tended to be trusted more than men (Feingold 1994, Wright & Sharp 1979). If this is indeed the case, then we would expect female salespeople to be more effective, as they trigger a System I reaction through the trust channel. Thus we have our second null hypothesis:

Null(2): *there is no association between the gender of the salesperson and uptake decisions.*

When we move on to consider the importance of attraction, it is clear that we must bring in the interaction between the salesperson's and the customer's gender. We saw that women tend to benefit more from the 'beauty premium', and that attraction can be important. Therefore it is much more likely that it will be male customers who are attracted to women and display different purchasing behavior

because of it[7]. We also have reason to believe that this interaction between female solicitors and male respondents/customers exists from the Bertrand *et al* and Landry *et al* studies discussed above. So we can suggest a third null hypothesis to test:

Null(3): *there is no association between the interaction of the customer's gender and the salesperson's gender, and uptake decisions.*

Finally, when we refer to 'uptake decisions', again it is important to specify what we mean. As previous studies have found, factors triggering System I thinking have tended to influence the extensive margin rather than the intensive margin. With regards to this paper, then, we would expect that any effect observed would be on the extensive margin of uptake decisions (greater number of decisions to purchase), rather than on the intensive margin (number of units purchased). Anecdotally this result is also expected as many households simply did not have the cash to purchase more than one unit, and so while it was possible to decide to buy one unit rather than none, it might have been less financially viable for customers to buy many more than one once the decision to purchase had been made. Thus our fourth and final null hypothesis will be:

Null(4): *there is no difference between the effects observed on the intensive and extensive margins of uptake decisions.*

In the interests of space we will not go into detail on any expectations we might have in relation to specific products, but breaking down the results by products may simply help us when carrying out the analysis.

5. Results

Below are selected results from regression analysis run on the data. See Appendix C for regression tables.

Customer gender and uptake

Regressions 1 to 5 of Table 1 shows the results of OLS regressions between the variable 'sale_purchased2' which is a binary indicator of whether the customer chose to purchase or not, and 'customer_gender2', which again is a binary indicator of the gender of the customer that was marketed

[7] It is worth noting that Uganda is one of the worst countries in the world for acceptance of homosexuality, making the likelihood of female customers displaying behavior stemming from attraction to female marketers minimal.

to[8]. We control for the quantity of product received in the first wave ('quantity_received'), whether the customer was the same person that was marketed to in the first wave as opposed to the spouse ('respondentfound2'), the two treatment variables from the first wave ('ngo' and 'sale'), and the product received ('product2'). It is clear from regression 1 that the independent variable of interest, 'customer_gender2' has no statistically significant association with 'sale_purchased2'. Interestingly, there is some variation when we look at the results for specific products in regressions 2 to 5. Here we can see that for Elyzole and Aquasafe, the coefficient for 'customer_gender2' becomes significant at the 1% and 5% level respectively. What is more, the coefficients for both are relatively large. However, while the coefficient for Elyzole is positive suggesting female customers tend to purchase more often, that for Aquasafe is negative, suggesting that men tend to purchase more often.

In regressions 6 to 10 in Table 1 we replace 'sale_purchased2' with a log of 'sale_quantity2' (indicating how many units of the product were purchased) as the dependent variable, and we limit our sample to only those who did actually make a purchase, so we can test whether customer gender had any effect on the quantity purchased among those who had already decided to purchase. Somewhat surprisingly, in regression 6 the coefficient on 'customer_gender2' is significant at 1% and negative indicating that male customers are associated with purchasing 7% more units. However, when we break this down by product (regressions 7-10), this significance disappears for all products except Aquasafe, for which 'customer_gender2' is significant at the 5% level and also negative. This is consistent with the findings on decisions to purchase; male customers tend to purchase more Aquasafe.

Salesperson gender and uptake

To test the effect of the salesperson's gender, we will simply replace 'customer_gender2' in the above OLS regressions 1-5 with 'marketer_gender2', once again a binary indicating the gender of the salesperson, and include the gender of the customer as a control variable[9]. Table 2 presents the results on this. The coefficient for 'marketer_gender2' in regression 1, when the dependent variable is decisions to purchase, is strongly significant and positive, indicating that female salespeople are associated with 8% more decisions to purchase. Note that the significance and magnitude of the coefficients on 'marketer_gender2' remain unchanged with the inclusion of 'customer_gender2' as a control. This association remains positive and significant at at least the 5% level when we break the results down by product in regressions 3-6. Note also the magnitude and significance of the relevant coefficients in regression 6 for Aquasafe; these will be discussed below.

[8] Note: these results remain almost entirely unchanged when we run the same regressions using a probit model, not shown here.

[9] Once again, these results are very similar when running probit model regressions, not shown here.

When the dependent variable is quantity purchased, the pattern changes. Regressions 7 and 8 show results when the dependent variable is a log of 'sale_quantity2'. We can see the coefficient on 'marketer_gender2' is not significant for the whole sample, and it is also not significant when we look at separate products (results not displayed). The implication here is that the gender of the salesperson has no significant association with the quantity purchased once the decision has been made to make a purchase. For all the regressions in Table 2, the inclusion or removal of 'customer_gender2' as a control does not substantially affect the coefficients on 'marketer_gender2'.

Customer-salesperson gender interaction and uptake

Table 3 presents results concerning the interaction between salesperson gender and customer gender. We introduce an extra independent variable 'interact2' to capture this interaction. Regressions 1 and 5 indicate that this interaction has no significant association with either of our uptake indicators, 'sale_purchased2' or a log of 'sale_quantity2'. Note however that the coefficients for 'marketer_gender2' and 'customer_gender2' remain relatively unchanged from earlier regressions despite the inclusion of the interaction term. Once again, results for Aquasafe only have been included in regression 2 as this was the only instance where the interaction term became significant (albeit weakly, at 10%). Our previous results on Aquasafe suggest that this may not simply be an outlier.

When we run regressions separately for male and female customers (regressions 3 and 4), the coefficient for 'marketer_gender2' is positive and significant for both male and female customers, although it is greater for men at nearly 11%, compared to less than 6% for women. While not capturing the interaction in the same way as regressions 1 and 5, these are still interesting indications, particularly given that these variables lose their significant coefficients when the dependent variable is a log of 'sale_quantity2' in regressions 6 and 7.

Proportional usage

Now we will consider the impact of gender on usage of the products. We will regress 'proportional_usage' against similar independent variables to those used above, but taken from wave one; 'customer_gender1', 'marketer_gender1', and an interaction between these two 'interact1'. Table 4 presents the results. Regressions 1 to 3 indicate that neither customer gender nor salesperson gender alone seem to be significantly correlated with usage in our sample. But in regression 4, the coefficient on the interaction between the two is significant, positive, and large in magnitude. Bringing in regressions 8 to 11, there is reason to suggest that it is the interaction between female salespeople and female customers that is associated with higher proportional usage. Meanwhile regressions 5 to 7 present the only regressions for which there were statistically significant results when narrowing the

focus to individual products. Particularly interesting is regression 6 (for Panadol only); while the coefficient on the interaction term is positive and in line with the whole-sample results in regression 4, the coefficient for 'marketer_gender1' is significant too, but negative. This runs contrary to the evidence from regressions 8 to 11 that it is female-female interaction that is important. Of course, given that the number of observations for these regressions is so small, it is important not to read too far into these results.

6. Analysis

Now that the results have been presented, we can refer back to our expectations and consider what can be learnt.

Customer gender

The results in Table 1 do not present compelling enough evidence to allow us to unequivocally reject the first null hypothesis. There is no strong overall association between the gender of the customer and decisions to purchase, as is displayed in regression 1. Although this is in contrast to findings elsewhere that men and women have significant heterogeneous preferences, this is perhaps not a surprising result. It has been mentioned that separate intra-household accounting could be less prevalent in northern Uganda, and so this could be a reason why the different preferences of male and female customers were not observed.

Yet one trend that seems to be strong and is not exhibited elsewhere is the tendency of female customers to decide to purchase Elyzole more frequently. Regression 3 indicates that in our sample, female customers were associated with 11% more decisions to purchase Elyzole. One inference that could be drawn from this is that women do indeed have a preference for child-focused health products, as is suggested in other literature, but they are less willing to experiment with new and untested products such as Zinkid. However, in the absence of further evidence corroborating this suggestion, it is not possible to make a more confident conclusion, and so this must remain as a tentative theory in need of further research. The results for Aquasafe will be discussed separately below. Broadly, then, it seems that the gender of the customer is not significantly associated with the extensive margin of uptake decisions – decisions to purchase.

The picture changes when considering the intensive margin of uptake decisions – quantity purchased. Taking the whole sample of only those who decided to purchase, regression 6 suggests that men are associated with purchasing larger quantities. One interpretation of this result is that men do indeed

wield greater financial decision-making power within the household, and so feel more able than women to make profligate cash outlays. Unfortunately we have no data which captures the wealth or income of households, as this might be a valuable factor to control for and help test this theory. Importantly, while it may appear that sales of Aquasafe are driving this trend, this is not in fact the case; when we remove marketing involving Aquasafe, the significant relationship for the rest of the sample remains, although the level of significance and magnitude of the coefficient are marginally reduced (not shown here). The conclusion we may draw based on this evidence is that once a decision to purchase has been made, male customers are more likely to purchase a greater quantity of health products.

Overall then, there is mixed evidence on whether simply targeting either male or female customers would have a significant impact on uptake decisions. Given that we see minimal evidence that either gender is more or less likely to decide to make a purchase, but that once a decision to purchase has been made male customers are more likely to purchase more, it seems reasonable to argue that if anything *men* should be targeted over women. If we accept the assumption that (up to a point) it is always preferable for families to receive a higher quantity of health products, then based on the evidence presented here it would be difficult to make the case for targeting women over men. Certainly this assumption is not universally valid, but given that lack of health products is an enduring problem in the region, the adage 'more is better' seems to hold in this context at least. More broadly, these results cast doubt on schemes solely targeting women, which may not necessarily be increasing their effectiveness by limiting their potential recipients in this way.

So can we reject our first null hypothesis? Tentatively, and with caveats. There does seem to be an association between customer gender and uptake decisions, but only on the intensive margin – quantity purchased.

Salesperson gender

The importance of the gender of the salesperson is really the primary interest for this paper. Unlike customer gender, which is potentially more difficult for social marketing organizations to alter,[10] changing the gender of salespeople is relatively easy. Simply employing people of the desired gender entails no additional costs, guarantees that 100% of marketing interactions will be subject to this condition, and does not exclude any households. It is promising, then, that salesperson gender was found to be significantly correlated with purchases. Female salespeople were significantly associated with a greater number of decisions to purchase, and this correlation remains significant for each of the products individually at 5% confidence or less; it does not appear to be driven by one product in

[10] More time spent searching for the right customers, the need to withhold sales to certain households, the need to explain this policy choice to excluded and potentially angry households, for example.

particular. Interestingly, the coefficients on Zinkid and Aquasafe are at 9% and 12% respectively, the largest coefficients of all the specifications. They were both newer products which were less likely to have been seen or used by customers before. This can potentially be explained by the fact that women tend to be seen as more trustworthy, and where customers are making decisions about products they are not familiar with, trusting the salesperson is likely to become more important.

However, in keeping with findings in both Bertrand *et al* and Landry *et al*, the correlation between salesperson gender and uptake decisions is limited to the extensive margin only; there is no significant correlation when the dependent variable is the quantity purchased. While the results suggest that female salespeople are more effective than male salespeople in persuading customers to decide to buy a product, they do not seem to be as effective in persuading customers to buy in greater quantities. There are a number of explanations for this finding. Firstly, cash constraints are likely to have been binding; many households were likely to have only had enough cash to purchase a small number of units. Thus while customers could be persuaded to decide to buy one unit, they couldn't afford to buy large quantities and so the effect of persuasion disappeared.

Secondly, this can be explained by the nature of marketing. Anecdotally, it was observed that salespeople would deploy their persuasive techniques to encourage customers to buy a product, but once a customer had decided to make a purchase, there was not the same effort made to encourage customers to buy more units. The salespeople were not rewarded for the quantities they sold (in fact their remuneration was in no way tied to their sales performance), and so they had no incentive to push for higher quantity purchases. Bluntly, persuading a customer to purchase was considered the chief battle, once this had been won less emphasis was put on quantities. Thus we do not see evidence of salespeople with superior persuasive powers (women) having an impact on quantities purchased.

The results allow us to reject the second null hypothesis, though again only partially. There is a significant association between the gender of the salesperson and uptake decisions, although this is restricted to extensive uptake decisions. Female salespeople were associated with 8% more decisions to purchase, and this is at the 1% confidence interval. Although this is not of a huge magnitude, the product-specific breakdowns suggest that the effect is larger with certain products, particularly new ones that might require customers to trust the salesperson. We have no conclusive evidence to support this theory, but it is a promising area for further research. Based on these findings, however, it seems there is reason to support the *Living Goods* approach of using women only to market goods – women do appear to be more effective at marketing health products.

Customer-salesperson interaction

Based on the literature reviewed above, and the findings from tests on customer and salesperson gender separately, one might have expected the interaction between these two independent variables to have been important too. Yet while customer and salesperson gender seem to have had a significant association with intensive and extensive uptake decisions respectively, the results presented in table 3 indicate that the interaction between the two is important for neither type of uptake decision. As such, we fail to reject our third null hypothesis.

Explaining this result is not straightforward. The implication is that the different techniques and strategies employed by male and female salespeople respectively to influence customers' uptake decisions do not have different effects on customers depending on the customers' gender. Alternatively, it could be evidence that salespeople change their persuasive strategies based on the gender of the customer; salespeople do not use constant persuasive techniques. Here our results diverge from the findings of Landry *et al*. They found that in particular female solicitors had greater success when approaching male customers (a result which intuitively is not surprising). However, although our regressions in Table 3 display no significant coefficients on the interaction terms, we do have some secondary results which go some way to supporting the findings of Landry *et al*. Regressions 3 and 4 of Table 3 present results from regressions in which only the male and female customers respectively have been included. These indicate that being a female salesperson is significantly correlated with decisions to purchase, but that the effect is larger for male customers than for female customers. While certainly not conclusive, these findings suggest that there may be reason to investigate further the relationship between female solicitors and male customers, particularly concerning extensive uptake decisions.

Usage

As has been made clear, the results for usage of health products are based on data from the first wave of marketing, and the sample size is much smaller. Nonetheless, we do see some interesting relationships, which are certainly suggestive that gender matters for usage too. In some respects, understanding factors which affect usage are of paramount importance; households that receive health products but never use them are no better off than those who received nothing at all[11]. As Cohen & Dupas and Ashraf *et al* have demonstrated, uptake does not necessarily translate into usage. The coefficient on the interaction term in regression 4 of Table 4 is significant at the 5% level, and more surprisingly is positive. It appears that specifically female-female interactions are associated with higher

[11] Indeed, they are maybe even worse off – they have made a cash outlay for the health products too.

levels of usage (though in the specific case of Panadol, the coefficient for 'marketer_gender1' is significant and negative, suggesting male salespeople are associated with higher usage levels). Although the results are somewhat patchy, there are two key points that can be extracted from the data on usage. Firstly, the gender of the individuals taking part in a transaction can matter for usage. And secondly, the magnitudes of the significant coefficients are large; the impact can be considerable.

These results contradict the findings of Ashraf *et al* who observe that the conditions of a purchase do not affect usage. They found no evidence that the price actually paid for a product affects usage. Rather they argue that certain people or households have a higher *a priori* propensity to use a product, and these are the ones that decide to purchase (or pay more). On the contrary, our results suggest that the conditions of the purchase do affect usage. They suggest that being sold a product by a salesperson of the same gender as the customer is associated with using more of it, and so the conditions (being visited by a male/female salesperson) do affect usage. Of course, we cannot rule out the possibility that people who have a higher propensity to use Panadol, say, decide to buy it from male salespeople more often. However, there is no obvious reason why this might be the case, given that male salespeople do not seem to elicit any particular kind of behavior from customers in other circumstances.

Extensive and intensive margins

This aspect of the results has already been discussed in some detail above, and so does not require extensive elaboration. Overall, we can reject our fourth null hypothesis with some confidence. The gender of the customer was correlated with changes in the intensive margin only (quantity purchased), while the gender of the salesperson was correlated with changes in the extensive margin only (decisions to purchase). Thus it seems to be the case that the way people make decisions (or are persuaded) about whether or not to make a purchase, and about how much to purchase differ in a significant way. The debate over which is a greater priority cannot be held in full here; but given the possibility of 'learning' about a product it seems important to ensure as many households as possible receive at least a sample which might encourage them to purchase or use it again in the future. The implication is that expanding on the extensive margin is a worthwhile pursuit.

Aquasafe

In almost all the specifications run, behavior around Aquasafe stands out. Table 5 pulls together the results for Aquasafe only from the various different specifications run in Tables 1-4. There is a consistent pattern. Coefficients on customer gender tend to be negative, and those with salesperson gender tend to be positive. What's more, the sizes of the coefficients tend to be large, often larger than for the sample as a whole. The significance of the customer's gender remains for both decisions to

purchase and quantities purchased, which differs from the whole sample where the customers' gender is not significant for decisions to purchase. Particularly interesting is the fact that the interaction between customer gender and salesperson gender seems to be significant (although only at 10%), again unlike the whole sample. Looking at the general picture, there is a fairly clear story in which male customers are more likely to buy Aquasafe, and buy more of it, and female salespeople are more likely to be associated with selling Aquasafe more often, and there is a particularly strong effect when female salespeople sell to male customers. As the usage data comes from wave one where Aquasafe was not distributed, we have no usage data for Aquasafe.

Behaviour around Aquasafe conforms much more to that observed in the Landry *et al* paper discussed above. Without richer qualitative data on reasons behind uptake decisions, we can only speculate on why this is the case. But there are certain plausible theories. Firstly, unlike with all the other products, those customers allocated Aquasafe had not necessarily come across the product or brand before. As such there was less familiarity with the product, and so trust (in the salesperson) and persuasion (by the salesperson) played a greater role in the decision-making process. This would lead a pattern similar to the one observed; with male customers buying more, and female salespeople selling more. Secondly, Aquasafe was the only product which is preventive; all the others are curative health products. Perhaps this makes Aquasafe a product for which persuasion can play a greater role in the decision to purchase. Whereas for the other curative products, there was less room for persuasion; the product was either needed or not needed, a family member was either afflicted by a health problem or they weren't. We expect women to be better at persuading, and men to be more persuadable. Perhaps this is simply better reflected when the product is not obviously a necessity, and thus persuasion becomes more important.

7. Conclusion

To bring these various threads together, it is useful to return to the concept of social marketing, and consider its stated and implicit goals, and the assumptions behind these. The first goal of social marketing is to increase uptake of products; by delivering products more efficiently and cost-effectively, more households will receive important products for improving their health, wealth and productivity. The assumption here is that increasing cost-effectiveness will allow for more widespread and/or more sustainable distribution of these products. Behind this goal is the desire to see more individuals actually using these products; the assumption is that the more people that receive these products, the larger the number of people that will actually use them. This is the second goal. Ultimately, of course, these two goals are predicated on the desire to see improvements in the health,

wealth and productivity of low income sections of society. This assumes that using the products will have the intended effect on health, wealth and productivity.

Given these goals, it is now pertinent to consider what we mean by 'effective' social marketing. Below are three conditions that social marketing schemes should aspire to. The order corresponds to the descending degree of control one would have over the outcomes:

1. Maximum uptake of products for minimum distribution costs
2. Maximum usage of products by those receiving them
3. Maximum benefit to customers from using products

The benefit felt by customers depends on the quality of the products and the way they are used. For our purposes we will consider this to be constant; the benefit from using a product is the same irrespective of conditions of purchase[12]. On usage of products, existing literature (discussed above) suggests that usage does not vary based on price; at best there is ambiguity about the impact of price on usage. The tentative results on usage presented above suggest that conditions of purchase other than price might be important; the gender of the salesperson and the customer could affect usage, though these particular results alone are too weak to support this hypothesis. Nonetheless, in the absence of further robust evidence on determinants of usage, the assumption that usage is to some extent positively correlated with uptake seems valid.

Thus we come to the issue of uptake. Again, there has been considerable scholarly attention given to the impact of pricing on uptake. It is quite likely that varying price does indeed generate the largest change in uptake. However, the central argument posited here is that uptake levels are based on decisions made by the customer during marketing, and that there are a variety of factors which influence this decision, of which price is only one. Furthermore, while the price may be the largest factor influencing customer decisions, it is also very expensive to vary. Thus, given that social marketing is concerned about cost-effectiveness, investigating other factors that can influence decisions which are cheaper to vary is important. The price of a product triggers System II decision-making. Yet a variety of papers (discussed above) have argued that even for important decisions, System I decision-making processes are used and can be influential.

This paper has presented evidence that the gender of the salesperson has an important impact on customers' decisions on whether to purchase a product or not. Customers of both genders are more likely to decide to buy a product when the salesperson is female. The argument is that female salespeople are better at influencing customers' System I decision-making processes towards making a

[12] Not necessarily the case, but limitations of space require us to forgo discussing this aspect.

purchase. Likely channels for this include greater trust, the beauty premium and deploying more effective persuasive techniques. The results suggest that female salespeople are associated with 8% more decisions to purchase than male salespeople. Thus the gender of the salesperson must be seen as another factor that influences customers' decisions. While the impact of varying the salesperson gender on uptake may not be as great as varying the price, employing only female salespeople entails no additional costs. Using only female salespeople is an easy way to improve the cost-effectiveness of an operation, a key goal for social marketing schemes.

In the broader context of development's search for 'low hanging fruit', this finding perhaps only weighs in as a small grape rather than a hefty jackfruit. Yet given that it is low-cost to implement, and furthermore ticks other important boxes for empowering women and creating livelihoods for them, there is reason to assert that the claims made in this paper merit further and more rigorous investigation. Testing the impact of other factors on customers' System I decision-making about whether to purchase health products could yield further improvements in cost-effectiveness, and further bolster the rise of social marketing as a tool for sustainable and cost-effective development.

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9. Appendices

Appendix A: Fieldwork Methodology

The fieldwork was carried out in Gulu District, northern Uganda. There is a relatively high level of linguistic and ethnic heterogeneity amongst the population[13], and the field marketers were all also locally recruited, reducing communication and identification barriers between marketers and respondents. Two rounds of marketing were conducted, with a gap of approximately 6-8 weeks between the two rounds.

Sampling strategy for villages and respondents

The fieldwork was carried out partly in collaboration with a separate study, and this influenced the selection of villages and respondents. There was a preference for maximizing overlap between the two studies in terms of respondents, and so where possible, marketing was conducted in villages also targeted by the sister-study, and within these villages, respondents from the sister-study were also prioritized. Randomly selected villages[14] were added to these pre-selected villages to total 120 villages. Random selection of respondents was done using village leaders' household lists[15], and names from the sister-study were included to total 45 respondents per village. Within each village respondents were divided geographically into three clusters and each cluster assigned to a marketer.

Products – overview and assignment strategy

Product assignment was randomized at the individual level. Each respondent was assigned one of three products prior to the first round of marketing. Within each of the three clusters in each village, each respondent was randomly assigned to a product. For the second round of marketing, the majority of respondents remained assigned to the same product as in the first round. However, a fourth product was also included in the second round. To assign respondents to this product 25% of respondents were randomly selected (ensuring balance across treatment groups) from the first round and re-assigned to the new product. There were also instances in the second round when respondents had to be assigned to a different product for logistical reasons.

In the first round of marketing, three product options were available. They were Panadol (a painkiller), Elyzole, (deworming medication), and a combination pack of Restors (oral rehydration salts) and Zinkid (zinc supplements). In the second round the extra product was Aquasafe (a water purifier). These products (and the specific brands) were selected based on a number of criteria. Firstly, the availability and affordability of the products throughout the District. Secondly, the level of familiarity respondents were likely to have with the brand or similar generic products. This was important for discerning possible respondent learning effects from using the products. Finally, the target user groups. Data on the availability and price of these and other products was collected prior to marketing in every outlet providing or selling health products in every village selected for marketing. Furthermore, village

[13] More than 80% are from the Acholi ethnic group, and most inhabitants speak the Acholi dialect of Luo.
[14] Using the Gulu Municipal Council village list.
[15] The village lists contain one household per page. Field staff were provided with lists of randomly generated numbers, which were used to select random page numbers from the lists. The head of each household on the specific page was written out.

leaders in each village were asked about the recent distribution history of each product in that village. This data, along with stated guidelines on product usage was used to select these three products.

Randomized Treatments

In the first round of marketing, there were two treatments assigned, randomized at the village level. The first treatment was the type of distributing organization; either a not-for-profit organization or a for-profit business (see below). The second treatment was the price of the product, either free or at roughly market price[16]. These treatments were evenly assigned across all 120 villages, meaning there were 30 villages with each combination of treatment assignments. For the second round of marketing, all villages were assigned the same treatment; the distributing organization was always a for-profit business, and the products were always for sale[17].

The type of distributing organization was problematic to impose. Innovations for Poverty Action (IPA)[18] is relatively well known in the region, having conducted a number of studies there in the past. To observe natural behavior it was important that respondents were not aware that the marketing exercise was in fact being conducted for research purposes. For this reason, during fieldwork real Ugandan organizations were partnered with to enhance the perception that this was genuine marketing. In the first round, the non-profit partner was the Uganda Health Marketing Group (UHMG)[19], while the for-profit business partner was Star Pharmaceuticals Ltd.[20] In the second round the for-profit business partner was replaced, to minimize the chance of respondents displaying learning effects about the individual organization rather than for-profit businesses in general. Thus, for the second round the partner was Surgipharm Uganda Ltd[21]. In all cases, field staff would present themselves to customers as employees or representatives of the relevant partner organizations.

Marketing Strategy

[16] The price at which each product was sold was determined by the data collected on pricing in the villages. Despite considerable price variation between villages, it was decided to set one price for each product for the whole sample. The price was set based on mean and median prices across the district, with a bias towards the lower end of the spectrum, to minimize the likelihood of pricing respondents out. The prices set in the first wave were as follows: Panadol: UGX500 ($0.20) for a strip of ten tablets, Elyzole: UGX1800 ($0.71) for a pack of six tablets, Restors/Zinkid combination pack: UGX2000 ($0.79) for one sachet of Restors and ten tablets of Zinkid.
[17] In the second round, prices for the products remained the same as they had been for the first round. It is important to note, however, that inflation over this period was extremely high, and so while the nominal price remained the same, the real value is likely to have declined. Aquasafe (the extra product) was sold at UGX800 ($0.32) for eight tablets.
[18] The organization conducting the data collection.
[19] A large Kampala-based NGO predominantly funded by USAID, focusing on the distribution and promotion of health products.
[20] A large Kampala-based pharmaceutical company with an extensive distribution network across Uganda, involved in importing, distributing and developing medicines and other products for sale throughout Uganda.
[21] The largest pharmaceutical company in Uganda, based in Kampala. Largely similar to Star Pharmaceuticals Ltd., except that it also operates in Kenya.

Marketers would search for their assigned respondents by name, also using sketch maps of the village obtained from village leaders which pin-pointed the location of each respondent. Once with the respondent[22], marketers delivered their organization-specific introductions.

Marketers then delivered a product-specific sales pitch, and answered any questions about the product, including on medical guidelines concerning usage and dosage[23]. Respondents were not informed that marketers were selling a variety of products, and the intended impression was that the assigned product was the only product the marketer was selling. In the first round the respondent was either offered one unit of the product for free, or up to a maximum of five units of the product for sale depending on treatment assignment. In the second round products were only for sale. Prices and quantities were non-negotiable.

The differences between the first and second round of marketing were consciously minimized to allow for a better comparison between the two. The key differences were the distributing organization, the assigned treatments, and for 25% of the sample the assigned product. Furthermore, the wording of all scripts was changed without significantly affecting the content, to reduce association between the first and second rounds. During the second round, marketers maintained ignorance about any previous marketing activities in the area, and claimed to be unconnected to the first round marketing activities.

Usage data

Between the first and second rounds of marketing, data on product usage was collected. 10% of respondents who had received a product in the first round were randomly selected to be visited for usage checks[24]. On reaching these respondents, enumerators administered a brief survey about what the respondents remembered of the marketing exercise and who had used the product. Enumerators then asked to be presented with the product packaging which respondents had received from the marketer[25], which allowed enumerators to count and record how many tablets were remaining in the pill strip[26]. Usage enumerators introduced themselves as being from a partner organization to the one recently marketing in the village. Again, no mention was made of IPA, or of the second wave of marketing that was soon to follow.

[22] In cases where respondents could not be located, the spouse of the respondent was accepted as a replacement. Spouse was understood as first husband/wife of the intended respondent only, who must still be living in the same dwelling or compound as the intended respondent. No other type of relation was accepted.

[23] One component of the field staff training was led by a pharmacist to instill a rigorous understanding of such guidelines.

[24] During the first round of marketing, all respondents who had received a product, either for free or purchased, were informed that that they had also been entered into a lottery. They were told that if selected, they would need to present all the packaging of the products (meaning specifically the pill sheets) received in order to claim their prize. It was clearly reiterated that it was irrelevant how much of the product was used, the packaging was all that mattered. Three respondents who had received products were then randomly selected from each village, totaling to 360 respondents, or roughly 10% of the sample. It was decided to randomly select within each village rather than from the whole sample so that balance by treatment assignment could be maintained.

[25] Enumerators were given details about how many units of the product each respondent had received, and so were able to verify whether *all* packaging was present. Furthermore, all pill strips distributed by marketers in the first round had been discretely marked so that they could be identified as packaging distributed *our* marketers, rather than the same product obtained from elsewhere.

[26]Thus using our data on how many tablets had been received from the marketer, we are able to calculate the number of tablets that have been used. Of course, there is no way of ascertaining for certain whether these tablets had been used properly, or even used at all, but this measure at least gives some indication of usage. If respondents did produce the correct packaging, they were given three bags of salt as their 'lottery prize'.

Appendix B: Randomization analysis

Below is a reproduction of ttest results run on key variables used in the analysis. Apologies for presentation.

```
ttest customer_gender1, by (marketer_gender1)

Two-sample t test with equal variances

------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |    1815    .4986226    .0117395    .5001359    .4755982     .521647
       1 |    1075    .5265116    .0152355     .499529    .4966169    .5564063
---------+--------------------------------------------------------------------
combined |    2890    .5089965    .0093009    .5000056    .4907594    .5272336
---------+--------------------------------------------------------------------
    diff |            -.027889    .0192397                -.065614    .0098359
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -1.4496
Ho: diff = 0                                     degrees of freedom =     2888
    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0736         Pr(|T| > |t|) = 0.1473          Pr(T > t) = 0.9264


ttest sale, by (marketer_gender1)

Two-sample t test with equal variances

------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |    1821    .4772103     .011708    .4996176    .4542478    .5001729
       1 |    1079    .4828545    .0152197    .4999377     .452991     .512718
---------+--------------------------------------------------------------------
combined |    2900    .4793103    .0092784    .4996579    .4611174    .4975033
---------+--------------------------------------------------------------------
    diff |           -.0056442    .0191988               -.0432889    .0320005
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -0.2940
Ho: diff = 0                                     degrees of freedom =     2898
    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.3844         Pr(|T| > |t|) = 0.7688          Pr(T > t) = 0.6156
```

```
ttest ngo, by (marketer_gender1)

Two-sample t test with equal variances

------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |    1821     .523888    .0117068    .4995662    .5009278    .5468481
       1 |    1079    .5041705    .0152281    .5002145    .4742905    .5340506
---------+--------------------------------------------------------------------
combined |    2900    .5165517    .0092813    .4998121    .4983532    .5347503
---------+--------------------------------------------------------------------
    diff |            .0197174    .0192015               -.0179326    .0573675
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =   1.0269
Ho: diff = 0                                     degrees of freedom =     2898

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.8477         Pr(|T| > |t|) = 0.3046          Pr(T > t) = 0.1523



ttest sale, by (customer_gender1)

Two-sample t test with equal variances

------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |    1419    .4792107    .0132665    .4997437    .4531866    .5052348
       1 |    1471    .4792658    .0130298    .4997398    .4537068    .5048248
---------+--------------------------------------------------------------------
combined |    2890    .4792388    .0092944    .4996552    .4610144    .4974631
---------+--------------------------------------------------------------------
    diff |           -.0000551     .018595               -.036516    .0364058
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -0.0030
Ho: diff = 0                                     degrees of freedom =     2888

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.4988         Pr(|T| > |t|) = 0.9976          Pr(T > t) = 0.5012
```

```
ttest ngo, by (customer_gender1)

Two-sample t test with equal variances

------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |    1419    .5369979    .0132416    .4988051    .5110227    .5629731
       1 |    1471    .4949014    .0130403     .500144    .4693218    .5204811
---------+--------------------------------------------------------------------
combined |    2890    .5155709    .0092979     .499844    .4973397    .5338021
---------+--------------------------------------------------------------------
    diff |            .0420965    .0185856                .0056542    .0785388
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =   2.2650
Ho: diff = 0                                     degrees of freedom =     2888
    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.9882         Pr(|T| > |t|) = 0.0236          Pr(T > t) = 0.0118


ttest customer_gender2, by (marketer_gender2)

Two-sample t test with equal variances

------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |    1631    .5426119    .0123394    .4983337    .5184092    .5668146
       1 |    1280    .5460938    .0139214    .4980654    .5187826    .5734049
---------+--------------------------------------------------------------------
combined |    2911    .5441429    .0092326    .4981332    .5260398     .562246
---------+--------------------------------------------------------------------
    diff |           -.0034819     .018604               -.0399602    .0329965
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -0.1872
Ho: diff = 0                                     degrees of freedom =     2909
    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.4258         Pr(|T| > |t|) = 0.8516          Pr(T > t) = 0.5742
```

```
ttest sale, by (marketer_gender2)

Two-sample t test with equal variances

------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |    1631    .4763948    .0123706    .4995957    .4521309    .5006588
       1 |    1280    .4820313    .0139719    .4998723     .454621    .5094415
---------+--------------------------------------------------------------------
combined |    2911    .4788732    .0092605    .4996393    .4607154    .4970311
---------+--------------------------------------------------------------------
    diff |           -.0056364    .0186601               -.0422247    .0309519
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -0.3021
Ho: diff = 0                                     degrees of freedom =     2909
    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.3813         Pr(|T| > |t|) = 0.7626          Pr(T > t) = 0.6187



ttest ngo, by (marketer_gender2)

Two-sample t test with equal variances

------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |    1631    .5156346    .0123784    .4999088    .4913554    .5399138
       1 |    1280    .5171875    .0139726    .4998998    .4897757    .5445993
---------+--------------------------------------------------------------------
combined |    2911    .5163174    .0092639    .4998195     .498153    .5344818
---------+--------------------------------------------------------------------
    diff |           -.0015529    .0186671               -.038155    .0350491
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -0.0832
Ho: diff = 0                                     degrees of freedom =     2909
    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.4669         Pr(|T| > |t|) = 0.9337          Pr(T > t) = 0.5331
```

```
ttest found, by (marketer_gender2)

Two-sample t test with equal variances

------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |    1631    .9944819    .0018348    .0741013     .990883    .9980808
       1 |    1280     .990625    .0026947    .0964073    .9853385    .9959115
---------+--------------------------------------------------------------------
combined |    2911     .992786    .0015688     .084643    .9897099    .9958621
---------+--------------------------------------------------------------------
    diff |            .0038569    .0031604                -.00234    .0100538
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =   1.2204
Ho: diff = 0                                     degrees of freedom =     2909

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.8888         Pr(|T| > |t|) = 0.2224          Pr(T > t) = 0.1112



ttest sale, by (customer_gender2)

Two-sample t test with equal variances

------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |    1327    .4792766    .0137191    .4997587    .4523631      .50619
       1 |    1584    .4785354    .0125554    .4996968    .4539085    .5031622
---------+--------------------------------------------------------------------
combined |    2911    .4788732    .0092605    .4996393    .4607154    .4970311
---------+--------------------------------------------------------------------
    diff |            .0007412    .0185968               -.0357231    .0372055
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =   0.0399
Ho: diff = 0                                     degrees of freedom =     2909

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.5159         Pr(|T| > |t|) = 0.9682          Pr(T > t) = 0.4841
```

```
ttest ngo, by (customer_gender2)

Two-sample t test with equal variances

------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |    1327    .5275057    .0137101    .4994311    .5006098    .5544015
       1 |    1584    .5069444    .0125657    .5001097    .4822972    .5315917
---------+--------------------------------------------------------------------
combined |    2911    .5163174    .0092639    .4998195     .498153    .5344818
---------+--------------------------------------------------------------------
    diff |            .0205612    .0185996               -.0159086     .057031
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =   1.1055
Ho: diff = 0                                     degrees of freedom =     2909

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.8655         Pr(|T| > |t|) = 0.2691          Pr(T > t) = 0.1345



ttest found, by (customer_gender2)

Two-sample t test with equal variances

------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |    1327     .990957    .0025996    .0946992    .9858572    .9960569
       1 |    1584    .9943182    .0018891    .0751871    .9906127    .9980237
---------+--------------------------------------------------------------------
combined |    2911     .992786    .0015688     .084643    .9897099    .9958621
---------+--------------------------------------------------------------------
    diff |           -.0033611    .0031498               -.0095373     .002815
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -1.0671
Ho: diff = 0                                     degrees of freedom =     2909

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.1430         Pr(|T| > |t|) = 0.2860          Pr(T > t) = 0.8570
```

Appendix C: Regression tables

Table 1. Customer gender - uptake results

	sale_purchased2					sale_quantity2 (log)				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
	All	**Panadol**	**Elyzole**	**Zinkid**	**Aquasafe**	**All**	**Panadol**	**Elyzole**	**Zinkid**	**Aquasafe**
customer_gender2	0.013	-0.001	0.106***	0.021	-0.086**	-0.070***	-0.063	-0.046	0.001	-0.088**
	[0.485]	[0.972]	[0.002]	[0.544]	[0.036]	[0.003]	[0.131]	[0.311]	[0.975]	[0.012]
quantity_received	0.082***	0.017	0.085***	0.056	0.067***	0.088***	0.101***	0.060*	0.088*	0.026
	[0.000]	[0.225]	[0.001]	[0.230]	[0.006]	[0.000]	[0.000]	[0.070]	[0.067]	[0.337]
respondentfound2	0.055**	0.042	0.097**	0.042	0.063	0.052*	0.043	0.089**	-0.005	0.057
	[0.034]	[0.317]	[0.033]	[0.325]	[0.186]	[0.086]	[0.456]	[0.042]	[0.926]	[0.182]
ngo	0.014	0.043	0.017	-0.016	0.008	-0.007	0	0.004	0.038	-0.054
	[0.526]	[0.121]	[0.699]	[0.659]	[0.854]	[0.805]	[0.997]	[0.920]	[0.299]	[0.233]
sale	0.059***	0.075**	0.121***	0.080*	0.014	-0.027	-0.05	0.016	0.009	0.002
	[0.009]	[0.014]	[0.006]	[0.076]	[0.759]	[0.321]	[0.304]	[0.708]	[0.869]	[0.963]
product2	-0.108***					-0.111***				
	[0.000]					[0.000]				
Constant	0.605***	0.710***	0.131**	0.116	0.424***	0.452***	0.383***	0.055	-0.012	0.156**
	[0.000]	[0.000]	[0.036]	[0.101]	[0.000]	[0.000]	[0.000]	[0.426]	[0.876]	[0.033]
Observations	2901	807	741	654	699	1480	665	309	153	353
R-squared	0.094	0.019	0.039	0.008	0.022	0.132	0.042	0.031	0.054	0.031

Robust p values in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 2. Marketer gender - uptake results

	sale_purchased2						sale_quantity2 (log)	
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
	All	**All**	**Panadol**	**Elyzole**	**Zinkid**	**Aquasafe**	**All**	**All**
marketer_gender2	0.080***	0.080***	0.057**	0.077**	0.091***	0.115***	-0.015	-0.016
	[0.000]	[0.000]	[0.037]	[0.038]	[0.009]	[0.004]	[0.514]	[0.485]
customer_gender2		-0.003	0	0.099***	0.022	-0.082**		-0.070***
		[0.903]	[0.989]	[0.003]	[0.521]	[0.041]		[0.003]
quantity_received	0.084***	0.086***	0.018	0.087***	0.06	0.066***	0.088***	0.087***
	[0.000]	[0.000]	[0.185]	[0.001]	[0.199]	[0.007]	[0.000]	[0.000]
respondentfound2	0.049**	0.044	0.041	0.089**	0.037	0.066	0.066**	0.052*
	[0.047]	[0.122]	[0.318]	[0.049]	[0.389]	[0.167]	[0.025]	[0.086]
ngo	0.014	0.015	0.044	0.015	-0.017	0.006	-0.006	-0.007
	[0.543]	[0.504]	[0.111]	[0.731]	[0.650]	[0.884]	[0.836]	[0.800]
sale	0.059***	0.061***	0.076**	0.121***	0.080*	0.012	-0.028	-0.026
	[0.009]	[0.007]	[0.013]	[0.005]	[0.072]	[0.794]	[0.301]	[0.328]
product2	-0.108***	-0.106***					-0.109***	-0.111***
	[0.000]	[0.000]					[0.000]	[0.000]
Constant	0.579***	0.563***	0.683***	0.106*	0.077	0.375***	0.405***	0.460***
	[0.000]	[0.000]	[0.000]	[0.094]	[0.295]	[0.000]	[0.000]	[0.000]
Observations	2901	2889	807	741	654	699	1480	1480
R-squared	0.101	0.101	0.024	0.045	0.02	0.035	0.127	0.132

Robust p values in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 3. Interaction - uptake results

	sale_purchased2				sale_quantity2 (log)		
	1	**2**	**3**	**4**	**5**	**6**	**7**
	All	**Aquasafe**	**Men**	**Women**	**All**	**Men**	**Women**
interact2	-0.049	-0.146*			-0.006		
(customer_gender2	[0.173]	[0.054]			[0.897]		
marketer_gender2)							
marketer_gender2	0.106***	0.193***	0.107***	0.056**	-0.013	-0.014	-0.019
	[0.000]	[0.001]	[0.000]	[0.019]	[0.700]	[0.686]	[0.523]
customer_gender2	0.034	-0.021			-0.067**		
	[0.160]	[0.667]			[0.035]		
quantity_received	0.084***	0.067***	0.078***	0.089***	0.087***	0.099***	0.077***
	[0.000]	[0.005]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
respondentfound2	0.052**	0.067	-0.003	0.074***	0.051	0.059	0.051
	[0.032]	[0.185]	[0.948]	[0.009]	[0.114]	[0.338]	[0.179]
ngo	0.014	0.007	0.006	0.023	-0.007	-0.023	0.008
	[0.421]	[0.854]	[0.819]	[0.340]	[0.765]	[0.507]	[0.803]
sale	0.060***	0.011	0.031	0.081***	-0.026	0.002	-0.050*
	[0.001]	[0.777]	[0.249]	[0.001]	[0.252]	[0.964]	[0.099]
product2	-0.108***		-0.091***	-0.122***	-0.111***	-0.105***	-0.115***
	[0.000]		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Constant	0.558***	0.340***	0.590***	0.589***	0.459***	0.423***	0.418***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	2901	699	1323	1578	1480	668	812
R-squared	0.101	0.04	0.08	0.124	0.132	0.135	0.126

Robust p values in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4. Usage results

	proportional_usage										
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
	All	**All**	**All**	**All**	**Zinkid**	**Panadol**	**Zinkid**	**Male customer**	**Female customer**	**Male marketer**	**Female marketer**
customer_gender1	0.028		0.023	-0.049	0.032	-0.078	-0.137			-0.053	0.129**
	[0.453]		[0.535]	[0.314]	[0.775]	[0.110]	[0.330]			[0.280]	[0.023]
marketer_gender1		0.036	0.033	-0.059	0.243**	-0.168***	0.016	-0.06	0.118**		
		[0.336]	[0.388]	[0.278]	[0.033]	[0.002]	[0.921]	[0.304]	[0.017]		
interact1 *(customer_gender1* marketer_gender1)*				0.175**		0.220***	0.431*				
				[0.021]		[0.004]	[0.061]				
ngo	0.016	0.015	0.017	0.011	0.036	0.026	0.01	0.007	0.015	-0.017	0.038
	[0.673]	[0.691]	[0.655]	[0.767]	[0.749]	[0.474]	[0.926]	[0.906]	[0.764]	[0.720]	[0.499]
sale	-0.021	-0.02	-0.019	-0.015	0.019	-0.03	0.067	-0.027	-0.002	-0.019	-0.013
	[0.580]	[0.588]	[0.604]	[0.682]	[0.866]	[0.420]	[0.547]	[0.623]	[0.969]	[0.689]	[0.817]
product1	-0.185***	-0.184***	-0.184***	-0.183***				-0.201***	-0.165***	-0.244***	-0.100***
	[0.000]	[0.000]	[0.000]	[0.000]				[0.000]	[0.000]	[0.000]	[0.005]
Constant	1.164***	1.162***	1.150***	1.181***	0.363***	0.968***	0.430***	1.223***	1.089***	1.316***	0.951***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.004]	[0.000]	[0.001]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	252	252	252	252	67	99	67	126	126	148	104
R-squared	0.205	0.207	0.208	0.225	0.078	0.117	0.13	0.222	0.23	0.32	0.125

p values in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5. Aquasafe only results

	sale_quantity2 (log)	sale_purchased2			
	1	**2**	**3**	**4**	**5**
customer_gender2	-0.088**	-0.086**		-0.082**	-0.021
	[0.012]	[0.036]		[0.041]	[0.667]
marketer_gender2			0.117***	0.115***	0.193***
			[0.004]	[0.004]	[0.001]
interact2					-0.146*
					[0.054]
quantity_received	0.026	0.067***	0.068***	0.066***	0.067***
	[0.337]	[0.006]	[0.006]	[0.007]	[0.005]
respondentfound2	0.057	0.063	0.078*	0.066	0.067
	[0.182]	[0.186]	[0.098]	[0.167]	[0.185]
ngo	-0.054	0.008	0.007	0.006	0.007
	[0.233]	[0.854]	[0.869]	[0.884]	[0.854]
sale	0.002	0.014	0.012	0.012	0.011
	[0.963]	[0.759]	[0.774]	[0.794]	[0.777]
Constant	0.156**	0.424***	0.317***	0.375***	0.340***
	[0.033]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	353	699	699	699	699
R-squared	0.031	0.022	0.028	0.035	0.04

Robust p values in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

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