
# *Decision making and tensions between gender and market approaches to rural development policy*

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## Abstract

Economists typically model choices as the result of individual preferences (what one *wants* to do) and constraints (what one *can* do). The dominant strategy for addressing gender inequalities in development assistance has been to focus on reducing the gender-based gap in the constraints individuals face. Implicitly this approach assumes that preferences are roughly similar across gender. But recent research from labor and gender economics suggests that women and men, on average, often differ in their preferences. While women and men may have a similar set of goals such as economic security, good health, educational opportunities etc., when faced with tradeoffs, the priorities they assign to these goals may differ.

Our research specifically examines whether male/female preference differences exist in attributes relevant to market participation: attitudes toward risk, willingness to compete, and sensitivity to inequality and relative position. Our focus stems from the current emphasis on market-led approaches to poverty alleviation and growth and strategies to make "markets work for the poor." If men and women exhibit systematic differences in these preference parameters, there may be a tension between the goals of increasing women's participation in economic decision-making and promoting market access for rural development,

Preliminary results using original data from 1165 individuals in 637 households in rural Vietnam suggest stark differences between men and women, and that these differences are most pronounced in lower income households. We find that women in households classified as below or at average commune levels are significantly more risk averse over gains than are men, though not in gambles to avoid losses. Our experimental evidence finds that men over estimate their odds of success in competitive tasks, and that women underestimate theirs. Among those likely to win, women were significantly less likely to choose to compete than men. Among those likely to lose, men were markedly more likely to choose to compete: 38% vs. 28% among the poorest, 46% vs. 34% in the average group, and 37% vs. 25% among the better off.

Across all income categories, men were noticeably more likely to report being very confident both when making decisions and when negotiating. And finally, a greater proportion of women than men prefer to earn investment income above the commune average. Men, however, are more willing to accept a lower absolute income to maintain a higher relative position.

Whether these gender-based differences are innate or socially derived, their presence signals a need for caution in "mainstreaming" women into market and other institutions which have largely evolved in line with male preferences. Significant attitudinal differences support more ex-ante tailored market interventions for women rather than attempting to ex-post attract women to programs designed according to male preferences.

## 1. Introduction

For more than twenty years scholars and international aid experts have tried to identify and ameliorate the hardships experienced by women in poverty across the globe. Yet by most measures, the plight of many women and girls remains bleak. Hope now rests with an approach that recognizes individual gender dimensions broader than the biological and social characteristics that include the formal and informal institutional environments in which men and women relate.

At the same time that gender analysis has been gaining traction, rural development policy has been stressing market-led approaches to poverty alleviation and growth. Evaluations of development spending suggest that macro reforms and government funding, in isolation, can at best provide temporary relief and that local market based initiatives are necessary for sustainable growth. The shift from state-led to market-led development has evolved to emphasize incentives for entrepreneurs and small enterprise, and strategies to make "markets work for the poor."

Our research examines whether there is an inherent tension between the two goals of increasing women's participation in economic decision-making, and promoting market access for rural development. We use original data from rural Vietnam to explore whether there are systematic differences in men's and women's behavioral attributes such as attitude toward risk, reaction to competition, and how much they care about their relative position in their communities, and discuss how these attitudes may affect their decision to participate in the market.

## 2. Behavioral economics and gender studies of decision making

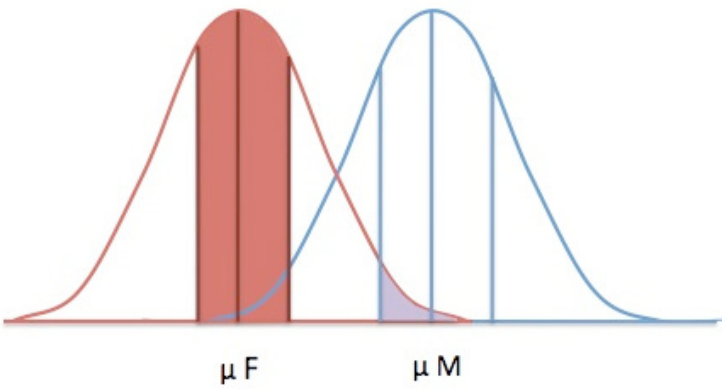
Economists typically model choices as the result of individual preferences (what one *wants* to do) and constraints (what one *can* do). The dominant strategy for addressing gender inequalities in development assistance has been to focus on reducing the gender-based gap in the constraints individuals face. Implicitly this approach assumes that preferences are roughly similar across gender, and it has the advantage of focusing on observable differences that are less subject to distortion. But recent research suggests this approach may be limited. In particular, there is evidence from behavioral economics suggesting that people make choices that often depart from those predicted by traditional economic models based on stable and consistent preferences[1]. Additionally, evidence from labor and gender economics suggests women and men, on average, often differ in their preferences. While women and men may have a similar set of goals such as economic security, good health, educational opportunities etc., when faced with tradeoffs, the priorities they assign to these goals may differ.

Corroborating laboratory experiments in the U.S. and Europe suggest that gender differences in decision making across financial, health, and labor market realms arise in three areas: risk attitudes, reaction to competition (which may be driven by confidence, self-efficacy or attitudes toward risk) and social preferences (views of fairness and equality)[2].

Individuals are not uniform: for any given attitudinal category they can be situated on different points along a continuum. Our aim is to identify whether the distribution of any of these attributes differs systematically by gender. That is, we want to explore whether women as a group are, on average, more or less risk averse than men; more or less concerned with their position in society; or more or less willing to compete, and whether these differences translate into different choices in response to market based incentives and institutions.

Figure 1 plots a hypothetical distribution for women on the left, and men on the right, of some attitude, such as the attitude towards competition. If indeed our data reveal that men and women exhibit different distributions along a particular attitudinal continuum, then only women at one tail of the distribution (colored in blue) - women whose preferences resemble the preferences of the average man given by μM- are likely to be reached by programs that are based on an understanding of, or experience with, average male attitudes. Programs that ignore gender-based differences could miss a large segment of the female population of interest (the women whose attitudes fall around the female average μF, colored in orange).

**Figure 1**




In their recent survey of studies and experiments addressing differences in preferences, (Croson and Gneezy, 2004) conclude that, on average, women are more risk averse than men. They offer two caveats. One is that that risk attitudes vary less among professional men and women than in the population as a whole (these are the women that we suggest are in the right-hand tail of the distribution in Figure 1). The other caveat is that men and women react differently to the framing of risk, in particular, whether the gamble represents a loss or a gain. Gender-based differences in risk aversion are greater and more consistent over gains than over losses. From other reviews, we also know that differences in risk aversion vary across domains, greater in response to intellectual and physical risks and less in response to some health and social risks (Byrnes, Miller and Schafer, 1995; Weber, Blais and Betz, 2002). One explanation for these differences in the populations studied, largely U.S. and European, is that men tend to view risky situations as a challenge while women tend to view them as a threat (Arch, 1993). That is, it may not be risk attitudes that differ as much as risk perceptions.

Differences between men's and women's attitudes towards competition have been measured in the laboratory and the field. The emerging view is that women who choose competitive environments perform similarly to men, but that women, on average, are less likely to choose those environments (Croson and Gneezy, 2004). Their attitudes toward bargaining and negotiating exhibit a similar pattern. Women are far less likely to choose to engage in negotiations, far less likely to state that they are entitled to more money (compared to stating that they should be paid equivalently to others doing equal work) and far less likely to feel that it is up to them to make sure they get what they are worth (Baron, 2003).

Studies on social preferences include measures of altruism, reciprocity, envy, and inequality aversion. Review of relevant experiments tends to conclude that women are more generous than men with people they know, but men are more generous than women with strangers. More generally, (Croson and Gneezy, 2004, p.38) conclude that women's "other-regarding" preferences are more context-dependent, perhaps following on the generally held notion that women are more sensitive to social cues.

These preference parameters may be especially relevant to how individuals respond to market opportunities. Markets are an inherently competitive, rather than cooperative, process. A market, as opposed to government, allocation of resources, is believed to increase absolute wealth for some but at a cost of increased income inequality. Whether these gender-based differences are innate or socially derived, their presence would signal a need for caution in "mainstreaming" women into market and other institutions which have largely evolved in line with male preferences. Significant attitudinal differences may support more ex-ante tailored market interventions for women, aiming for μF, rather than attempting to ex-post target women to a program design centered on μM.

## 3. Why development interventions should pay attention to behavioral attitudes

To illustrate the importance of considering behavioral attitudes when designing development interventions we focus on one example. The International Fund for Agricultural Development (IFAD) has an ambitious multi-year program for Improving Market Participation for the Poor (IMPP) in Vietnam. The program's goal, in line with the broader objectives of the Vietnamese government, is to promote and develop a market based economy in the poorest regions of the country, and to facilitate the participation of the rural poor in those markets. The design of the IMPP offers an opportunity to consider the importance of attitudinal factors within the target population. Our working hypothesis is that the low participation rates reported from the field are related to poorly understood risk perceptions around livelihood changes that imply increased market engagement.

A risk is a probability of harm or loss (the risk of a drought) or the probability of a gain[3]. Risks exist wherever there is uncertainty or variability about an outcome[4]. There are objectively measured and modeled risks, statistically or less precisely assessed, that are generally considered to be free from personal or emotional considerations. And there are perceived risks, which are subjective judgments from the perspective of the individual facing the risky outcome.

Individuals make decisions based on their perceived (subjective) risk of the various outcomes. Risk perceptions are influenced by statistical risk, and attitudes toward risk, which are the individual's innate or conditioned preference for risk taking[1]. Evidence from experiments largely in the U.S. and Europe suggests that reference levels – one's position prior to making a choice - are fundamentally important to behaviour under risk: in general, individuals are loss averse (losses hurt more than commiserate gains help) and more risk seeking over losses than gains (they are willing to take larger gambles to avoid losses than to acquire potential gains).

International development organizations routinely consider risk. In a review of IFAD's strategic plans for ten Asia Pacific countries, we found the term "risk" generally used in one of two ways: risks faced by the poor that motivate an intervention (call these livelihood risks), and risks related to program or project failure (call these program risks). Livelihood risks include exchange risks (price fluctuations or economic shocks), health and socio-political risks (war, insurgency, HIV/AIDS, avian flu), or weather and climate related (drought, climate change, natural disasters). For example, IFAD's strategic plan for Vietnam (2008, 7) details the major uncertainties facing the rural poor, and their outcomes, as "seasonal, idiosyncratic and structural shocks (death, disease, epidemics, sudden changes in market prices, natural disasters), and climatic variability."

Program risks generally arise from weak or limited institutional capacity of the government or program partners, or political instability that threatens to shift program priorities. The bulk of references to the term "risk" found in IFAD's Asia Pacific strategic plans fall into this program failure category.

In contrast to the attention given to the livelihood risks faced by the target populations from not participating, none of the strategic plans or logical frameworks we examined identified any risks, real or perceived, to participating.

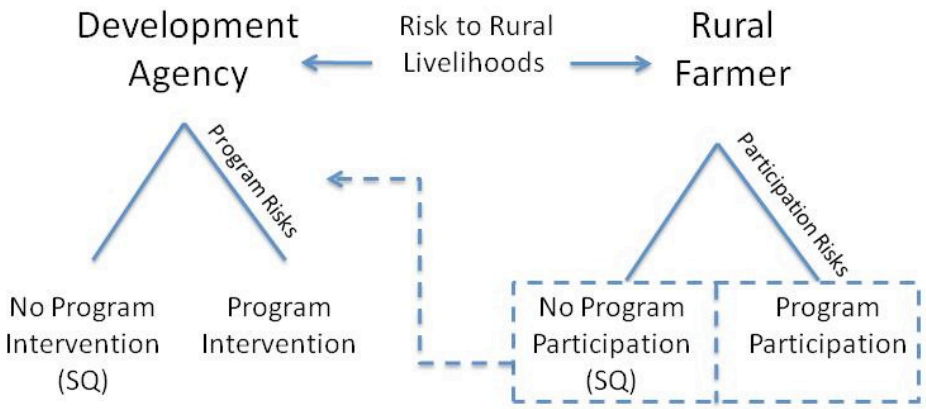
Figure 2 depicts decision trees for two decision-makers: a development organization considering an intervention, and the individuals for whom the intervention has been designed. The development agency has to decide whether or not to implement the program. The intended beneficiary, in turn, has to decide whether or not to participate in the program and take-up an opportunity afforded by the intervention. The outcomes for the agency will be an intervention or the status quo (SQ), and for the farmer, participation or the status quo (SQ).

Three types of risks are present in this scenario. First, there are rural livelihood risks that can affect both the rural farmers' and development agencies' decisions. The livelihood risks faced by the target populations often motivate the intervention; these are the risks rural farmers face if they choose not to participate. Programs designed to address these risks try to alter the probabilities of these risks occurring (e.g. spread of a disease), or to mitigate the costs and consequences of risky outcomes (e.g. resilience to a drought).

[1] Ben-Akiva et.al (1999, p.188) make the distinction between risk attitudes ("stable psychological entities to evaluate particular entities") and preferences ("comparative judgments between entities"). For simplicity, we are using the terms attitudes and preferences somewhat interchangeably here.

Second, there are program risks faced by the development agency. These are risks of programmatic and implementation failures. For a program to be successful, two conditions are necessary: the intended recipients must participate, change their behaviors, or in some form "take-up" opportunities presented by the intervention, and the outcome of that participation must improve their livelihood.

**Figure 2: Decision Tree**




There is, however, a third set of risks seldom, if ever, mentioned in strategic plans. These are risks that affect whether or not farmers will decide to participate in the opportunities presented by the intervention (call these "take-up" or participation risks). When an individual chooses to participate in a program they are choosing to trade off status quo livelihood risks in favor of participation risks. Implicitly, strategic plans assume that rural farmer's livelihood risks from the status quo are the only set of risks affecting their decision to participate. If this is not the case, ignoring take-up risks can lead to lower participation rates and can hamper the program's ability to reach its intended target population. As a result, take-up risk can affect program risks. To improve the likelihood that the poor, women, or any targeted group participates, the program design and implementation must also take into account that group's perceptions of the take-up risk.

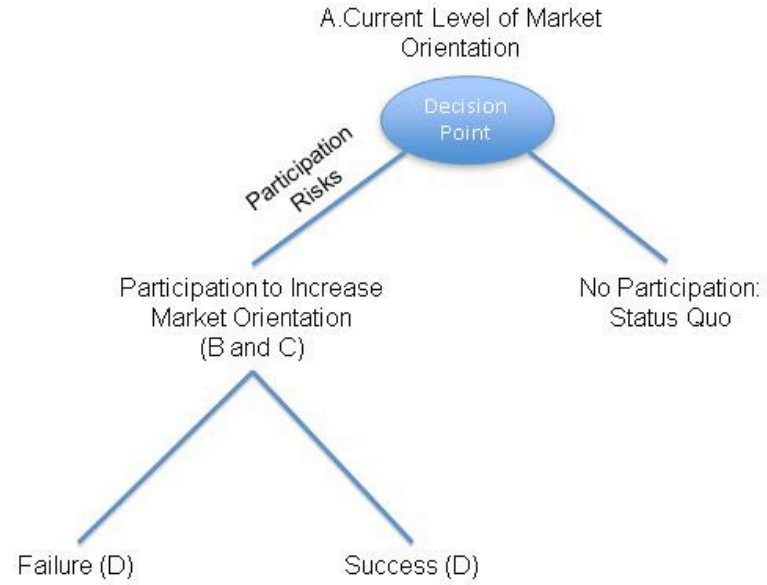
### *The Risks of Increasing Market Orientation*

For interventions that seek to "make markets work for the poor" take-up risks include the risks of increasing one's market orientation (MO). Increased price variability is generally the only acknowledged risk in the "markets for the poor" literature; other risks of directing livelihoods toward different types of exchange appear to be largely ignored. But increasing market orientation from a more autarkic livelihood, or from more informal exchange relationships, involves confronting the incentives that define well-functioning, more formal, markets. Well-functioning markets are generally characterized by buyers and sellers that specialize, reach scale,

and with reasonable comfort exchange anonymously with each other (with well defined and protected property rights offering formal institutional protection for the valuable rights exchanged). There are legally recognized regulations and fees that support property rights. Voluntary exchange produces gains for buyers and sellers that are split according to information and bargaining/negotiating power and skill.

Figure 3 expands the rural farmer's decision tree from Figure 2, with a rural household or individual deciding whether or not to participate in a program opportunity that is designed to increase their market orientation (e.g. job skills, training, credit, market training). In deciding whether or not to participate, farmers weigh the livelihood risk of the status quo against the production, exchange, and social risks of increasing their market orientation plus any remaining livelihood risk. Farmers' perceptions of the risks associated with increasing their market orientation can be shaped by the type of exchange activity considered and a number of individual and household attributes. In particular, it is possible for male and female farmers to systematically differ in their attitudes toward risk, competition and relative position—factors that can shape their perceptions of the risk associated with increasing their market orientation and therefore their decisions to participate. The analysis that follows addresses this possibility.

**Figure 3: Perceived Risks of Market Orientation**




**Decision maker Characteristics**

*A) Targeted Individuals and Households*

- Gender
- Income
- Risk Attitudes
- Reaction to competition
- Relative position

**Perceived market participation risks**

| *B) Production Risks* | *C) Exchange Risks* | *D) Social Risks* |
|---|---|---|
| • Reduced food security<br>• Specialization<br>• Increase scale or diversification<br>• Making good decisions | • Poor negotiating and share of gains from trade<br>• Competing and losing | • Change in relative village or commune position due to success or failure |

## 4. Methods and Results

### *Sample*

Laboratory experiments have been useful for identifying individual characteristics that can influence how people make decisions in ways not considered by traditional economics. Because these experiments have often been carried out with populations that are homogeneous, have higher income, and operate in settings that are very different from rural areas of developing countries, However, their findings need not be relevant for the resource poor and food insecure populations of interest to development agencies. In light of this, a team of researchers from the

University of Washington and the Institute for Family and Gender Studies in Hanoi partnered with IFAD to carefully explore patterns in farmer attitudes among the intended recipients of the IMPP program.

The analysis that follows is based on data we collected from 1165 individuals in 637 households from three communes of Ha Tinh province, Vietnam, in March of 2008. Male and female heads of households were interviewed separately. Of the 1165 individuals interviewed, 513 were male and 652 were female. 1056 come from households where both the husband and wife reside, which we refer to as couple households, and the remainder of observations are from single female-headed households. Of the single-headed households, 39 are widowed or divorced, and in 70 cases the husband has migrated for work. The annual household income averages 23.7 million VND or 1,474 USD[5]. Appendix 1 provides additional descriptive statistics of the full sample.

Since addressing poverty underlies most IMPP program objectives, we used several measures of income and wealth levels, and two of income variability, in our survey. Mean annual household income, as given by the respondent's estimate of their total annual income, is the equivalent of U.S. $1,474. Median income is slightly lower at $1,212. This measure is reported separately by the male and female household head, providing us one measure of reliability. Commune leaders keep track of household wealth for tax and other purposes, and their assessments of relative wealth produce a distribution: 31% or 357 individuals are classified below average, 59% or 681 individuals are classified as average, and 11% or 127 individuals are classified as above average. Total reported income and assessed relative wealth are significantly (linearly) correlated. Food insecurity is pervasive; over half of even the wealthiest village members report being unable to afford the healthy food they need for their families and more than 4/5's of those with below average wealth report this type of food insecurity.

Two measures of income variability were also collected in our sample: whether 2007 income was lower, the same, or higher than 2006, and how much annual income has varied over the last two years. Economic security and a recent annual increase in income were positively and significantly correlated. Studies suggest that relative position is an important component of well-being write of the importance of reference levels – both one's position relative to others, and also one's position over time, and that losses figure more prominently in decision making than commiserate gains. We found support for this in our sample, with an individual's level of economic security varying with recent wealth changes, despite their absolute wealth levels. Across all wealth levels – below, at, and above average commune wealth – of those with lower incomes in 2007 than 2006, a larger majority report feeling economically insecure, than within the group as a whole. For example, within the above average group, there is an almost even split overall between those reporting feeling economically secure, and those reporting that they do not. Within the cohort whose income fell in the previous year, however, two thirds of these relatively well off individuals felt insecure. In the "at average" group the percent of insecure rises from 57% to 72% among those experiencing income reductions, and in the "below average" group the proportion rises from 76% to 83%. "A lot" of income variability also appears to contribute to insecurity, but much more so for below average wealth and at average wealth households.

For the remainder of our analysis, we mostly use assessed income to divide our sample, as it offers a reasonable measure of relative and absolute income. We disaggregate our gender-specific results for three wealth levels: households below the commune average, around the commune average, or above the commune average. Our sample distribution is as follows:

**Table 1: Number of Respondents per Income and Gender**

| | | Male | Female | Total |
|---|---|---|---|---|
| HH Wealth Compared to Commune Avg. | Below | 151 | 206 | 357 |
| | Average | 302 | 379 | 681 |
| | Above | 60 | 67 | 127 |

***Survey Questions Used to Elicit Behavioral Attributes***

Each survey respondent was asked a battery of questions designed to elicit proxies for behavioral attributes that can influence their risk perceptions and, as argued, their willingness to increase their engagement in market oriented activities. Our survey questions addressed risk attitudes, attitudes toward competition and negotiation, and sensitivity to relative position.

**4a. Attitudes toward Risk**

Interviewees were asked to choose between two hypothetical scenarios. To make sure the comparison was clear the options were written on cards:

| **Option 1:** | **Option 2:** |
|---|---|
| You RECEIVE VND 10,000 for sure | You will toss a coin and<br>If heads: you don't receive anything<br>If tails: you win VND 20,000 |

Since both options yield the same expected value of VND 10,000, we classified respondents who chose Option 1 as more risk averse than those who chose Option 2. Experiments suggest that and individual's willingness to take a risk, or in this case choose a gamble over a sure outcome, can differ if the outcomes involve losses instead of gains. To capture this possibility, we also asked respondents to choose between:

| **Option 1:** | **Option 2:** |
|---|---|
| You LOSE VND 10,000 for sure | You will toss a coin and<br>If heads: you win VND 20,000<br>If tails: you lose VND 40,000 |

We classified those who chose Option 1 in this second round as more risk averse over losses than those who chose Option 2.

As Table 2 indicates, women are more risk averse than men in every income group: 57% vs. 46% among the poorest, 54% vs. 45% among those with average incomes and 61% vs. 53% among the better off. These gender-based differences in risk aversion are statistically significant, across gender and risk aversion,[6] for the poorest and average groups.

**Table 2: Percentage of Individuals who are Risk Averse over Gains**

| | | Male (%) | Female (%) | Total (%) |
|---|---|---|---|---|
| HH Wealth Compared to Commune Avg. | Below* | 46 | 57 | 52 |
| | Average** | 45 | 54 | 50 |
| | Above | 53 | 61 | 58 |

Findings are significant at *10%, ** 5%, *** 1%
$\chi^2 = 3.80$ (Below), $\chi^2 = 5.12$ (Average)

The pattern varies when we assess risk aversion over losses. For this case, women in the average income category are also significantly more risk averse than men (58% of females expressing risk aversion vs. 47% of males). There is a difference of 7% within the above average group, but it is not statistically significant different. Because this income group is the smallest of the three at 11%, significance measures are more difficult. The smaller differences between men and women over losses than over gains is consistent with findings in other countries and across other experiments that is summarized in Croson and Gneezy (2004). That is, across many experiments, men appear to be consistently more inclined to gamble than women when the outcome is a possible gain. This remains true when the outcome is a possible loss, but the difference narrows.

**Table 3: Percentage of Individuals who are Risk Averse over Losses**

| | | Male (%) | Female (%) | Total (%) |
|---|---|---|---|---|
| HH Wealth Compared to Commune Avg. | Below | 55 | 54 | 55 |
| | Average*** | 47 | 58 | 53 |
| | Above | 53 | 60 | 57 |

Findings are significant at *10%, ** 5%, *** 1%
$\chi^2 = 7.73$ (Average)

### 4b. Attitudes toward Competition

Our experimental design for this series of questions is based on work done by Niederle and Vesterlund (2007) and earlier by Gneezy, Niederle and Rustichini (2003). The goal of this exercise is to assess whether or not men and women systematically choose different remuneration incentives, taking into account their likelihood of success with the more competitive incentive. We first assess individuals' recall ability, make sure they are aware of the results, and then evaluate their willingness to compete. To accommodate our experimental setting to market applications in rural Vietnam, we replaced the computer mazes, running races, and complicated addition problems used by others with a digit recall exercise suggested by Djankov et al. (2005).

To assess their recall ability we asked each respondent to repeat a series of digits of varying lengths. After a practice session respondents engaged in "a game" where the interviewer told them, for example, "I will say six numbers for you, and you, please, repeat them exactly in the same order." The first series was 6-1-4-9-2-7. The second series had nine digits and the third series was five digits they were asked to repeat in reverse order.

We assigned respondents a score between 0 and 3 depending on how many of the first three digit-recall series they were able to repeat correctly. Our results indicate that men and women performed approximately equally well in terms of ability to recall number sequences, with no statistically significant difference by gender in any of the three income categories.

**Table 4: Average Recall Ability**

| | | Male | Female | Total |
|---|---|---|---|---|
| HH Wealth Compared to Commune Avg. | Below | 1.32 | 1.31 | 1.31 |
| | Average | 1.37 | 1.42 | 1.40 |
| | Above | 1.36 | 1.39 | 1.38 |

After the initial three series, respondents were told how many they had correctly recalled. We then told respondents that they would be given six additional series, and we offered them the opportunity "to earn a little money." Respondents could choose:

(A) to earn 1,000 VND for each correct answer; or

(B) to earn 3,000 VND for each correct answer if their overall scores were better than the scores of 4 out of 5 other people (a mixed group composed of three women and three men, including themselves), and nothing otherwise.

We classified those who chose Option B as more willing to compete than those who chose Option A.

Despite their similar performance on the initial three digit recall series, men were more likely than women to compete: 46% vs. 31% among the poorest, 51% vs. 40% for those with average income, and 48% vs. 39% among the better off, with a statistically significant difference in the first two income groups.

**Table 5: Proportion of Individuals Willing to Compete Against a Mixed Group**

| | | Male (%) | Female (%) | Total (%) |
|---|---|---|---|---|
| HH Wealth Compared to Commune Avg. | Below*** | 46 | 31 | 38 |
| | Average*** | 51 | 40 | 45 |
| | Above | 48 | 39 | 43 |

Findings are significant at *10%, ** 5%, *** 1%
$\chi^2 = 8.69$ (Below), $\chi^2 = 8.41$ (Average)

Once they had finished repeating the six series of digits, but before they learned how their final score compared to the one needed to win, we asked them what option they would have chosen if we were to repeat the game, but this time they would compete against women only rather than a mixed group of men and women. Table 6 indicates that both men and women in the poorer households were more likely to choose the competitive option if it was against a group comprised entirely of women, with a fairly dramatic 19% increase in women's willingness to compete against women only in below and average income households. In above average income households, both fewer men and fewer women chose to compete.

**Table 6: Proportion of Individuals Willing to Compete Against a Group of Women (top) and Change in Proportion from those Willing to Compete against a Mixed Group (bottom)**

| | | Male (%) | Female (%) | Total (%) |
|---|---|---|---|---|
| HH Wealth Compared to Commune Avg. | Below Average | 52 | 50 | 51 |
| | Above | 48 | 48 | 48 |
| | | 47 | 34 | 40 |
| | | Male (%) | Female (%) | |
| HH Wealth Compared to Commune Avg. | Below Average | 6 | 19 | |
| | Above | 3 | 8 | |
| | | -1 | -5 | |

Given the group scores on all nine rounds and the rules of the game, we classified respondents who had more than five correct answers as individuals "likely to win", those who had fewer than five correct answers as "likely to lose", and those with a score of five as "outcome difficult to predict". Importantly, we find that even among those likely to win, women were less likely to choose to compete than men. Women were more likely to underestimate their ability to win. The results also indicate that among those likely to lose, men were markedly more likely to choose to compete. Men were more likely to overestimate their ability to win.

**Table 7: Percentage of Individuals Willing to Compete against a Mixed Group**

| | | Likely to Win (50/50)[1] | | Difficult to Predict (52/48) | | Likely to Lose (45/55) | |
|---|---|---|---|---|---|---|---|
| HH Wealth Compared | | Male (%) | Female (%) | Male (%) | Female (%) | Male (%) | Female (%) |
| to Commune Avg. | Below Average | 47 | 40 | 44 | 31 | 47*** | 28*** |
| | Above | 50** | 34** | 49 | 40 | 52* | 43* |
| | | 47 | 39 | _ | _ | _ | _ |

Findings are significant at *10%, ** 5%, *** 1%
Likely Win: $\chi^2 = 4.85$ (Average)
Likely to Lose: $\chi^2 = 7.70$ (Below), $\chi^2 = 3.51$ (Average)
[1] Ratio of (male/ female) in each category

Differences in both risk and competitive behaviors have been hypothesized to derive from gender differences in confidence[7]. Consistent with our findings in the digit recall exercise, most studies suggest that men are more confident than women (see Croson and Gneezy, 2004 for a review of this literature). To explore this, we surveyed a subset of respondents who had indicated they were interested in expanding their production activities or in engaging in new economic activities. We asked how confident they were that they could make good decisions regarding this activity and how confident they were that they could negotiate with others. For each of the questions, they had to indicate whether they were very confident, somewhat confident, or not confident.

Across all income categories, men were noticeably more likely to report being very confident both when making decisions and when negotiating. The large and statistically significant gender-based differences highlighted by these results are even stronger if we consider that these figures are based on the individuals who are likely to be among the most entrepreneurial in the sample—those who wanted to expand their economic portfolio

**Table 8: Percentage of Individuals Interested in Expanding Production who are Very Confident Making Decisions**

| | | Male (%) | Female (%) | Total (%) |
|---|---|---|---|---|
| HH Wealth Compared to Commune Avg. | Below*** | 80 | 61 | 70 |
| | Average*** | 83 | 69 | 76 |
| | Above*** | 91 | 67 | 80 |

Findings are significant at *10%, ** 5%, *** 1%
$\chi^2 = 10.11$ (Below), $\chi^2 = 11.38$ (Average), $\chi^2 = 6.74$ (Above)

**Table 9: Percentage of Individuals Interested in Expanding Production who are Very Confident Negotiating**

| | | Male (%) | Female (%) | Total (%) |
|---|---|---|---|---|
| HH Wealth Compared to Commune Avg. | Below*** | 75 | 53 | 63 |
| | Average*** | 76 | 61 | 68 |
| | Above | 69 | 75 | 72 |

Findings are significant at *10%, ** 5%, *** 1%
$\chi^2 = 11.32$ (Below), $\chi^2 = 11.26$ (Average)

### 4c. Preference for Relative Position

The final category of attitudes hypothesized to vary across men and women, and closely related to choices around market participation, are social or "other-regarding" preferences. Carlsson et al. (2007) surveyed rural farmers in the southern Vietnamese province of Binh Phuoc in 2002 to assess attitudes toward relative positions. They found that, compared to other countries where similar studies had been conducted that Vietnamese respondents displayed a relatively weak preference for status. Citing Bowles' (1998) work on how institutions influence the evolution of values, the authors suggest that Vietnamese preferences may reflect the historical importance of

equality under the communist regime, and a current concern with how their activities are perceived by the local community. Carlsson et al. (2007) did not test for differences between men and women.

Following their approach, we asked survey respondents to imagine they had the opportunity to engage in an economic activity associated with a particular economic return. We also asked them to assume that anybody in the village could engage in this same activity and that there were no costs associated with it. Using the cards below as an example, we asked them to choose between two scenarios which differed only in the yearly income that they and others in their village would receive from this activity:

| | |
|---|---|
| **Option A:** Every year<br>YOU make VND 2,500,000 and<br>PEOPLE IN THE VILLAGE make VND 3,000,000 | **Option B:** Every year<br>YOU make VND 2,300,000 and<br>PEOPLE IN THE VILLAGE make VND 2,000,000 |

We pointed out that their income would be higher under option A than under option B, and that they would make less than others in the village under option A and more than the village average under option B. When this example was clear, we presented them with the set of choices reported below. They were asked to choose between option A and option B1. Respondents who chose option B1, were asked to choose between option A and option B2 and so forth until they either chose option A or had gone through the entire set. Those who continue with the B option are willing to trade away ever increasing amounts of absolute income in order to retain their higher relative position.

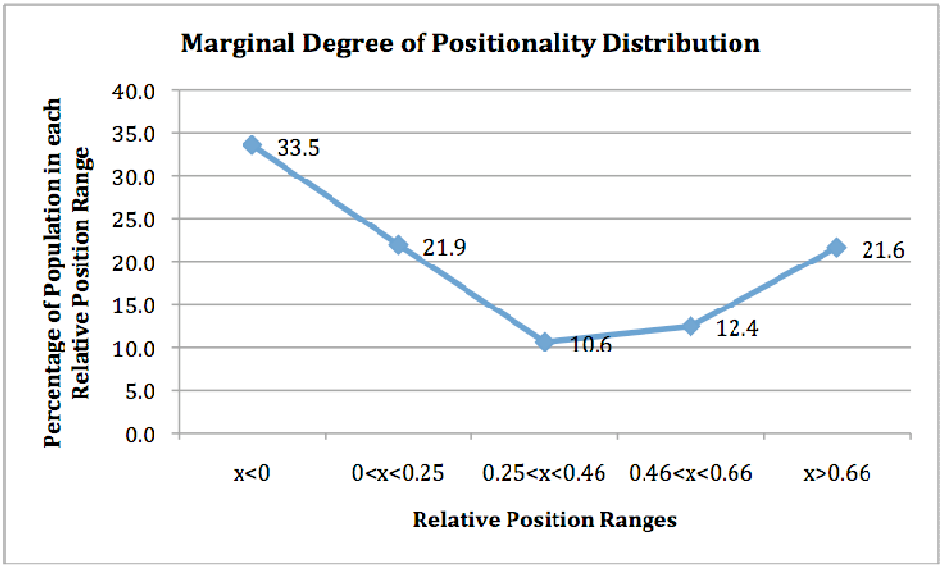
| | Own Annual Outcome | Average Annual Outcome in the Village |
|---|---|---|
| Option A | 2,500,000 | 3,000,000 |
| Option B1 | 2,500,000 | 2,000,000 |
| Option B2 | 2,250,000 | 2,000,000 |
| Option B3 | 2,040,000 | 2,000,000 |
| Option B4 | 1,840,000 | 2,000,000 |

Based on their choices we classified respondents by their marginal degree of positionality, or MDP. The MDP is a measure that captures how much of the increase in utility that individuals experience when their income increases is due to the increase in their relative income (see Carlsson et al., 2007, for a detailed description of how to interpret and calculate the MDP). For our sample, we calculate a MDP of less than 0 for individuals who chose option B1, an option that produced a higher average return for others in the commune, and left their absolute level unaffected. These individuals are classified as NOT being sensitive to their own relative return (i.e., not willing to lower the return of others for the sake of securing a higher relative position). Individuals choosing option B2 have a MDP between 0 and 0.25, choosing option B3 have a MDP between 0.25 and 0.46, and choosing option B4 have an MDP between 0.46 and

0.66. If they chose option A in all rounds their MDP is at least 0.66. In general, the longer they stayed in the game (the more rounds it took before they selected option A), the more they valued their relative income and the higher their marginal degree of positionality. Table 10 shows the percent of the sample in each MDP range, with almost a fifth (21.6%) willing to continue foregoing absolute income to maintain their relative position.

**Table 11: Distribution of marginal degree of positionality among entire population**

| Marginal degree of positionality | Number | Percent (%) |
|---|---|---|
| (1) $\gamma<0$ | 390 | 34 |
| (2) $0<\gamma<0.25$ | 255 | 22 |
| (3) $0.25<\gamma<0.46$ | 124 | 11 |
| (4) $0.46<\gamma<0.66$ | 144 | 12 |
| (5) $\gamma\geq0.66$ | 252 | 22 |
| **(n=1165)** | | |




The ranges were translated into values between 1 ($\gamma<0$) and 5 ($\gamma\geq0.66$) given in the left most column of table 10. Compared to men, women from households who are either below or above the average village income appear to place higher value on their relative position, though these differences are not significant ( in part because of large standard deviations within groups). Concern for relative position across men and women, however, is higher in the above and below average groups.

**Table 11: Mean Marginal Degree of Positionality**

| | | Male | Female |
|---|---|---|---|
| HH Wealth Compared to Commune Avg. | Below | 2.64 | 2.78 |
| | Average | 2.61 | 2.61 |
| | Above | 2.67 | 2.96 |

Findings are significant at *10%, ** 5%, *** 1%

If we look within the MDP and focus only on the initial choices we get a finer picture. Between option A and B1, the only difference is relative position as the absolute return to the individual is 2,500,000 VND in each case. 63% of men chose option B1 providing them a higher relative position by conferring a lower return to the rest of the commune, compared to 69% of women (with a Chi-square significant at p=.034). Women are more sensitive to relative position as evidenced by the overall MDP. But moving from B1 to B2 is the first decision point at which absolute income must fall – from 2,500,000 to 2,250,000, or about US $15.50 - in order to maintain a higher relative income. The majority of both men and women are willing to accept this fall in absolute income, but the male-female differences reverse. More men (70%) than women (65%) are willing to accept a lower absolute income in order to maintain a higher relative position. Women appear to be more sensitive to both relative and absolute income.

## 5. Implications

Our results provide evidence that certain attitudes and preferences differ systematically between men and women, and in many cases, these differences are most pronounced in the lowest income group. We are speculating that these same preference parameters are salient to market participation – willingness to take a risk, compete, and negotiate – and that they translate into less willingness, on average, for women to trade status quo risk in favor of program "take-up" risk, than among men.

What are the programmatic implications, bearing in mind that our research was designed only to assess attitudinal differences? Determining which design or implementation features would increase participation rates, or increase the effectiveness of targeting certain groups, would require an experiment comparing programs with and without these design features. The few relevant experiments that have been conducted suggest that the devil is in the details.

If women are indeed more risk averse than men in these situations, implications include the potential importance to women of programs that provide insurance, safety nets, and examples of successful risk takers in similar programs. Our data suggest that women with families, for example, may prefer opportunities for stable, wage paying opportunities near their homes, at the expense of upside earning potential. Guarding against downside risk, and framing risk in terms of losses rather than gains, appears to be less important to men than to women.

If women are less willing than men to compete against a mixed gender group, implications would include program designs where only women were invited to participate in specific opportunities or activities, or others where outcomes were not dependent on prevailing in competition but rather were assured at some minimal level. The nature of competition – including whom one competes against -- varies along the supply chain; success with women's groups at local levels should not be assumed to scale easily. Replicating success locally may in fact be a more effective strategy.

From our findings that men are, on average, more confident about their decision making and negotiation skills, we infer that female preferences may exist for participating in market activities where prices are well known or posted, and hence where there is a more level playing field for negotiation. Implications include transparency and uniformity in program designs such that individuals do not need to engage in complex discovery or negotiation to discern program costs and benefits (and potential prices and earnings). In addition programs might enhance participation with training and support strategies to increase decision making and negotiation skills, with the use of negotiation partners, or by providing examples of the benefits that have accrued to former participants.

An array of program implications follow from our finding that, on average, women care more about relative position than do men. These include providing information about the impacts on relative position, or perhaps a strategy where only impacts on absolute position are reported. This comports with early work by Frank (1985) on positional goods, where relative consumption (e.g. house size) matters more to individuals than absolute consumption. In general, social welfare gains are possible when taxes are shifted toward, or expenditures are shifted away from, positional goods.

Participatory poverty assessments offer insights that may help to explain social preferences in Vietnam. "With few exceptions (such as support from one's immediate family) networks of support which they fall back on seem to be held together by complex webs of reciprocal arrangements rather than being simply a form of handout. The poverty assessments suggest that poor households have to pay to access social capital, just as they pay to access any other capital." (Voices of the Poor, p. 46) These payments often take the form of contributions to social events, such as weddings and funerals. Women repeatedly complain about over-extravagant contributions to social events -- a male priority (Voices of the Poor, p.v) – and women may be more sensitive to social position because these contributions tax the poorest households rather than because of status preferences.

There are other explanations for a reluctance to increase market orientation. In the participatory poverty assessments, for example, residents of Ha Tinh expressed resentment of local taxes and contributions, and distrust over local Government financing (Voices of the Poor, p. iv). This is particularly relevant since the more one engages in the formal market; the more one begins to encounter the formal authorities.

But this does not explain our measured gender differences in choices over market orientation. Some per-head public contributions in Ha Tinh are particularly regressive since

poorer households have more dependents (Voices of the Poor, p. 56). Likewise, per-use market fees penalize the poorest, who tend to trade more frequently and in smaller quantities. Even if men and women had identical preferences, since there are more women than men in the poorest households, these fees may discourage relatively more women.

Gender-based differences that can hamper market participation are found in realms other than the behavioral attributes we have discussed. Women and men tend to differ in the constraints they face. Most notably in Vietnam, women are likely to have more limited access to capital and information (CIE, 2002), to face higher transaction costs (Van de Walle and Cratty, 2004), to earn lower wages (World Bank, 1999) to have a heavier work load (CIE, 2002), and to be victims of domestic violence (CIE, 2002).

To be sure, all these commonly identified constraints may matter, but they do not constitute the whole story. As a simple example, in results reported elsewhere, individuals from this sample were asked if they were interested in expanding their current production levels or engaging in a new economic activity, activities that form the basis for the development agency intervention. Approximately 40% said yes, and an almost equal proportion said no, they were not interested. *Of the group reporting no interest, 70% reported that they did not have enough healthy food to feed their family in the previous year.* The remaining 20% of respondents would like to expand or add activities, but they could not, overwhelmingly because they could not afford the initial investment. Yet, the majority of these individuals do not want to borrow additional money (Anderson *et. al*, 2008)

So we have a behavioral paradox. The predominant underlying assumption in development strategies is that individuals will avail themselves of opportunities to improve their livelihoods. But as we have discovered, the large "no interest" group is disproportionately comprised of the food insecure, and of women.

What explains this reticence to attempt to improve one's livelihood? For those who indicate an interest but anticipate a constraint, traditional program activities – supplying credit, job training, etc. may be sufficient to segue them into the market, but for the almost 40% who claimed no interest, we posit that understanding perceived risks, and offering programmatic responses, may afford more successful targeting. The key to exploiting these attitudinal differences, we believe, is to design programs that attract the target groups, rather than designing programs of general interest, and then ex-post to attempt to target certain sub-populations.

In addition to attitudes and information, perceived risk is known to be influenced by a suite of qualitative dimensions, including the reversibility, proximity (immediate versus delayed), frequency (chronic versus catastrophic), familiarity, equity (distribution of impacts across individuals or generations, or dread, and control (voluntary versus involuntary) of the outcome. Considerable experimental evidence has established that individuals regularly overestimate the risk of small, dreaded, unfamiliar, unfair and involuntary events. Providing women with more control coping with risk, and more input into risk mitigating strategies (as opposed to just dealing with the consequences), could alter their risk perceptions.

Future work will examine intra-household differences, and the importance of household composition. For example, Sunden and Surett (1998) found that single men were more risk prone than single women, but that married men (and women) were less risk prone than single men (and women). We believe that having children matters – both on the constraint and the preference side. Elsewhere we have found that men's and women's baseline savings behavior, and how much they value teaching thrift, differ significantly, but that having children elicits the same marginal (positive) change in both men and women (Anderson and Nevitte, 2006). This has potential implications for policies or programs that commonly target women, such as microfinance. Achieving the same increase in savings without targeting may be an optimal outcome if the targeting has other detrimental impacts, such as domestic violence.

In summary, the stark attitudinal differences between women and men suggest a tension between gender participation and market orientation goals. And though suggested by our research, though not verifiable with our data, the differences also have implications for how best to enhance women's participation in market-oriented development programs.

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## Appendix 1: Baseline Characteristics of Sample

### Annual Household Income*

| | VND (millions) | USD** |
|---|---|---|
| Mean | 23.7 | 1,474 |
| Median | 19.5 | 1,212 |
| Standard Deviation | 18.2 | 1,132 |
| Range | 1.8-250 | 112-15,543 |

*Reported individually (for couple households, husband and wife responses both included here)
**3/15/08 exchange rate of 16,084 VND/1 USD

Two measures of income variability were collected in our sample: whether 2007 income was lower, the same, or higher than 2006, and how much annual income has varied over the last two years. Economic security and a recent annual increase in income were positively correlated (.218, p=.000).

| | | Frequency | Percent | Mean |
|---|---|---|---|---|
| Sample Size | _ | 1165 | _ | _ |
| Commune | Thach Lac | 359 | _ | _ |
| | Tuong Son | 431 | _ | _ |
| | Thach Viet | 375 | _ | _ |
| Gender | Male | 513 | _ | _ |
| | Female | 652 | _ | _ |
| Heard of IMPP | Yes | 359 | 31 | _ |
| | No | 806 | 69 | _ |
| Land Asset | | Mean | Median | Range |
| How much land does your family have for residence, garden, or business? ($m^2$) | | 799.35 | 551.00 | 5885 |
| How much agricultural land with red book does your family have? ($m^2$) | | 3520.04 | 3500 | 10000 |
| How much of it is of good quality? ($m^2$) | | 1605.43 | 1500 | 7500 |
| How much of it is irrigated? ($m^2$) | | 2149.73 | 2000 | 8000 |
| How much of it is used by others? ($m^2$) | | 60.98 | | 5000 |
| How much ag. land did you use in 2007? ($m^2$) | | 3958.72 | 3500 | 15000 |
| Household Characteristic s | | Mean | Median | Range |
| Size of Household | | 4.81 | 5 | 9 |
| Number of Children age 16 or younger per Household | | 1.97 | 2 | 6 |
| Number of Dependents per Household | | 2.94 | 3 | 8 |

## Appendix 2: OLS Regression results for the choosing to compete

In this paper we primarily use statistical methods that categorize subpopulations of interest according to several characteristics and compare them on another margin of interest. Most of the predictors and outcomes we care about are categorical (e.g., gender, relative income, expressed interest in expanding production, willingness to compete), and most of our work at this stage is intended to assist the development of new models for explaining behavior. For these reasons, at this time, we primarily focus on discrete comparisons in a cross-tabulation format.

What specifically are we doing? Let's take the example represented by Table 8. Here we define subpopulations restricted to those with specific income categories and who have expressed an interest in expanding production. Then we do a comparison by gender of the proportion who have expressed that they are very confident making decisions. In this case all of these predictors and the outcome are categorical. Thus a straight comparison by gender of groups defined down to only include those satisfying the other stated criteria, represents a controlled test on these margins. A multiple regression could also be carried out, and would allow other predictors to be incorporated (and thus controlled for) as well. But as our stated purpose is to explore new models that might explain behavior in our defined subpopulations, rather than making a generic model that could applied across a broader population with many other possible defining characteristics, we can do an entirely discrete comparison which is essentially perfectly controlled on the margins we choose to target. We believe that it is more likely that cluster analysis will yield eventual explanatory power for our largely categorical dataset, than multivariate regression which relies on the assumption of linear relationships between variables as an underpinning of its theoretical basis.

In this appendix we provide the results of an ordinary least squares (OLS) regression model, predicting an individual's probability of choosing to compete. This is an example only. A probit model was also estimated with comparable but less intuitive results so we report the OLS results for illustration. As with most regression models, rather few predictors are found to be significant (i.e., three in this case – gender, recall score and risk aversion), and a rather small amount of the variance in the dataset is explained by the model (i.e., 8%). At this stage of our analysis and understanding of the true underlying models, we believe that discrete comparison of entirely controlled subpopulation groups (defined by a few categorical characteristics) is our most valuable tool in understanding differences between segments of the population.

*** = Significant at 1%

| Dependent variable: willingness to compete | Coefficients | Standard Error |
|---|---|---|
| Woman | -.115*** | .031 |
| Years of Age | .000 | .002 |
| Years of Education | .000 | .001 |
| Female Headed Household (Divorced or Widow) | .077 | .080 |
| De-Facto Female Headed Household (Husband has migrated) | -.010 | .061 |
| Recall score (based on 9 rounds of digit recall) | .044*** | .007 |
| Averse to Risk | -.171*** | .028 |
| Constant | .428 | .097 |

Adj. $R^2$ = 0.08, N = 1143

[1] See, for example, Camerer, Loewenstein and Rabin, 2003, and Anderson and Stamoulis, 2007.
[2] Croson and Gneezy 2004, Niederle and Vesterlund 2007.
[3] The term is often used synonymously with the probabilistic event itself (the risk is the drought).
[4] We do not follow the distinction often used by economists between risk (probabilities are known), and uncertainty (probabilities are unknown). The term "ambiguity" is gaining popularity over "uncertainty" in the literature.
[5] 3/15/08 exchange rate of 16,084 VND to 1 USD.
[6] Note that these significance levels are Chi square measures from two by two (or four way) comparisons of male/female to risk averse/not risk averse within each income group, and are therefore measures of the difference of each proportion relative to what would be expected under the null hypothesis of no association. A simple pairwise (t-statistic) comparisons across gender within income group would only compare the proportion of risk averse among males to the proportion among females. In neither case would these measures compare across relative wealth level.
[7] Because of the many factors that contribute to competitive attitudes, we ran a simple OLS regression to assess whether or not gender differences were robust once other considerations were accounted for. Appendix 2 presents the results.