

Online Appendix

The Good Wife? Reputation Dynamics and Financial Decision-Making Inside the Household

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A Theory Appendix

A.1 Strategies

Before describing strategies, we introduce the notation for information sets, at which the husband and the wife make choices. Denote $h_t^H \in H_t^H$ the information set of the husband in period t . At $t = 1$, the husband has only one information set. At $t = 2$, h_t^H is characterized by the husband's observations — the wife's purchase and usage choices at $t = 1$. Denote $h_{t,g}^{NE} \in H_{t,g}^{NE}$ the non-expert wife's information set when she makes an investment choice and $h_{t,e}^{NE} \in H_{t,e}^{NE}$ when she makes a usage choice in period t . At $t = 1$, the non-expert wife has only one information set when making the investment choice; when making the usage choice, her information set is described by the productivity of the purchased good. At $t = 2$, the non-expert wife's information sets also depend on the history she observes. Similarly, denote $h_{t,g}^E \in H_{t,g}^E$ the expert wife's information set when she makes an investment choice and $h_{t,e}^E \in H_{t,e}^E$ when she makes a usage choice in period t . In contrast to the non-expert wife, the expert wife's information set when making the investment choice depends on the productivity of the risky good, which she observes.

Denote the agent i 's strategy σ^i . For convenience, we also introduce notation for behavior strategies at each information set, i.e., $\sigma_t^H : H_t^H \rightarrow [0, 1]$, $\sigma_{t,g}^E : H_{t,g}^E \rightarrow [0, 1]$, $\sigma_{t,e}^E : H_{t,e}^E \rightarrow [0, 1]$, $\sigma_{t,g}^{NE} : H_{t,g}^{NE} \rightarrow [0, 1]$, $\sigma_{t,e}^{NE} : H_{t,e}^{NE} \rightarrow [0, 1]$ map histories to the probability of an action (making a transfer, buying the risky good, or using the purchased good).

Let $P_2(h_2^H)$ be the wife's reputation at the information set h_2^H . Since the wife observes more information than the husband, she also knows $P_2(h_2^H)$ in the second period. To simplify notation, we just write P_2 for the wife's reputation at $t = 2$.

We focus on a Perfect Bayesian Equilibrium, which requires sequential rationality and the beliefs to be determined by Bayes' rule whenever possible. The Bayes' rule is the following:

$$P_2(P_1, g_1 = 1, e_1 = 1) = \frac{P_1 \sigma_{1,g}^E(h_{1,g}^E) \sigma_{1,e}^E(h_{1,e}^E)}{P_1 \sigma_{1,g}^E(h_{1,g}^E) \sigma_{1,e}^E(h_{1,e}^E) + (1 - P_1) \sigma_{1,g}^{NE}(h_{1,g}^{NE}) \sigma_{1,e}^{NE}(h_{1,e}^{NE})}$$

A.2 Proof of lemma 1

Proof. Consider $t = 2$. This is the last period, so everyone plays their static best response. For the wife, the investment strategies are $\sigma_{2,g}^{NE}(h_{2,g}^{NE}) = 1$ for any $h_{2,g}^{NE}$, and

$$\begin{aligned} \sigma_{2,g}^E(h_{2,g}^E) &= \begin{cases} 1 & \text{if } \eta_2^R = \eta^R \\ 0 & \text{if } \eta_2^R = 0 \end{cases} . \quad \text{The usage strategies are } \sigma_{2,e}^E(h_{2,e}^E) = \begin{cases} 1 & \text{if } \eta_2 \neq 0 \\ 0 & \text{if } \eta_2 = 0 \end{cases} , \\ \sigma_{2,e}^{NE}(h_{2,e}^{NE}) &= \begin{cases} 1 & \text{if } \eta_2 \neq 0 \\ 0 & \text{if } \eta_2 = 0 \end{cases} . \quad \text{The husband's payoff is increasing in } P_2: \lambda\eta^R + P_2(1-\lambda)\eta^S. \end{aligned}$$

Therefore, the husband's best response is $\sigma_2^H(h_2^H) = \begin{cases} 1 & \text{if } P_2 > P_2^* \\ [0, 1] & \text{if } P_2 = P_2^* \\ 0 & \text{if } P_2 < P_2^* \end{cases}$, where P_2^* is

$$\text{defined by } \lambda\eta^R + P_2(1-\lambda)\eta^S = \omega, \text{ i.e., } P_2^* = \frac{\omega - \lambda\eta^R}{(1-\lambda)\eta^S}. \quad \square$$

A.3 Proof of proposition 1

Proof. Suppose the hiding cost is sufficiently high: $c > \beta\lambda\eta^R$. Lemma 1 pins down the equilibrium strategies at $t = 2$, except for the husband's strategy when he is indifferent between making the transfer or not, i.e., at h_2^H such that $P_2 = P_2^*$. For these cases, let the husband randomize with probabilities $\tilde{\sigma}_2^H(h_2^H) \in [0, 1]$, which are defined further in the proof for various histories. At $t = 1$, equilibrium strategies are the following. The expert wife invests iff the risky good is productive and always uses the good unless it is unproductive and the hiding cost is too high:

$$\begin{aligned} \sigma_{1,g}^E(h_{1,g}^E) &= \begin{cases} 1 & \text{if } \eta_1^R \neq 0 \\ 0 & \text{if } \eta_1^R = 0 \end{cases} ; \\ \sigma_{1,e}^E(h_{1,e}^E) &= \begin{cases} 1 & \text{if } \eta_1 \neq 0 \text{ or } c < \beta(\lambda\eta^R + (1-\lambda)\eta^S) \\ 0 & \text{if } \eta_1 = 0 \text{ and } c \geq \beta(\lambda\eta^R + (1-\lambda)\eta^S) \end{cases} \end{aligned}$$

The non-expert wife invests with a probability that is decreasing in reputation, always uses productive and safe goods, and never uses unproductive goods.

$$\begin{aligned} \sigma_{1,g}^{NE}(h_{1,g}^{NE}) &= \begin{cases} 0 & \text{if } P_1 > \frac{P_2^*}{(1-\lambda)(1-P_2^*) + P_2^*} \\ \frac{P_2^* - P_1 + \lambda P_1(1-P_2^*)}{(1-P_1)P_2^*} \leq \lambda & \text{if } P_1 \in \left[P_2^*, \frac{P_2^*}{(1-\lambda)(1-P_2^*) + P_2^*} \right] \\ \frac{P_2^* - P_1 + \lambda P_1(1-P_2^*)}{(1-P_1)P_2^*} > \lambda & \text{if } P_1 < P_2^* \end{cases} ; \\ \sigma_{1,e}^{NE}(h_{1,e}^{NE}) &= \begin{cases} 1 & \text{if } \eta_1 \neq 0 \\ 0 & \text{if } \eta_1 = 0 \end{cases} \end{aligned}$$

Note, that the husband makes a transfer at $t = 1$ if the expected payoff is higher than the outside option. Let $V_t(P_t)$ be the expected value of the husband at time t if he has a belief P_t . Note that

$$V_2(P_2) = \begin{cases} \omega & \text{if } P_2 < P_2^* \\ \lambda\eta^R + P_2(1-\lambda)\eta^S & \text{if } P_2 \geq P_2^* \end{cases} .$$

Using productive and safe goods is weakly dominant for both wife types. When the good is unproductive, $e_1 = 0$ is optimal for the non-expert wife because the hiding cost is greater than the highest continuation payoff: $c > \beta\lambda\eta^R$. For the expert wife, it is sometimes optimal

to use the unproductive good (off-path) if the continuation payoff is larger than the cost, i.e., if $c < \beta(\lambda\eta^R + (1 - \lambda)\eta^S)$. Next, consider the purchase decision.

We will show that the strategies of the wife and the husband form an equilibrium for different values of P_1 for which the wife has different investment strategies:

$$P_1 > \frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + P_2^*} \text{ and } P_1 \leq \frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + P_2^*}.$$

For all values of P_1 , we:

1. calculate the husband's Bayesian on-equilibrium and off-equilibrium posteriors $P_2(P_1|g_1, e_1)$ for $g_1 \in \{0, 1\}$ and $e_1 \in \{0, 1\}$ given the wife's strategies,
2. show that the wife has no profitable deviation in her usage choice and calculate the husband's transfer strategy in period 2 that makes the wife indifferent between different usage choices in case she has a mixed strategy, and
3. show that the wife has no profitable deviation in her investment choice and calculate the husband's transfer strategy in period 2 that makes the wife indifferent between different investment choices in case she has a mixed strategy,
4. calculate the husband's transfer strategy in period 1.

First, suppose $P_1 > \frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + P_2^*}$.

- Given the strategies, the updated reputation is $P_2 > P_2^*$.
- For the investment choice, it is optimal for the non-expert wife to buy the safe good because $\eta^S + \beta\lambda\eta^R \geq \lambda\eta^R + \beta\lambda^2\eta^R$. This condition holds by assumption that $\beta\lambda\eta^R(1 - \lambda) \geq \lambda\eta^R - \eta^S$ (assumption 1). For the expert wife, it is optimal to buy the risky good if $\eta_1^R = \eta^R$ because $\eta^R + \beta(\lambda\eta^R + (1 - \lambda)\eta^S) > \eta^S + \beta(\lambda\eta^R + (1 - \lambda)\eta^S)$. For the expert wife, it is optimal to buy the safe good if $\eta_1^R = 0$ because $\eta^S + \beta(\lambda\eta^R + (1 - \lambda)\eta^S) > \max\{0, -c + \beta(\lambda\eta^R + (1 - \lambda)\eta^S)\}$.
- For the husband's strategy, any posterior P_2 lies above P_2^* . In this region, $V_2(P_2)$ is linear in P_2 , so $\mathbb{E}V_2(P_2) = \lambda\eta^R + \mathbb{E}P_2(1 - \lambda)\eta^S = \lambda\eta^R + P_1(1 - \lambda)\eta^S = V_2(P_1)$. Thus, the husband needs to only compare first-stage payoffs from $T_1 = 1$ and $T_1 = 0$. The first-stage payoff is increasing in P_1 :

$$\mathbb{E}[U_1^H(T_1 = 1)|P_1] = P_1(\lambda\eta^R + (1 - \lambda)\eta^S) + (1 - P_1)\eta^S$$

Moreover, at the lower end of the interval, at $P_1 = \frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + P_2^*}$, the husband prefers to make the transfer:

$$\begin{aligned} & \mathbb{E}\left[U_1^H(T_1 = 1)|P_1 = \frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + P_2^*}\right] - \omega \\ &= \frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + P_2^*}(\lambda\eta^R + (1 - \lambda)\eta^S) + \frac{(1 - \lambda)(1 - P_2^*)}{(1 - \lambda)(1 - P_2^*) + P_2^*}\eta^S - \omega \\ &\propto P_2^*(\lambda\eta^R + (1 - \lambda)\eta^S) + (1 - \lambda)(1 - P_2^*)\eta^S - \omega + \omega\lambda(1 - P_2^*) \\ &= P_2^*(\lambda\eta^R + (1 - \lambda)\eta^S) + (1 - P_2^*)\lambda\eta^R + (1 - P_2^*)(1 - \lambda)(\eta^S - \lambda\eta^R) - \omega + \omega\lambda(1 - P_2^*) \\ &= (1 - P_2^*)(\lambda(\omega - \lambda\eta^R) - (1 - \lambda)(\lambda\eta^R - \eta^S)) \geq 0 \quad (\text{by assumption 1}). \end{aligned}$$

Thus, $T_1 = 1$ in this interval.

Second, suppose $P_1 \leq \frac{P_2^*}{(1-\lambda)(1-P_2^*) + P_2^*}$.

- Given the strategies, $P_2(P_1|g_1 = 0, e_1 = 1) = P_2^*$, $P_2(P_1 \geq \frac{P_2^*}{(1-P_2^*)(1-\lambda) + 1} \equiv \bar{P}_1|g_1 = 1, e_1 = 1) \geq P_2^*$ and $P_2(P_1 < \bar{P}_1|g_1 = 1, e_1 = 1) < P_2^*$. Denote $\kappa_1^S \equiv \sigma_2^H(h_2^H)$ when $P_1 \geq \bar{P}_1$ and $g_1 = 0$. Denote $\kappa_2^S \equiv \sigma_2^H(h_2^H)$ when $P_1 < \bar{P}_1$ and $g_1 = 0$.
- For the investment choice, the non-expert wife mixes if $\eta^S + \beta\kappa_1^S\lambda\eta^R = \lambda\eta^R + \beta\lambda^2\eta^R$ and $\eta^S + \beta\kappa_2^S\lambda\eta^R = \lambda\eta^R$. These conditions pin down the husband's mixing probabilities: $\kappa_1^S = \frac{\lambda\eta^R - \eta^S + \beta\lambda^2\eta^R}{\beta\lambda\eta^R}$ and $\kappa_2^S = \frac{\lambda\eta^R - \eta^S}{\beta\lambda\eta^R}$. For the expert wife, it is optimal to buy the risky good if $\eta_1^R = \eta^R$ because $\eta^R + \beta(\lambda\eta^R + (1-\lambda)\eta^S) > \eta^S + \beta\kappa_1^S(\lambda\eta^R + (1-\lambda)\eta^S)$ and $\eta^R > \eta^S + \beta\kappa_2^S(\lambda\eta^R + (1-\lambda)\eta^S)$. The only strategies that form an equilibrium are the husband randomizing for $g_1 = 0$ and transferring with probability 1 for $g_1 = 1$, as otherwise when $P_1 = \bar{P}_1$, and $P_2 = P_2^*$ and the non-expert wife's investment rate is $> \lambda$, the non-expert wife would have the incentive to deviate by decreasing her investment rate. For the expert wife, it is optimal to buy the safe good if $\eta_1^R = 0$ because $\eta^S + \beta\kappa_1^S(\lambda\eta^R + (1-\lambda)\eta^S) > \max\{0, -c + \beta(\lambda\eta^R + (1-\lambda)\eta^S)\}$ and $\eta^S + \beta\kappa_2^S(\lambda\eta^R + (1-\lambda)\eta^S) > 0$.
- For the husband's strategy, we will look at three regions separately: $P_1 \in \left[P_2^*, \frac{P_2^*}{(1-\lambda)(1-P_2^*) + P_2^*}\right]$, $P_1 \in (\bar{P}_1, P_2^*)$, and $P_1 \leq \bar{P}_1$:
 - First, suppose $P_1 \in \left[P_2^*, \frac{P_2^*}{(1-\lambda)(1-P_2^*) + P_2^*}\right]$. We look at the difference between the sum of the first-stage and continuation payoffs under the transfer and no transfer. The expected first-stage payoff if $T_1 = 1$ is

$$\begin{aligned}\mathbb{E}[U_1^H(T_1 = 1)|P_1] &= P_1(\lambda\eta^R + (1-\lambda)\eta^S) + (1-P_1)(\sigma_{1,g}^{NE}\lambda\eta^R + (1-\sigma_{1,g}^{NE})\eta^S) \\ &= \dots = \lambda\eta^R + P_1\frac{1-\lambda}{P_2^*}(\eta^S - (1-P_2^*)\lambda\eta^R) \\ &\geq \lambda\eta^R + (1-\lambda)[\eta^S - (1-P_2^*)\lambda\eta^R]\end{aligned}$$

The difference in expected first-stage payoffs under $T_1 = 1$ and $T_1 = 0$ is

$$\Delta\mathbb{E}U_1^H = \lambda\eta^R + P_1\frac{1-\lambda}{P_2^*}(\eta^S - (1-P_2^*)\lambda\eta^R) - \omega$$

which is increasing in P_1 . The expected (discounted) second-stage continuation payoff if $T_1 = 1$ is

$$\begin{aligned}\beta\mathbb{E}[U_2^H(T_1 = 1)|P_1] &= \beta[V_2(P_2(P_1|g = 1, e = 1))Pr(g = 1, e = 1) \\ &\quad + \omega Pr(g = 0) + \omega Pr(g = 1, e = 0)]\end{aligned}$$

The expected (discounted) continuation payoff if $T_1 = 0$ can also be written in a

similar way using the linearity of payoff and $\mathbb{E}P_2 = P_1$:

$$\begin{aligned}\beta\mathbb{E}[U_2^H(T_1 = 0)|P_1] &= \beta V_2(P_1) \\ &= \beta[V_2(P_2(P_1|g = 1, e = 1))Pr(g = 1, e = 1) + \omega Pr(g = 0) + \lambda\eta^R Pr(g = 1, e = 0)]\end{aligned}$$

The difference in the expected continuation payoffs under $T_1 = 1$ and $T_1 = 0$ is

$$\begin{aligned}\beta\Delta\mathbb{E}U_2^H &= \beta Pr(g = 1, e = 0)(\omega - \lambda\eta^R) \\ &= \beta \frac{P_2^* - P_1 + \lambda P_1(1 - P_2^*)}{P_2^*}(1 - \lambda)(\omega - \lambda\eta^R)\end{aligned}$$

which is decreasing in P_1 . The husband chooses $T_1 = 1$ iff $\Delta\mathbb{E}U_1^H + \beta\Delta\mathbb{E}U_2^H \geq 0$. First, we show that $\Delta\mathbb{E}U_1^H + \beta\Delta\mathbb{E}U_2^H \geq 0$ at the lower end, $P_1 = P_2^*$:

$$\begin{aligned}\Delta\mathbb{E}U_1^H + \beta\Delta\mathbb{E}U_2^H &= \lambda\eta^R + (1 - \lambda)(\eta^S - (1 - P_2^*)\lambda\eta^R) - \omega + \beta\lambda(1 - P_2^*)(1 - \lambda)(\omega - \lambda\eta^R) \\ &= \lambda\eta^R + (1 - \lambda)(\eta^S - (1 - P_2^*)\lambda\eta^R) \\ &\quad - (\lambda\eta^R + P_2^*(1 - \lambda)\eta^S) + \beta\lambda(1 - P_2^*)(1 - \lambda)(\omega - \lambda\eta^R) \\ &= (1 - \lambda)(1 - P_2^*)(\beta\lambda(\omega - \lambda\eta^R) - (\lambda\eta^R - \eta^S)) \geq 0,\end{aligned}$$

where the inequality holds by assumption 1.

Second, we show that $\Delta\mathbb{E}U_1^H + \beta\Delta\mathbb{E}U_2^H$ is monotonically increasing in P_1 :

$$\begin{aligned}\frac{\partial}{\partial P_1}(\Delta\mathbb{E}U_1^H + \beta\Delta\mathbb{E}U_2^H) &= \frac{1 - \lambda}{P_2^*}(\eta^S - (1 - P_2^*)\lambda\eta^R) + \beta\frac{1 - \lambda}{P_2^*}(\lambda(1 - P_2^*) - 1)(\omega - \lambda\eta^R) \\ &\propto \eta^S - (1 - P_2^*)\lambda\eta^R + \beta P_2^*(1 - \lambda)\eta^S(\lambda(1 - P_2^*) - 1) \\ &= P_2^*[\lambda\eta^R - \beta\eta^S(1 - \lambda)(1 - \lambda(1 - P_2^*))] - (\lambda\eta^R - \eta^S) \\ &= \beta\lambda(\omega - \lambda\eta^R) \left[\frac{\eta^R}{\beta(1 - \lambda)\eta^S} - \frac{1 - \lambda(1 - P_2^*)}{\lambda} \right] - (\lambda\eta^R - \eta^S) \\ &\geq \beta\lambda(\omega - \lambda\eta^R) \left[\frac{\eta^R}{(1 - \lambda)\eta^S} - \frac{1 - \lambda(1 - P_2^*)}{\lambda} \right] - (\lambda\eta^R - \eta^S) \\ &= \beta\lambda(\omega - \lambda\eta^R) \left[1 + \frac{\lambda\eta^R + \lambda^2\eta^R - \lambda\omega - \eta^S + \lambda\eta^S}{\lambda(1 - \lambda)\eta^S} \right] - (\lambda\eta^R - \eta^S) > 0,\end{aligned}$$

where we have used that $P_2^* = \frac{\omega - \lambda\eta^R}{(1 - \lambda)\eta^S}$ and the inequality holds under assumption 1. Thus, the husband chooses $T_1 = 1$ at all $P_1 \geq P_2^*$.

- Next, suppose $P_1 \in (\bar{P}_1, P_2^*)$. Following the same approach as above, the difference in expected first-stage payoffs under $T_1 = 1$ and $T_1 = 0$ is

$$\Delta\mathbb{E}U_1^H = \lambda\eta^R + P_1 \frac{1 - \lambda}{P_2^*}(\eta^S - (1 - P_2^*)\lambda\eta^R) - \omega$$

which is increasing in P_1 . The difference in the expected continuation payoffs under $T_1 = 1$ and $T_1 = 0$ is

$$\begin{aligned}
\beta \Delta \mathbb{E} U_2^H &= \beta \Pr(g = 1, e = 1)(\lambda \eta^R + P_2(P_1|g = 1, e = 1)(1 - \lambda)\eta^S - \omega) \\
&= \beta(P_1 + (1 - P_1)\sigma_{1,g}^{NE})\lambda(\lambda \eta^R + P_2(P_1|g = 1, e = 1)(1 - \lambda)\eta^S - \omega) \\
&= \beta \frac{P_1 P_2^* + P_2^* - P_1 + \lambda P_1(1 - P_2^*)}{P_2^*} \lambda \times \\
&\quad \left(\lambda \eta^R + \frac{P_1 P_2^*}{P_1 P_2^* + P_2^* - P_1 + \lambda P_1(1 - P_2^*)} (1 - \lambda) \eta^S - \omega \right) \\
&= \beta \lambda \left[(\omega - \lambda \eta^R) \frac{(1 - \lambda) P_1(1 - P_2^*) - P_2^*}{P_2^*} + \eta^S (1 - \lambda) P_1 \right]
\end{aligned}$$

which is also increasing in P_1 . Thus, $\Delta \mathbb{E} U_1^H + \beta \Delta \mathbb{E} U_2^H$ is monotonically increasing in P_1 in this interval. At the lower end, if $P_1 = \bar{P}_1$, then $P_2(P_1|g = 1, e = 1) = P_2^*$, so $\beta \Delta \mathbb{E} U_2^H = 0$. For the first-stage payoff, $\Delta \mathbb{E} U_1^H < 0$. Therefore, the husband chooses $T_1 = 0$ at $P_1 = \bar{P}_1$ and switches to $T_1 = 1$ at some higher P_1 .

- Finally, suppose $P_1 \leq \bar{P}_1$. On the equilibrium path, updated reputation is always below P_2^* . Then, following the same argument as in Proposition 1, the husband needs to only consider the first-stage payoff. The expected first-stage payoff is worse than the outside option:

$$\begin{aligned}
\mathbb{E}[U_1^H(T_1 = 1)|P_1] &= P_1(\lambda \eta^R + (1 - \lambda)\eta^S) + (1 - P_1)(\sigma_{1,g}^{NE} \lambda \eta^R + (1 - \sigma_{1,g}^{NE})\eta^S) \\
&\leq P_1(\lambda \eta^R + (1 - \lambda)\eta^S) + (1 - P_1)\lambda \eta^R \\
&< P_2^*(\lambda \eta^R + (1 - \lambda)\eta^S) + (1 - P_2^*)\lambda \eta^R \\
&\leq \lambda \eta^R + (1 - \lambda)\eta^S = \omega
\end{aligned}$$

Thus, the husband also chooses $T_1 = 0$ at all $P_1 < \bar{P}_1$.

Combining the three intervals for the husband, we conclude that the husband uses a threshold strategy:

$$T_1(P_1) = \begin{cases} 1 & \text{if } P_1 \geq P_1^* \\ 0 & \text{if } P_1 < P_1^* \end{cases}$$

where $P_1^* \in \left(\frac{P_2^*}{(1 - P_2^*)(1 - \lambda) + 1}, P_2^* \right)$. □

A.4 Proof of proposition 2

Proof. Suppose the hiding cost is sufficiently small: $c \leq \frac{\lambda \eta^R - \eta^S}{1 - \lambda}$. Lemma 1 pins down the equilibrium strategies at $t = 2$, except for the husband's strategy when he is indifferent between making the transfer or not, i.e., at h_2^H such that $P_2 = P_2^*$. For these cases, let the husband randomize with probabilities $\tilde{\sigma}_2^H(h_2^H) \in [0, 1]$, which are defined further in the proof for various histories. At $t = 1$, equilibrium strategies are the following. The expert wife invests iff the risky good is productive and always uses the good in equilibrium:

$$\sigma_{1,g}^E(h_{1,g}^E) = \begin{cases} 1 & \text{if } \eta_1^R \neq 0 \\ 0 & \text{if } \eta_1^R = 0 \end{cases};$$

$$\sigma_{1,e}^E(h_{1,e}^E) = \begin{cases} 1 & \text{if } \eta_1 \neq 0 \text{ or } \left(\eta_1 = 0 \text{ and } P_1 \geq \frac{P_2^*}{(1-\lambda)(1-P_2^*)+1} \right) \\ 0 & \text{if } \eta_1 = 0 \text{ and } P_1 < \frac{P_2^*}{(1-\lambda)(1-P_2^*)+1} \end{cases}$$

The non-expert wife invests with probability at least λ , always uses the productive and safe goods but uses the unproductive good with positive probability only when her reputation is not too low:

$$\sigma_{1,g}^{NE}(h_{1,g}^{NE}) = \begin{cases} 1 & \text{if } P_1 > \frac{P_2^*}{P_2^* + \lambda(1-P_2^*)} \\ \lambda \frac{P_1}{1-P_1} \frac{1-P_2^*}{P_2^*} \geq \lambda & \text{if } P_1 \in \left[P_2^*, \frac{P_2^*}{P_2^* + \lambda(1-P_2^*)} \right] \\ \frac{P_2^* - P_1 + \lambda P_1(1-P_2^*)}{(1-P_1)P_2^*} > \lambda & \text{if } P_1 < P_2^* \end{cases};$$

$$\sigma_{1,e}^{NE}(h_{1,e}^{NE}) = \begin{cases} 1 & \text{if } \eta_1 \neq 0 \text{ or } (\eta_1 = 0 \text{ and } P_1 \geq P_2^*) \\ \left[\frac{P_1(1-P_2^*)}{P_2^* - P_1 + \lambda P_1(1-P_2^*)} - 1 \right] \frac{\lambda}{1-\lambda} & \text{if } \eta_1 = 0 \text{ and } P_1 \in \left[\frac{P_2^*}{(1-\lambda)(1-P_2^*)+1}, P_2^* \right) \\ 0 & \text{if } \eta_1 = 0 \text{ and } P_1 < \frac{P_2^*}{(1-\lambda)(1-P_2^*)+1} \end{cases}$$

We will show that the strategies of the wife and the husband form an equilibrium for different values of P_1 for which the wife has different investment and usage strategies:

- $P_1 > \frac{P_2^*}{P_2^* + \lambda(1-P_2^*)},$
- $P_1 \in \left[P_2^*, \frac{P_2^*}{P_2^* + \lambda(1-P_2^*)} \right],$
- $P_1 \in \left[\frac{P_2^*}{(1-\lambda)(1-P_2^*)+1}, P_2^* \right),$
- $P_1 < \frac{P_2^*}{(1-\lambda)(1-P_2^*)+1}.$

The proofs are structured as before.

First, suppose $P_1 > \frac{P_2^*}{P_2^* + \lambda(1-P_2^*)} \geq P_2^*.$

- $P_2(P_1, g_1 = 1, e_1 = 1) > P_2^*$ and $P_2(P_1, g_1 = 0, e_1 = 1) = 1$, $P_2(P_1, g_1 = 1, e_1 = 0) < P_2(P_1, g_1 = 1, e_1 = 1).$
- For the usage choice, the non-expert wife always uses the purchased good if $-c + \beta\lambda\eta^R \geq 0$. This condition is satisfied because we assume $\beta\lambda\eta^R(1-\lambda) \geq \lambda\eta^R - \eta^S$ and $c \leq \frac{\lambda\eta^R - \eta^S}{1-\lambda}$. Under this condition, the expert wife also always uses the purchased good.

- For the investment choice, the wife's static best responses are optimal (see lemma 1) as they induce a reputation $P_2 > P_2^*$, which guarantees the future transfers. Therefore, there is no profitable deviation.
- For the husband's strategy, as any posterior P_2 on the equilibrium path lies above P_2^* , $V_2(P_2)$ is linear in P_2 , so $\mathbb{E}V_2(P_2) = \lambda\eta^R + \mathbb{E}P_2(1-\lambda)\eta^S = \lambda\eta^R + P_1(1-\lambda)\eta^S = V_2(P_1)$. Thus, the husband needs to only compare first-stage payoffs from $T_1 = 1$ and $T_1 = 0$. Since $P_1 > P_2^*$, we have $\mathbb{E}[U_1^H(T_1 = 1)|P_1] > \omega$, so the husband prefers to make the transfer, $T_1 = 1$.

Second, suppose $P_1 \in \left[P_2^*, \frac{P_2^*}{P_2^* + \lambda(1 - P_2^*)} \right]$. Denote $\kappa_1^R \equiv \tilde{\sigma}_2^H(h_2^H)$ when P_1 is in this range and $g_1 = 1$.

- Given the strategies, the updated reputation is $P_2(P_1|g_1 = 1, e_1 = 1) = P_2^*$ and $P_2(P_1|g_1 = 0, e_1 = 1) \geq P_2^*$, $P_2(P_1, g_1 = 1, e_1 = 0) < P_2(P_1, g_1 = 1, e_1 = 1)$.
- For the usage choice, the non-expert wife always uses the purchased good if $-c + \beta\kappa_1^R\lambda\eta^R \geq 0$. Once we define κ_1^R , we can show that this condition is satisfied because we assume $\beta\lambda\eta^R(1-\lambda) \geq \lambda\eta^R - \eta^S$ and $c \leq \frac{\lambda\eta^R - \eta^S}{1-\lambda}$. Under this condition, the expert wife also always uses the purchased good.
- For the investment choice, the non-expert wife is mixing if $\lambda\eta^R - (1-\lambda)c + \beta\kappa_1^R\lambda\eta^R = \eta^S + \beta\lambda\eta^R$. This condition pins down the husband's transfer strategy: $\kappa_1^R = \frac{\eta^S + \beta\lambda\eta^R - \lambda\eta^R + (1-\lambda)c}{\beta\lambda\eta^R}$. This value of κ_1^R ensures that the condition for usage $-c + \beta\kappa_1^R\lambda\eta^R \geq 0$ holds. The only strategies that form an equilibrium are the husband randomizing for $g_1 = 1$ and transferring with probability 1 for $g_1 = 0$ as otherwise when $P_1 = P_2^*$ and the non-expert wife's investment rate is λ , the non-expert wife would have the incentive to deviate by increasing her investment rate. For the expert wife, buying the risky good is optimal when $\eta_1^R = \eta^R$ because $\eta^R + \beta\kappa_1^R(\lambda\eta^R + (1-\lambda)\eta^S) > \eta^S + \beta(\lambda\eta^R + (1-\lambda)\eta^S)$; buying the safe good is optimal when $\eta_1^R = 0$ because $-c + \beta\kappa_1^R(\lambda\eta^R + (1-\lambda)\eta^S) < \eta^S + \beta(\lambda\eta^R + (1-\lambda)\eta^S)$.
- For the husband's strategy, again any posterior P_2 lies above or at P_2^* , so the husband only compares first-stage payoffs from $T_1 = 1$ and $T_1 = 0$ (note that it does not matter whether $P_2 > P_2^*$ or $P_2 = P_2^*$ as the value from the transfer is the same as the outside option for $P_2 = P_2^*$). The expected first-stage payoff from $T_1 = 1$ is increasing in P_1 :

$$\begin{aligned} \mathbb{E}[U_1^H(T_1 = 1)|P_1] &= P_1(\lambda\eta^R + (1-\lambda)\eta^S) + (1-P_1)(\sigma_{1,g}^{NE}\lambda\eta^R + (1-\sigma_{1,g}^{NE})\eta^S) \\ \Rightarrow \frac{\partial \mathbb{E}[U_1^H(T_1 = 1)|P_1]}{\partial P_1} &= \lambda\eta^R(1-\sigma_{1,g}^{NE}) + \eta^S(\sigma_{1,g}^{NE} - \lambda) + \frac{\partial \sigma_{1,g}^{NE}}{\partial P_1}(\lambda\eta^R - \eta^S) \geq 0 \end{aligned}$$

where we use $\frac{\partial \sigma_{1,g}^{NE}}{\partial P_1} \geq 0$. Consider the lower boundary of this interval, $P_1 = P_2^*$:

$$\begin{aligned} \mathbb{E}[U_1^H(T_1 = 1)|P_1 = P_2^*] &= P_2^*(\lambda\eta^R + (1-\lambda)\eta^S) + (1-P_2^*)(\lambda^2\eta^R + (1-\lambda)\eta^S) \\ &< P_2^*(\lambda\eta^R + (1-\lambda)\eta^S) + (1-P_2^*)\lambda\eta^R = \omega \end{aligned}$$

Thus, the husband prefers the outside option, $T_1 = 0$, at $P_1 = P_2^*$ and switches to $T_1 = 1$ at some belief P_1^* that is above P_2^* .

Third, suppose $P_1 \in \left[\frac{P_2^*}{(1-\lambda)(1-P_2^*)+1}, P_2^* \right)$. Denote $\kappa_2^R \equiv \sigma_2^H(h_2^H)$ when P_1 is in this range and $g_1 = 1$. Denote $\kappa_2^S \equiv \sigma_2^H(h_2^H)$ when P_1 is in this range and $g_1 = 0$.

- Given the strategies, the updated reputation is $P_2(P_1|g_1 = 1, e_1 = 1) = P_2(P_1|g_1 = 0, e_1 = 1) = P_2^*$, $P_2(P_1|g_1 = 1, e_1 = 0) = 0$.
- For the usage choice, the non-expert wife mixes when making the usage choice if $-c + \beta\kappa_2^R\lambda\eta^R = 0$. Thus, $\kappa_2^R = \frac{c}{\beta\lambda\eta^R}$. Under this condition, the expert wife strictly prefers to use the purchased good because her continuation payoff is higher.
- For the investment choice, the non-expert wife mixes if $\lambda\eta^R - (1-\lambda)c\sigma_{1,e}^{NE}(h_{1,e}^{NE}) + \beta\kappa_2^R\lambda\eta^R(\lambda + (1-\lambda)\sigma_{1,e}^{NE}(h_{1,e}^{NE})) = \eta^S + \beta\lambda\eta^R\kappa_2^S$. This condition is equivalent to $\kappa_2^S = \frac{\lambda(\eta^R + c) - \eta^S}{\beta\lambda\eta^R}$. The expert wife strictly prefers to buy the risky good when $\eta_1^R = \eta^R$ because $\eta^R + \beta\kappa_2^R(\lambda\eta^R + (1-\lambda)\eta^S) > \eta^S + \beta\kappa_2^S(\lambda\eta^R + (1-\lambda)\eta^S)$. The expert wife strictly prefers to buy the safe good when $\eta_1^R = 0$ because $-c + \beta\kappa_2^R(\lambda\eta^R + (1-\lambda)\eta^S) < \eta^S + \beta\kappa_2^S(\lambda\eta^R + (1-\lambda)\eta^S)$.
- For the husband's strategy, note that on the equilibrium path, any posterior P_2 lies below P_2^* . In this region, $V_2(P_2)$ is constant in P_2 , so $\mathbb{E}V_2(P_2) = \omega = V_2(P_1)$. Thus, the husband needs to only compare first-stage payoffs from $T_1 = 1$ and $T_1 = 0$:

$$\begin{aligned}\mathbb{E}[U_1^H(T_1 = 1)|P_1] &= P_1(\lambda\eta^R + (1-\lambda)\eta^S) + (1-P_1)(\sigma_{1,g}^{NE}\lambda\eta^R + (1-\sigma_{1,g}^{NE})\eta^S) \\ &< P_1(\lambda\eta^R + (1-\lambda)\eta^S) + (1-P_1)\lambda\eta^R \\ &< P_2^*(\lambda\eta^R + (1-\lambda)\eta^S) + (1-P_2^*)\lambda\eta^R = \omega\end{aligned}$$

Thus, the husband prefers the outside option, $T_1 = 0$, in this interval.

Finally, suppose $P_1 < \frac{P_2^*}{(1-\lambda)(1-P_2^*)+1}$. Denote $\kappa_3^S \equiv \sigma_2^H(h_2^H)$ when P_1 is in this range and $g_1 = 0$.

- Given the strategies, the updated reputation is $P_2(P_1|g_1 = 1, e_1 = 1) < P_2^*$, $P_2(P_1|g_1 = 1, e_1 = 0) = 0$, $P_2(P_1|g_1 = 0, e_1 = 1) = P_2^*$.
- For the usage choice, $e_1 = 0$ for wife types when $\eta_1 = 0$ because using the unproductive good cannot increase the reputation enough to reach threshold P_2^* . Using the productive risky and safe goods is dominant, so $e_1 = 1$ for both wife types when $\eta_1 \neq 0$.
- For the investment choice, the non-expert wife mixes if $\lambda\eta^R = \eta^S + \beta\lambda\eta^R\kappa_3^S$. This condition is equivalent to $\kappa_3^S = \frac{\lambda\eta^R - \eta^S}{\beta\lambda\eta^R}$. The expert wife strictly prefers to buy the risky good when $\eta_1^R = \eta^R$ because $\eta^R > \eta^S + \beta\kappa_3^S(\lambda\eta^R + (1-\lambda)\eta^S)$. The expert wife strictly prefers to buy the safe good when $\eta_1^R = 0$ because $0 < \eta^S + \beta\kappa_3^S(\lambda\eta^R + (1-\lambda)\eta^S)$.
- For the husband's strategy, note that on the equilibrium path, any posterior P_2 is again below P_2^* . Thus, as in the previous interval, the husband prefers the outside option, $T_1 = 0$, in this interval.

Combining the four intervals, we conclude that the husband uses a threshold strategy:

$$T_1(P_1) = \begin{cases} 1 & \text{if } P_1 \geq P_1^* \\ 0 & \text{if } P_1 < P_1^* \end{cases}$$

where $P_1^* \in \left(P_2^*, \frac{P_2^*}{\lambda(1 - P_2^*) + P_2^*} \right)$. □

A.5 Proof of Proposition 3

Proof. Suppose the hiding costs are intermediate: $\frac{\lambda\eta^R - \eta^S}{1 - \lambda} < c \leq \beta\lambda\eta^R$.

Lemma 1 pins down the equilibrium strategies at $t = 2$, except for the husband's strategy when he is indifferent between making the transfer or not, i.e., at h_2^H such that $P_2 = P_2^*$. For these cases, let the husband randomize with probabilities $\tilde{\sigma}_2^H(h_2^H) \in [0, 1]$, which are defined further in the proof for various histories.

At $t = 1$, equilibrium strategies are the following. The expert wife invests iff the risky good is productive and always uses the good unless her reputation is very low:

$$\sigma_{1,g}^E(h_{1,g}^E) = \begin{cases} 1 & \text{if } \eta_1^R \neq 0 \\ 0 & \text{if } \eta_1^R = 0 \end{cases} ;$$

$$\sigma_{1,e}^E(h_{1,e}^E) = \begin{cases} 1 & \text{if } \eta_1 \neq 0 \text{ or } \left(\eta_1 = 0 \text{ and } P_1 \geq \frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + 1} \right) \\ 0 & \text{if } \eta_1 = 0 \text{ and } P_1 < \frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + 1} \end{cases}$$

The non-expert wife invests with probability decreasing in reputation, always uses the productive and safe goods but uses the unproductive good with positive probability only when her reputation is not too low:

$$\sigma_{1,g}^{NE}(h_{1,g}^{NE}) = \begin{cases} 0 & \text{if } P_1 > \frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + P_2^*} \\ \frac{P_2^* - P_1 + \lambda P_1(1 - P_2^*)}{(1 - P_1)P_2^*} \leq \lambda & \text{if } P_1 \in \left[P_2^*, \frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + P_2^*} \right] \\ \frac{P_2^* - P_1 + \lambda P_1(1 - P_2^*)}{(1 - P_1)P_2^*} > \lambda & \text{if } P_1 < P_2^* \end{cases} ;$$

$$\sigma_{1,e}^{NE}(h_{1,e}^{NE}) = \begin{cases} 1 & \text{if } \eta_1 \neq 0 \text{ or } (\eta_1 = 0 \text{ and } P_1 \geq P_2^*) \\ \left[\frac{P_1(1 - P_2^*)}{P_2^* - P_1 + \lambda P_1(1 - P_2^*)} - 1 \right] \frac{\lambda}{1 - \lambda} & \text{if } \eta_1 = 0 \text{ and } P_1 \in \left[\frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + 1}, P_2^* \right) \\ 0 & \text{if } \eta_1 = 0 \text{ and } P_1 < \frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + 1} \end{cases}$$

Note that if the purchased good is productive or safe, it is weakly dominant to use it for both wife types because the cost is zero and reputation drops to $P_2 = 0$ if the good is not used.

We will show that the strategies of the wife and the husband form an equilibrium for different values of P_1 for which the wife has different usage or investment strategies:

$$P_1 > \frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + P_2^*}, \quad P_1 \in \left[P_2^*, \frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + P_2^*} \right],$$

$$P_1 \in \left[\frac{P_2^*}{(1 - \lambda)(1 - P_2^*) + 1}, P_2^* \right), \text{ and}$$

$$P_1 < \frac{P_2^*}{(1-\lambda)(1-P_2^*)+1}.$$

The proofs are structured as before.

First, suppose $P_1 > \frac{P_2^*}{(1-\lambda)(1-P_2^*)+P_2^*}$.

- Given the strategies, $P_2(P_1|g_1 = 1, e_1 = 1) = 1$ and $P_2(P_1|g_1 = 0, e_1 = 1) > P_2^*$.
- For the usage choice, if the purchased good is unproductive, both wife types use it because $-c + \beta\lambda\eta^R \geq 0$.
- For the investment choice, it is optimal for the non-expert wife to buy the safe good because $\eta^S + \beta\lambda\eta^R \geq \lambda\eta^R - (1-\lambda)c + \beta\lambda\eta^R$. This condition holds by the assumption that $c > \frac{\lambda\eta^R - \eta^S}{1-\lambda}$. For the expert wife, if $\eta_1^R = \eta^R$, it is optimal to buy the risky good because $\eta^R + \beta(\lambda\eta^R + (1-\lambda)\eta^S) > \eta^S + \beta(\lambda\eta^R + (1-\lambda)\eta^S)$. If $\eta_1^R = 0$, it is optimal to buy the safe good for the expert wife because $\eta^S + \beta(\lambda\eta^R + (1-\lambda)\eta^S) > -c + \beta(\lambda\eta^R + (1-\lambda)\eta^S)$.
- The wife's strategy in this interval is the same as in proposition 2, so the husband's payoff is also the same. Thus, $T_1 = 1$ in this interval.

Second, suppose $P_1 \in \left[P_2^*, \frac{P_2^*}{(1-\lambda)(1-P_2^*)+P_2^*} \right]$. Denote $\kappa_1^S \equiv \sigma_2^H(h_2^H)$ when P_1 is in this interval and $g_1 = 0$.

- Given the strategies, $P_2(P_1|g_1 = 1, e_1 = 1) \geq P_2^*$ and $P_2(P_1|g_1 = 0, e_1 = 1) = P_2^*$.
- For the usage choice, if the purchased good is unproductive, both wife types use it because $-c + \beta\lambda\eta^R \geq 0$.
- For the investment choice, the non-expert wife mixes if $\eta^S + \beta\kappa_1^S\lambda\eta^R = \lambda\eta^R - (1-\lambda)c + \beta\lambda\eta^R$. These conditions pin down the husband's transfer strategy: $\kappa_1^S = \frac{\lambda\eta^R - \eta^S - (1-\lambda)c + \beta\lambda\eta^R}{\beta\lambda\eta^R}$. For the expert wife, it is optimal to buy the risky good if $\eta_1^R = \eta^R$ because $\eta^R + \beta(\lambda\eta^R + (1-\lambda)\eta^S) > \eta^S + \beta\kappa_1^S(\lambda\eta^R + (1-\lambda)\eta^S)$. If $\eta_1^R = 0$, it is optimal to buy the safe good for the expert wife because $\eta^S + \beta\kappa_1^S(\lambda\eta^R + (1-\lambda)\eta^S) > -c + \beta(\lambda\eta^R + (1-\lambda)\eta^S)$.
- For the husband's strategy, on the equilibrium path, updated reputation is always $\geq P_2^*$. Thus, the husband needs to only consider the first-stage payoff. The expected first-stage payoff is

$$\Delta\mathbb{E}[U_1^H(T_1 = 1)|P_1] = \lambda\eta^R + P_1 \frac{1-\lambda}{P_2^*} (\eta^S - (1-P_2^*)\lambda\eta^R) - \omega,$$

which is increasing in P_1 . At the lower end of the interval, $P_1 = P_2^*$, the payoff from making the transfer is lower than the outside option:

$$\lambda\eta^R + (1-\lambda)\eta^S - (1-\lambda)(1-P_2^*)\lambda\eta^R < \lambda\eta^R + P_2^*(1-\lambda)\eta^S = \omega$$

Thus, the husband chooses $T_1 = 0$ at $P_1 = P_2^*$ and switches to $T_1 = 1$ at some higher P_1 in this interval.

Third, suppose $P_1 \in \left[\frac{P_2^*}{(1-\lambda)(1-P_2^*)+1}, P_2^* \right)$. Denote $\kappa_2^R \equiv \sigma_2^H(h_2^H)$ when P_1 is in this range and $g_1 = 1$. Denote $\kappa_2^S \equiv \sigma_2^H(h_2^H)$ when P_1 is in this range and $g_1 = 0$.

- Given the strategies, the updated reputation is $P_2(P_1|g_1 = 1, e_1 = 1) = P_2(P_1|g_1 = 0, e_1 = 1) = P_2^*$ and $P_2(P_1|g_1 = 1, e_1 = 0) = 0$.
- For the usage choice, the non-expert wife mixes if $-c + \beta\kappa_2^R\lambda\eta^R = 0$. Thus, $\kappa_2^R = \frac{c}{\beta\lambda\eta^R}$. Under this condition, the expert wife strictly prefers to use the purchased good because her continuation payoff is higher.
- For the investment choice, the non-expert wife mixes if $\lambda\eta^R - (1-\lambda)c\sigma_{1,e}^{NE}(h_{1,e}^{NE}) + \beta\kappa_2^R\lambda\eta^R(\lambda + (1-\lambda)\sigma_{1,e}^{NE}(h_{1,e}^{NE})) = \eta^S + \beta\lambda\eta^R\kappa_2^S$. This condition is equivalent to $\kappa_2^S = \frac{\lambda(\eta^R + c) - \eta^S}{\beta\lambda\eta^R}$. The expert wife strictly prefers to buy the risky good when $\eta_1^R = \eta^R$ because $\eta^R + \beta\kappa_2^R(\lambda\eta^R + (1-\lambda)\eta^S) > \eta^S + \beta\kappa_2^S(\lambda\eta^R + (1-\lambda)\eta^S)$. The expert wife strictly prefers to buy the safe good when $\eta_1^R = 0$ because $-c + \beta\kappa_2^R(\lambda\eta^R + (1-\lambda)\eta^S) < \eta^S + \beta\kappa_2^S(\lambda\eta^R + (1-\lambda)\eta^S)$.
- For the husband's strategy, as the updated reputation is always $\leq P_2^*$, the husband needs to only consider the first-stage payoff. The expected first-stage payoff is the same as above:

$$\mathbb{E}[U_1^H(T_1 = 1)|P_1] = \lambda\eta^R + P_1 \frac{1-\lambda}{P_2^*} (\eta^S - (1-P_2^*)\lambda\eta^R)$$

Since the payoff is increasing in P_1 , and it is lower than ω at $P_1 = P_2^*$, it is also lower than ω at all $P_1 < P_2^*$.

Finally, suppose $P_1 < \frac{P_2^*}{(1-\lambda)(1-P_2^*)+1}$. Denote $\kappa_3^S \equiv \sigma_2^H(h_2^H)$ when P_1 is in this range and $g_1 = 0$.

- Given the strategies, the updated reputation is $P_2(P_1|g_1 = 1, e_1 = 1) < P_2^*$, $P_2(P_1|g_1 = 0, e_1 = 1) = P_2^*$ and $P_2(P_1|g_1 = 1, e_1 = 0) = 0$.
- For the usage choice, using the unproductive good cannot increase the reputation enough to reach threshold P_2^* . Therefore, $e_1 = 0$ for both types of wives when $\eta_1 = 0$. Using the productive risky and safe goods is weakly dominant, so $e_1 = 1$ for both types of wives when $\eta_1 \neq 0$.
- For the investment choice, the non-expert wife mixes if $\lambda\eta^R = \eta^S + \beta\lambda\eta^R\kappa_3^S$. This condition is equivalent to $\kappa_3^S = \frac{\lambda\eta^R - \eta^S}{\beta\lambda\eta^R}$. The expert wife strictly prefers to buy the risky good when $\eta_1^R = \eta^R$ because $\eta^R > \eta^S + \beta\kappa_3^S(\lambda\eta^R + (1-\lambda)\eta^S)$. The expert wife strictly prefers to buy the safe good when $\eta_1^R = 0$ because $0 < \eta^S + \beta\kappa_3^S(\lambda\eta^R + (1-\lambda)\eta^S)$.

- For the husband's strategy, as above, as the updated reputation is always $< P_2^*$, the payoff is also lower than ω in this interval.

Combining the four intervals, we conclude that the husband uses a threshold strategy:

$$T_1(P_1) = \begin{cases} 1 & \text{if } P_1 \geq P_1^* \\ 0 & \text{if } P_1 < P_1^* \end{cases}$$

where $P_1^* \in \left(P_2^*, \frac{P_2^*}{(1-\lambda)(1-P_2^*) + P_2^*} \right)$.

□

B Technical Appendix

B.1 Sampling

Enumerators were instructed to enroll households using the “left hand rule”:

1. You will pick a house as a starting point,
2. Proceed such that the house you have picked is on your left.
3. Count 3 houses and stop at the third house. This house will be selected for sampling.
4. You will identify the owners of the household and ask to speak to a husband and wife pair who reside in the household.
5. If they are eligible for the survey, conduct the survey. Otherwise skip to the next step.
6. Once you are finished with the survey, or if the couple is ineligible, continue in the original direction you were walking in.
7. Count three houses, stop at the third house, and repeat steps 4-6.

B.2 Compensation and Prices

Initially, husbands received MWK 300 and women received MWK 200 as baseline compensation for participation in the survey. Women were offered an additional MWK 100 for participating in the signaling activity in the signaling experiment. The hiding prices were MWK 50 (low hiding cost), MWK 100 (intermediate hiding cost) or MWK 150 (high hiding cost). However, enumerators noted during the first month of data collection, that the compensations and prices might be insufficient to incentivize the respondents to thoroughly think about their choices. We thus doubled the compensations given to the respondents for 2/3 of the remaining surveys to allow for geographic variation in the low- and high-compensation versions (in total 28% of surveys had the low compensation and 72% the high compensation). To keep the ratio of prices to compensation constant in the signaling experiment, we also doubled the hiding prices to MWK 100 (low hiding cost), MWK 200 (intermediate hiding cost) or MWK 300 (high hiding cost). In the analysis we express transfers as a percent of total compensation in the transfer experiment and control for baseline compensation fixed-effects in both experiments.

B.3 Defining the Salience Treatment in the Transfer Experiment

Initially, all husbands played the game at the end of the survey, either before or after the MER module (version 1). However, enumerators noted during the first month of data collection (17% of data collected), that the signaling experiment was serving as a large salience treatment itself. We thus moved the transfer at the beginning of the survey in the control arm (version 2) and coded all data collected thus far as assigned to the salience treatment. All results are robust to controlling for version fixed effects.

C Empirical Appendix

C.1 Figures

Figure C.1: Handout to elicit respondent's priors about own and spouse's score

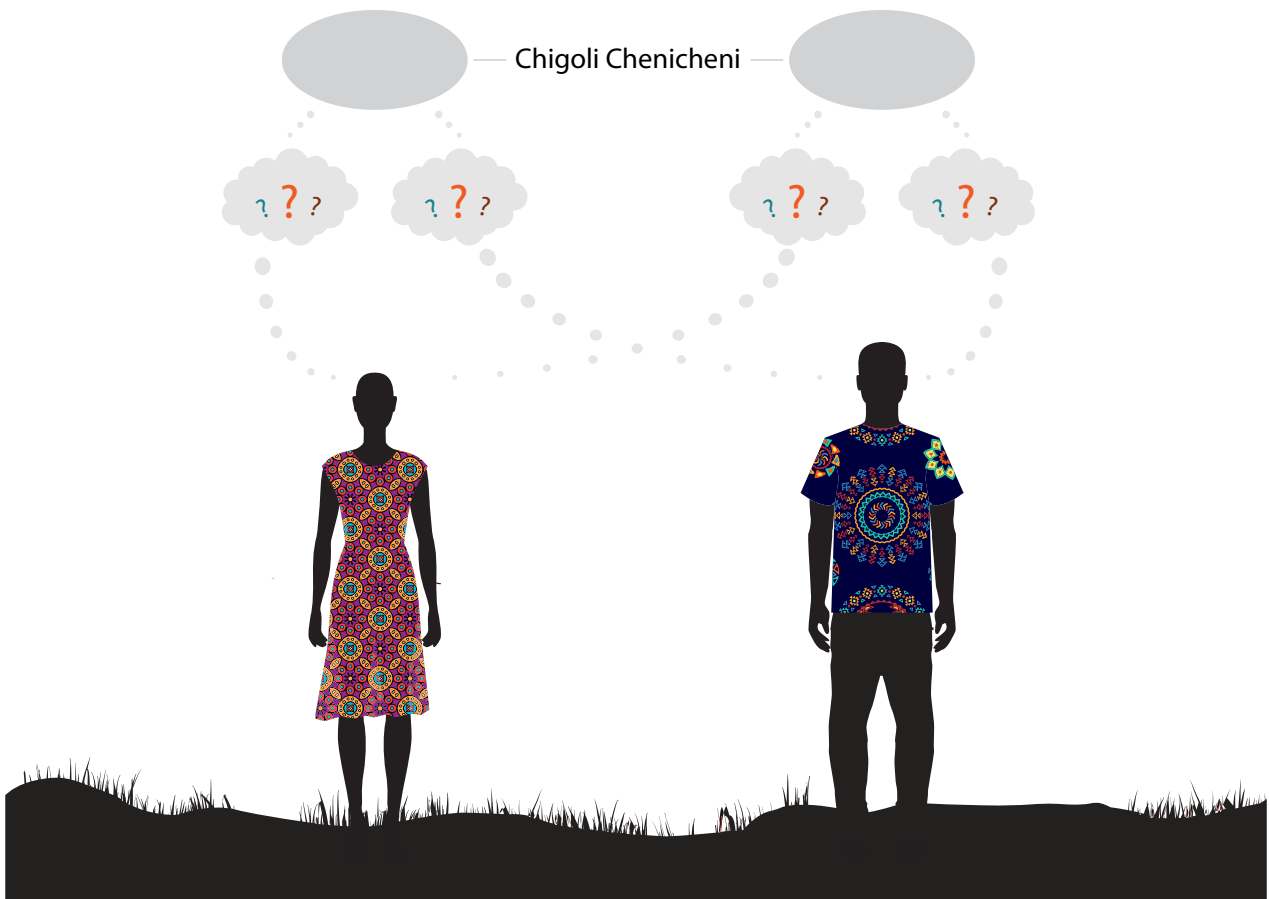
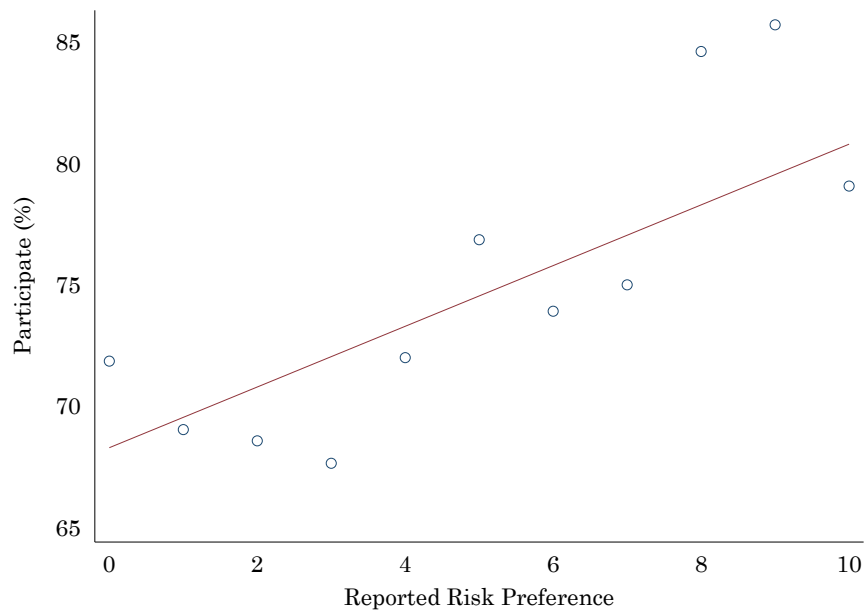


Figure C.2: Percentage of wives participating in the signaling activity for each reported level of risk preference



Notes: The wife’s risk preference was the response to the question “You are buying 10 packets of seed. There are two kind of seeds. One will mature with a low yield, but it is guaranteed that all seeds will mature. The other will mature with a higher yield: You will get 3x as much. However, on average, half of all packets produced never mature. That means you could have all good packets or all bad packets or somewhere in between. Out of the 10 packets you will buy, how many packets of the risky seed will you buy?”

Figure C.3: Total forgone earnings in experiment 2 for each rounded mean score prior

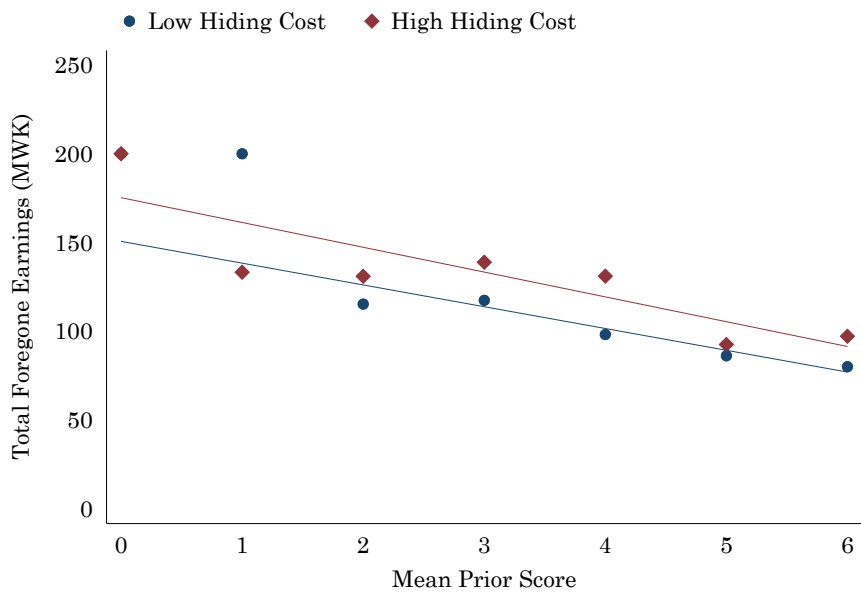


Figure C.4: Low hiding cost effectiveness sticker: airtight crop storage bag

PURDUE
EXTENSION

Matumba a Purdue Improved Crop Storage (PICS)

Vuto:
Tizilombo timaononga zokolola ndipo zotsatira zake zimakhala:

- Kutsika kolite
- Kupunguka kwa kulemera/kuluza weti
- Kugwiritsa ntchito mankhwala ophera tizilombo mochuluka

Matumba a PICS amathandiza:
Matumba a Hermetic triple-layer amateteza zokolola ku tizilombo popanda kugwiritsa ntchito mankhwala.

Zothandiza pa mbewu monga:
Khobwe, Chimanga, Nyemba, Nandolo, Mawere, Mapira, Tirigu, Mtedza, Mpunga, Soya.

Matumba a PICS :

- Amaonjezera phindu/chuma
- Amathandiza kukhala ndi chakudya chokwanira
- Kuthandiza kukhala ndi chakudya cha pamwamba/chakolite yabwino
- Kuthandiza kukhala ndi mbewu za kolite yabwino



English Translation:

The Problem:

Insects damage stored grains, leading to:

- Quality loss
- Weight loss
- Excessive use of chemicals

The PICS Solution:

Hermetic triple-layer bags protect grain from insect damage without using chemicals.

Effective for:

Cowpea, Maize, Beans, Peas, Sorghum, Millett, Wheat, Groundnut, Rice, Soybean

PICS Bags:

- Increase income
- Improve food security
- Maintain food quality
- Maintain seed quality

Figure C.5: High hiding cost effectiveness sticker: children's book

Kuwerengera ana anu ndi chuma cha mtsogolo!

- Luso pakaganizidwe ka ana ang'ono ndi njira yokhayo yofunika yomwe imathandiza ana kudzakhalana ndi tsogolo lopambana m'moyo. Izi zimakhudza kuti adzathe kupitiliza maphunziro awo mpaka ku ma college ndi maluso ena apamwamba.
- Luso pakaganizidwe silachibadwa. Izi zikhoza kukhala choncho chifukwa cha Khama la makolo. Nthawi yoyenera kuthandiza ana ndi luso pakaganizidwe ndi pomwe akadali achichepere kungochokera pomwe abadwa.
- Kafukufuku wambiri wapeza kuti ana amene amakhala okonzekera akadali achichepere amayamba sukulu akudziwa mau ochuluka komanso ndi maluso apamwamba.



English Translation:

- Cognitive skills of young children are an important factor in explaining success later-on in life. They affect the likelihood of acquiring higher education and advanced training.
- Cognitive skills are not fixed. They can be influenced by parental efforts. The most effective period for cognitive skill investment by parents is early on in the life of their children – in fact, from birth.
- Numerous studies have found children who are ready to frequently at a very early age enter school with larger vocabularies and more advanced comprehension skills.

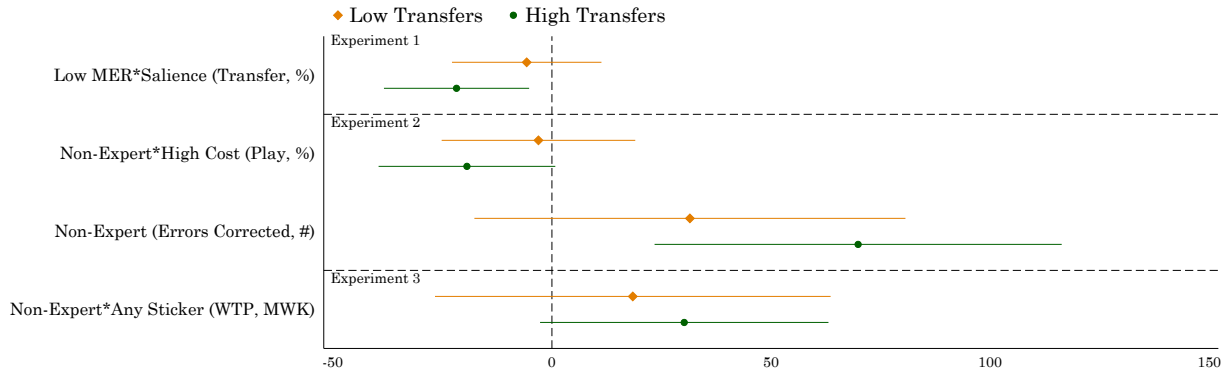
Figure C.6: Donated sticker

Kupezeka ku mabanja akumalawi ndi

Stanford University

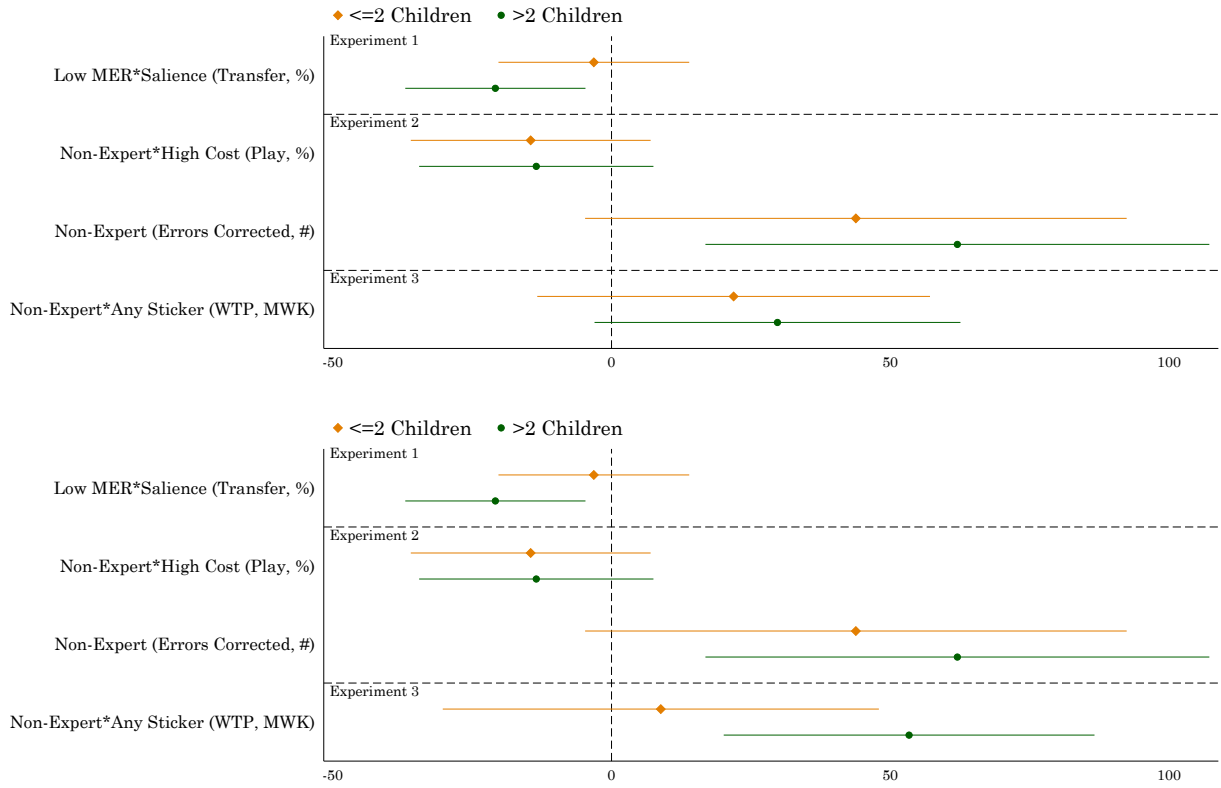
English Translation: *Donated to Malawian families by* Stanford University

Figure C.7: Heterogeneity by discretionary transfer size, using the wife's random-forest predicted expertise in experiment 3



Notes: The graph shows the coefficients and confidence intervals from OLS regressions with Huber-White robust SEs. Low/High Transfers correspond to below/above the median. Rows 1 to 3 control for enumerator and compensation fixed effects (and version fixed effects for the transfer experiment) as well as the wife and the husband's age, education, average income in the last two months, variability of income (whether income is the same in most months or varies a lot), risk preferences, math and raven scores, and years married, number of children and number of household members, and MER index. Controls are as reported by the husband in the transfer and signaling experiment and as reported by the wife in the market experiment. Row 3 controls for enumerator and market fixed effects as well as the wife's age, education, average income in the last two months, risk preferences, math score, as well as the husband's average income in the last two months, years married, and the number of children and household members. Coefficients are presented as percentage point deviations from the control means.

Figure C.8: Heterogeneity by number of children in the household (using wife's second-order math beliefs (top) and random-forest predicted types (bottom))



Notes: The graph shows the coefficients and confidence intervals from OLS regressions with Huber-White robust SEs. Rows 1 to 3 control for enumerator and compensation fixed effects (and version fixed effects for the transfer experiment) as well as the wife and the husband's age, education, average income in the last two months, variability of income (whether income is the same in most months or varies a lot), risk preferences, math and raven scores, and years married, number of children and number of household members, and MER index. Controls are as reported by the husband in the transfer and signaling experiment and as reported by the wife in the market experiment. Row 4 controls for enumerator and market fixed effects as well as the wife's age, education, average income in the last two months, risk preferences, math score, as well as the husband's average income in the last two months, years married, and the number of children and household members. Coefficients are presented as percentage point deviations from the control means.

C.2 Tables

Table C.1: Experiment 1: 50 randomly selected example answers to questions 1) Is your wife ever tempted to buy things advertised at the market? and 2) Has it ever happened that your wife bought something that did not work as advertised?

Tempted	Did not work
Charcoal burner	Soap
Pot	Insecticides that wouldn't work
Clothes	Wrapping paper
Door mat	Non-durable cloth
Charcoal stove	Toy
Rose flower	Pair of trousers
Shoes	Shoes
Not yet but tempted	Piece of cloth poorly sewn on the edges
New dress	Shoes
Soap	Plastic bucket which broke within few days
Medicine from a pharmacy	Clothes
Skirt	Chemical that didn't work
Cooking stove and clothes	Clothes
Snacks for the child but in large quantity	Phone battery
Doll	Skirt
Plates when the goal was to buy a jar	Battery torch which was not working
Trousers for me	Insecticides
Metal plates	Battery torch which could not produce light
Cooking stove	Pesticides that didn't work
Charcoal burner	Torn blouse
Charcoal burner	Battery torch which was not working
Pair of non-durable shoes	Radio with cut wires inside
Dress	Basin
Dress	Cooking stove
Toys	Stolen metal bars which were painted to conceal the rust
Not yet but tempted	Mosquito repellent
Charcoal burner	Torn dress
Charcoal stove	Plastic bucket
Doll	Bucket that leaked
Duvet	Slippers that were not durable
Water treatment solution	Stove
Hats	Expired cooking oil
Cooking stove and pesticides	Chemicals used to kill cockroaches
Kitchen utensils	Headache medicines
Doll for the child	Too tight clothes
Clothes	Non-durable shoes
Mosquito net	Clothes
New drug advertised to help joint pain	Non-durable slippers
Not yet but tempted	Torn trousers
Dress	Used phone (she thought it was new)
Toy	Clothes that lost colour after one wash
Piece of cloth	Too tight skirt
Cooking stove	Container
Basin	Pain killers that did not work
Cooking stove that uses less charcoal	Mosquito pesticide that never even killed ONE mosquito
Shirt for the child	Bucket
Short trousers for me	Shoes in the wrong size (the vendor had told her they would fit anyways)
Toy for her child	Bucket which broke after a few days
Children toys and charcoal burner	Clothes
Cooking stove	Soap

Notes: To create the table, we randomly selected 50 answers to question 1 and 50 answers to question 2 - i.e., the answer choices on the left and on the right do not have to be from the same person. We preferred this to selecting 50 subjects randomly as subjects could answer no to each question - thus, we would provide fewer examples by selecting 50 respondents as opposed to 50 answer choices for each question.

Table C.2: The transfer experiment: Balance, by market expertise reputation (MER) and salience

Variables	Mean (SD)	β_{Salience} (SE)	$\beta_{\text{Low MER}}$ (SE)	$\beta_{\text{Low MER*Salience}}$ (SE)
	(1)	(2)	(3)	(4)
Wife's age	30.37 (8.93)	0.67 (0.64)	-0.64 (1.29)	1.39 (1.60)
Husband's age	35.83 (10.16)	1.31 (0.72)	0.20 (1.33)	0.30 (1.71)
Wife's education (0-16)	5.68 (3.27)	0.02 (0.23)	0.57 (0.51)	-0.56 (0.60)
Husband's education (0-16)	6.77 (3.54)	0.05 (0.25)	0.54 (0.52)	0.50 (0.64)
Wife's quality score (0-6)	4.17 (1.20)	0.02 (0.09)	0.01 (0.17)	0.17 (0.21)
Husband's quality score (0-6)	4.16 (1.25)	-0.01 (0.09)	-0.06 (0.19)	0.02 (0.23)
Wife's raven score (0-12)	4.05 (1.95)	0.10 (0.13)	0.12 (0.28)	-0.13 (0.34)
Husband's raven score (0-12)	4.98 (2.01)	0.32 (0.14)	-0.01 (0.29)	0.16 (0.35)
Wife's math score (0-6)	3.26 (1.66)	-0.04 (0.12)	0.06 (0.25)	-0.06 (0.30)
Husband's math score (0-6)	4.09 (1.47)	0.14 (0.10)	0.08 (0.23)	-0.03 (0.27)
Wife's avg. income last two months (MWK)	4,967.04 (10,458.39)	676.12 (736.36)	-201.09 (1,567.70)	-1,664.66 (1,790.05)
Husband's avg. income last two months (MWK)	29,770.05 (33,075.29)	3,944.77 (2,284.10)	5,572.03 (5,487.73)	-5,463.49 (6,331.62)
Wife's risk preference (0-10)	2.90 (2.44)	0.24 (0.17)	0.32 (0.36)	-0.46 (0.43)
Husband's risk preference (0-10)	4.60 (2.98)	0.02 (0.20)	-0.38 (0.41)	0.66 (0.49)
Years married	9.91 (8.48)	0.30 (0.61)	-0.19 (1.21)	0.56 (1.49)
Number of children	2.63 (1.56)	0.07 (0.11)	-0.21 (0.23)	-0.05 (0.27)
Number of household members	5.02 (1.86)	0.08 (0.13)	-0.17 (0.28)	-0.09 (0.33)
Avg. transfers last two months (MWK)	8,451.97 (11,411.97)	490.47 (823.33)	901.20 (1,766.80)	-2,200.67 (2,027.78)

Notes: The table shows results from OLS regressions with enumerator fixed effects and Huber-White robust SEs. Market Expertise Reputation (MER) defined as before. All MWK values are winsorized at 3 SDs. Wife's and husband's average income as well as transfers as reported by the husband. Regressions control for enumerator fixed effects. No differences are significant after adjusting for false discovery rates (q-values).

Table C.3: Transfer experiment: Effect of reputation salience on amount (%) transferred from the husband to the wife, by MER subcomponent and by MER score

	Index	Purchases	Tempted	Manage	Change	MER ≤ 2	MER=3	MER=4
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Salience	2.143 (1.720)	1.617 (1.691)	1.636 (1.743)	0.841 (1.862)	0.349 (1.667)	-7.569 (4.483)	4.332 (3.081)	1.616 (2.126)
Low MER	0.343 (3.374)	0.402 (3.773)	-2.014 (3.256)	-4.453 (2.728)	-2.406 (5.618)			
Low MER*Salience	-9.184 (4.231)	-8.266 (4.742)	-4.980 (4.043)	-0.660 (3.427)	3.018 (7.032)			
Mean (Control)	68.889	68.823	69.281	70.248	68.920	68.393	65.564	70.768
Observations	1093	1093	1093	1093	1093	186	336	571

Notes: The table shows results from OLS regressions with Huber-White robust SEs. Market Expertise Reputation (MER) is an index that takes the values 0 to 4, depending on how many of the following questions the husband affirmed: i) his wife had never bought anything that did not work as advertised (“Purchases”, 86%), ii) his wife is never tempted to buy advertised goods with uncertain return at the market (“Tempted”, 80%), iii) he believes his wife can manage money received from the husband well compared to other women in the community (“Manage”, 70%), and iv) his wife can do calculations correctly in her head when she requests change in the market (“Math”, 95%). The table shows the effect of the salience treatment for a negative answer to each of the individual MER subcomponents and for the different MER scores. We combine MER scores of 0, 1, and 2 because of small sample sizes: 6 women have an MER of 0 (0.6%), 38 of 1 (3.5%), 142 of 2 (13.0%), 336 of 3 (30.7%) and 571 of 4 (52.2%). All regressions include enumerator, compensation and version fixed effects. Controls include wife and husband’s age, education, average income and transfers in the last two months, variability of income (whether income is the same in most months or varies a lot), risk preferences, math and raven scores, and years married, number of children and number of household members.

Table C.4: Scores and beliefs on the quality quiz, by quiz difficulty

	Easy (N=550)		Hard (N=543)		Diff.
	Mean	SD	Mean	SD	
Sponge	0.898	0.303	0.738	0.440	0.160
Bottle	0.638	0.481	0.580	0.494	0.058
Razor	0.593	0.492	0.394	0.489	0.199
Toothbrush	0.902	0.298	0.661	0.474	0.241
Flour	0.725	0.447	0.529	0.500	0.197
Candle	0.933	0.251	0.737	0.441	0.196
Wife's quality score	4.689	1.042	3.639	1.115	1.050
Husband's quality score	4.709	1.033	3.600	1.212	1.109
Prior quality, wife	4.951	1.134	4.297	1.373	0.654
W about H about W	4.798	1.431	4.355	1.512	0.443
W believes H will update negatively (%)	22.364	41.706	31.492	46.491	-9.128

Two-sided t-tests. "W about H about W" refers to the wife's belief about her husband's belief about her score.

Table C.5: Outcomes in the signaling experiment, including controls

	Whole sample (N=1093)			Participation sample (N=786)			Whole sample (N=1093)	
Panel A: By price and low perceived score								
	Initial score	Participate (%)	Foregone comp.	Initial score	Errors corrected	Hiding fee	Final score	Total forgone
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-Expert	-0.238 (0.130)	-3.715 (4.595)	7.430 (9.190)	-0.358 (0.147)	0.267 (0.108)	27.451 (11.352)	-0.090 (0.158)	28.300 (10.935)
Intermediate Cost	0.126 (0.116)	4.359 (3.784)	-8.718 (7.568)	0.196 (0.130)	-0.170 (0.075)	11.664 (11.359)	0.026 (0.131)	3.095 (10.867)
High Cost	0.082 (0.107)	-0.653 (3.890)	1.306 (7.779)	0.049 (0.126)	-0.241 (0.068)	17.187 (12.635)	-0.192 (0.129)	13.779 (11.064)
Non-Expert*Intermediate Cost	0.064 (0.186)	-11.955 (6.883)	23.910 (13.767)	0.027 (0.210)	-0.062 (0.144)	14.380 (21.786)	-0.035 (0.219)	21.223 (17.725)
Non-Expert*High Cost	0.184 (0.174)	-9.744 (6.533)	19.488 (13.066)	0.225 (0.207)	-0.237 (0.127)	-16.052 (22.039)	-0.012 (0.217)	-3.386 (17.374)
Mean (Low Cost & Expert)	4.149	76.349	47.303	4.196	0.462	46.196	4.658	82.573
P-value (Expert vs. Non-Expert, Intermediate Cost)	0.183	0.002	0.002	0.026	0.029	0.023	0.407	0.000
P-value (Expert vs. Non-Expert, High Cost)	0.647	0.004	0.004	0.366	0.663	0.556	0.493	0.073
Panel B: By price and difficulty of the quiz								
	Initial score	Participate (%)	Forgone comp.	Initial score	Errors corrected	Hiding fee	Final score	Total forgone
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Harder Version	-1.174 (0.109)	5.798 (4.330)	-11.595 (8.660)	-1.136 (0.126)	0.307 (0.101)	30.726 (10.635)	-0.829 (0.141)	12.962 (10.501)
Intermediate Cost	0.061 (0.103)	4.106 (4.534)	-8.211 (9.068)	0.063 (0.120)	-0.210 (0.071)	-2.061 (10.016)	-0.147 (0.124)	-8.200 (10.769)
High Cost	0.066 (0.102)	-3.149 (4.575)	6.297 (9.151)	0.084 (0.121)	-0.219 (0.072)	8.663 (13.158)	-0.135 (0.125)	8.582 (11.650)
Harder Version*Intermediate Cost	0.160 (0.159)	-9.818 (6.502)	19.636 (13.005)	0.204 (0.183)	0.069 (0.130)	42.513 (19.576)	0.272 (0.200)	43.896 (17.447)
Harder Version*High Cost	0.213 (0.152)	-4.101 (6.317)	8.202 (12.633)	0.093 (0.178)	-0.200 (0.123)	5.820 (21.384)	-0.107 (0.192)	10.680 (17.536)
Mean (Low Cost & Easier Version)	4.594	71.875	56.250	4.601	0.406	40.580	5.007	85.417
P-value (Easier vs. Harder Version, Intermediate Cost)	0.000	0.402	0.402	0.000	0.000	0.000	0.000	0.000
P-value (Easier vs. Harder Version, High Cost)	0.000	0.711	0.711	0.000	0.094	0.043	0.000	0.088

Notes: The table shows results from OLS regressions with Huber-White robust SEs. Low Perceived Score is an indicator that takes the value 1 if the wife reports an average weighted score that is lower than 5 (39% of women). The weighted average is calculated as the average across all scores, weighted by the probability assigned to each score by the woman (each woman placed 10 beans on the 7 different scores). Foregone comp. is the amount of money wives left on the table by opting out of the game. All regressions include enumerator and compensation fixed effects. The p-value is the p-value from a Wald test comparing outcomes between low perceived score and high perceived score wives or between the hard and the easy version when the price of hiding is intermediate or high. Controls include wife and husband's age, education, average income in the last two months, variability of income (whether income is the same in most months or varies a lot), risk preferences, math, and raven scores, and years married, number of children and number of household members, and the wife's MER.

Table C.6: Outcomes in the signaling experiment, by correlates of expertise

	Whole sample (N=1093)			Participation sample (N=786)			Whole sample (N=1093)	
Panel A: By price and wife's education								
	Initial score	Participate (%)	Foregone comp.	Initial score	# Errors corrected	Hiding fee	Final score	Total forgone
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Low Education	-0.268 (0.126)	-9.587 (4.480)	19.174 (8.959)	-0.182 (0.148)	-0.011 (0.101)	-2.412 (10.282)	-0.193 (0.155)	13.592 (10.341)
Intermediate Cost	0.248 (0.119)	0.773 (3.972)	-1.547 (7.945)	0.268 (0.133)	-0.168 (0.087)	21.314 (12.952)	0.099 (0.134)	15.613 (11.783)
High Cost	0.140 (0.111)	-3.823 (4.015)	7.646 (8.030)	0.114 (0.127)	-0.348 (0.078)	6.787 (13.566)	-0.234 (0.132)	10.435 (11.820)
Low Education*Intermediate Cost	-0.224 (0.180)	-3.552 (6.647)	7.105 (13.293)	-0.139 (0.204)	-0.050 (0.131)	-9.367 (19.339)	-0.189 (0.209)	-4.305 (17.177)
Low Education*High Cost	0.014 (0.171)	-3.162 (6.387)	6.324 (12.774)	0.028 (0.205)	0.063 (0.119)	12.949 (21.212)	0.091 (0.210)	11.080 (17.072)
Mean (Low Cost & High Education)	4.168	79.703	40.594	4.130	0.553	55.280	4.683	84.653
P-value (High vs. Low Education, Intermediate Cost)	0.000	0.008	0.008	0.024	0.457	0.472	0.007	0.500
P-value (High vs. Low Education, High Cost)	0.029	0.005	0.005	0.279	0.413	0.570	0.477	0.071
Panel B: By price and wife's self-esteem								
	Initial score	Participate (%)	Foregone comp.	Initial score	# Errors corrected	Hiding fee	Final score	Total forgone
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Low Self-Esteem	0.996 (0.113)	-4.444 (5.487)	8.888 (10.975)	0.985 (0.129)	-0.095 (0.103)	-9.165 (10.850)	0.890 (0.126)	0.652 (11.675)
Intermediate Cost	0.139 (0.101)	1.173 (3.579)	-2.346 (7.159)	0.219 (0.114)	-0.176 (0.077)	22.273 (11.411)	0.042 (0.120)	15.288 (10.233)
High Cost	0.086 (0.097)	-2.988 (3.613)	5.975 (7.225)	0.065 (0.112)	-0.318 (0.070)	17.728 (12.439)	-0.253 (0.119)	16.121 (10.454)
Low Self-Esteem*Intermediate Cost	0.020 (0.174)	-7.267 (8.169)	14.534 (16.338)	0.020 (0.192)	-0.052 (0.134)	-21.326 (20.130)	-0.032 (0.184)	-7.516 (18.810)
Low Self-Esteem*High Cost	-0.059 (0.160)	-6.734 (7.489)	13.468 (14.978)	0.047 (0.186)	0.009 (0.122)	-18.877 (21.334)	0.056 (0.188)	-1.299 (18.171)
Mean (Low Cost & High Self-Esteem)	3.830	76.471	47.059	3.855	0.570	57.014	4.425	90.657
P-value (High vs. Low Self-Esteem, Intermediate Cost)	0.000	0.055	0.055	0.000	0.082	0.071	0.000	0.641
P-value (High vs. Low Self-Esteem, High Cost)	0.000	0.030	0.030	0.000	0.185	0.124	0.000	0.963

Notes: The table shows results from OLS regressions with Huber-White robust SEs. Low Education is an indicator that takes the value 1 if the wife has fewer than 6 years of education (the median, 46% of women). Low Self-Esteem is an indicator that is 1 if the wife's perceived quality quiz score is lower than her actual score (26% of women). Foregone comp. is the amount of money wives left on the table by opting out of the game. All regressions include enumerator and compensation fixed effects. The p-value is the p-value from a Wald test comparing outcomes between wives with low or high education or between wives with low or high self-esteem when the hiding cost is high.

Table C.7: The signaling experiment: Balance, by low expertise (NE) and hiding cost (intermediate IC or high HC)

Variables	Mean (SD)	β_{NE} (SE)	β_{IC} (SE)	β_{HC} (SE)	$\beta_{NE \times IC}$ (SE)	$\beta_{NE \times HC}$ (SE)
(1)	(2)	(3)	(4)	(5)	(6)	
Wife's age	30.37 (8.93)	-0.88 (0.95)	0.47 (0.89)	0.74 (0.79)	0.38 (1.42)	1.20 (1.31)
Husband's age	35.83 (10.16)	-1.30 (1.09)	-0.06 (1.00)	1.08 (0.93)	1.82 (1.60)	0.13 (1.49)
Wife's education (0-16)	5.68 (3.27)	-0.12 (0.34)	0.23 (0.33)	0.17 (0.31)	-0.49 (0.51)	-0.69 (0.47)
Husband's education (0-16)	6.77 (3.54)	0.56 (0.38)	0.01 (0.35)	-0.21 (0.34)	-0.75 (0.55)	-0.77 (0.52)
Wife's quality score (0-6)	4.17 (1.20)	-0.25 (0.13)	0.17 (0.12)	0.11 (0.11)	-0.00 (0.18)	0.12 (0.18)
Husband's quality score (0-6)	4.16 (1.25)	-0.22 (0.14)	0.01 (0.12)	-0.14 (0.12)	0.06 (0.20)	-0.08 (0.19)
Wife's raven score (0-12)	4.05 (1.95)	0.01 (0.19)	0.10 (0.19)	0.06 (0.18)	-0.18 (0.28)	0.06 (0.27)
Husband's raven score (0-12)	4.98 (2.01)	-0.48 (0.20)	0.04 (0.20)	0.12 (0.19)	0.47 (0.31)	0.13 (0.29)
Wife's math score (0-6)	3.26 (1.66)	-0.16 (0.18)	0.25 (0.16)	0.28 (0.16)	-0.33 (0.25)	-0.33 (0.24)
Husband's math score (0-6)	4.09 (1.47)	0.10 (0.16)	0.03 (0.15)	-0.04 (0.13)	-0.06 (0.23)	-0.11 (0.21)
Wife's avg. income last two months (MWK)	10,659.82 (17,556.52)	-604.51 (1,871.15)	1,506.05 (1,821.95)	519.21 (1,657.60)	-2,523.94 (2,664.53)	-1,329.13 (2,505.84)
Husband's avg. income last two months (MWK)	15,506.03 (23,030.80)	2,927.65 (2,478.82)	2,268.78 (2,310.57)	511.50 (2,052.91)	-7,621.71 (3,553.41)	-2,995.13 (3,409.21)
Wife's risk preference (0-10)	2.90 (2.44)	-0.13 (0.26)	0.37 (0.24)	0.23 (0.23)	-0.05 (0.37)	0.19 (0.36)
Husband's risk preference (0-10)	4.60 (2.98)	-0.30 (0.32)	-0.33 (0.29)	-0.07 (0.27)	0.56 (0.45)	0.25 (0.43)
Years married	9.91 (8.48)	-0.35 (0.89)	0.24 (0.83)	0.70 (0.78)	-0.36 (1.31)	0.28 (1.24)
Number of children	2.63 (1.56)	-0.21 (0.16)	0.05 (0.16)	0.12 (0.15)	0.02 (0.24)	-0.02 (0.22)
Number of household members	5.02 (1.86)	-0.28 (0.20)	0.04 (0.19)	0.13 (0.18)	0.01 (0.28)	0.03 (0.27)
Avg. transfers last two months (MWK)	4,911.73 (8,097.11)	-519.54 (834.24)	507.42 (774.20)	419.27 (761.49)	-647.90 (1,202.14)	-780.58 (1,144.63)
Market Expertise Reputation Score	3.31 (0.86)	-0.15 (0.10)	-0.01 (0.08)	0.10 (0.08)	0.20 (0.14)	0.02 (0.13)

Notes: The table shows results from OLS regressions with enumerator fixed effects and Huber-White robust SEs. Non-Expert defined as before. All MWK values are winsorized at 3 SDs. Wife's and husband's average income as well as transfers as reported by the wife. The regressions control for enumerator and compensation fixed-effects. No differences are significant after adjusting for false discovery rates (q-values).

Table C.8: The signaling experiment: Balance, by hard version (HV) and hiding cost (intermediate IC or high HC)

Variables	Mean (SD)	β_{HV} (SE)	β_{IC} (SE)	β_{HC} (SE)	$\beta_{HV \times IC}$ (SE)	$\beta_{HV \times HC}$ (SE)
(1)	(2)	(3)	(4)	(5)	(6)	
Wife's age	30.37 (8.93)	1.06 (0.92)	1.42 (0.98)	1.43 (0.86)	-1.74 (1.39)	-0.52 (1.26)
Husband's age	35.83 (10.16)	1.24 (1.06)	1.21 (1.09)	2.14 (1.01)	-1.24 (1.57)	-2.20 (1.45)
Wife's education (0-16)	5.68 (3.27)	0.16 (0.34)	0.33 (0.35)	0.30 (0.33)	-0.62 (0.51)	-0.84 (0.47)
Husband's education (0-16)	6.77 (3.54)	-0.42 (0.38)	-0.69 (0.36)	-0.40 (0.36)	0.88 (0.55)	-0.17 (0.51)
Wife's quality score (0-6)	4.17 (1.20)	-1.12 (0.11)	0.12 (0.10)	0.10 (0.10)	0.08 (0.16)	0.15 (0.15)
Husband's quality score (0-6)	4.16 (1.25)	-1.17 (0.12)	-0.08 (0.11)	-0.17 (0.11)	0.22 (0.17)	0.03 (0.17)
Wife's raven score (0-12)	4.05 (1.95)	0.29 (0.19)	0.11 (0.19)	0.22 (0.19)	-0.18 (0.28)	-0.27 (0.27)
Husband's raven score (0-12)	4.98 (2.01)	0.04 (0.20)	0.17 (0.21)	0.32 (0.20)	0.06 (0.31)	-0.36 (0.29)
Wife's math score (0-6)	3.26 (1.66)	0.16 (0.18)	0.15 (0.17)	0.34 (0.18)	-0.09 (0.25)	-0.43 (0.25)
Husband's math score (0-6)	4.09 (1.47)	0.10 (0.15)	0.05 (0.16)	0.03 (0.15)	-0.08 (0.23)	-0.22 (0.21)
Wife's avg. income last two months (MWK)	10,659.82 (17,556.52)	1,538.85 (1,838.89)	2,134.64 (1,966.44)	279.93 (1,718.28)	-3,429.05 (2,730.86)	-777.95 (2,494.78)
Husband's avg. income last two months (MWK)	15,506.03 (23,030.80)	2,580.88 (2,386.19)	1,219.83 (2,433.71)	-116.41 (2,200.71)	-3,829.94 (3,490.23)	-958.75 (3,316.66)
Wife's risk preference (0-10)	2.90 (2.44)	0.21 (0.24)	0.59 (0.26)	0.36 (0.25)	-0.51 (0.36)	-0.13 (0.35)
Husband's risk preference (0-10)	4.60 (2.98)	-0.02 (0.30)	-0.13 (0.31)	-0.06 (0.29)	0.03 (0.45)	0.14 (0.42)
Years married	9.91 (8.48)	0.97 (0.86)	1.31 (0.93)	1.54 (0.87)	-2.53 (1.28)	-1.47 (1.21)
Number of children	2.63 (1.56)	-0.10 (0.16)	0.03 (0.17)	0.05 (0.16)	0.03 (0.24)	0.09 (0.22)
Number of household members	5.02 (1.86)	-0.06 (0.20)	0.07 (0.21)	0.08 (0.19)	-0.08 (0.29)	0.09 (0.27)
Avg. transfers last two months (MWK)	4,911.73 (8,097.11)	759.54 (823.87)	1,122.84 (833.50)	146.72 (764.26)	-1,848.01 (1,192.98)	-221.20 (1,146.98)
Market Expertise Reputation Score	3.31 (0.86)	-0.25 (0.09)	-0.12 (0.09)	0.01 (0.08)	0.37 (0.13)	0.20 (0.12)

Notes: The table shows results from OLS regressions with enumerator fixed effects and Huber-White robust SEs. All MWK values are winsorized at 3 SDs. Wife's and husband's average income as well as transfers as reported by the wife. The regressions control for enumerator and compensation fixed-effects. No differences are significant after adjusting for false discovery rates (q-values).

Table C.9: Couple characteristics, market experiment

Variable	Obs	Mean	Std. Dev.
Years married	675	9.58	7.87
Number of children	675	2.49	1.59
Age	675	30.47	8.53
Education	674	7.25	3.18
Wife's avg. income last two months (MWK)	675	15117.49	25907.76
Husband's avg. income last two months (MWK)	675	20396.84	31040.83
Avg. transfers (H to W) last two months (MWK)	675	10292.88	14735.31

Notes: Kwacha values are winsorized at 3 SDs.

Table C.10: Outcomes in the signaling experiment, by alternative measures of expertise

	Whole sample (N=1093)			Participation sample (N=786)			Whole sample (N=1093)	
Panel A: By price and low score								
	Initial score	Participate (%)	Foregone comp.	Initial score	# Errors corrected	Hiding fee	Final score	Total forgone
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-Expert	-2.148 (0.075)	-3.089 (4.878)	6.178 (9.756)	-2.122 (0.089)	0.413 (0.132)	39.013 (13.209)	-1.709 (0.152)	34.610 (12.034)
Intermediate Cost	0.065 (0.066)	0.056 (3.853)	-0.113 (7.707)	0.104 (0.074)	-0.142 (0.059)	12.511 (9.136)	-0.039 (0.081)	8.518 (9.117)
High Cost	0.031 (0.061)	-5.866 (3.757)	11.733 (7.514)	0.014 (0.071)	-0.232 (0.054)	10.791 (10.063)	-0.218 (0.079)	16.502 (9.167)
Non-Expert*Intermediate Cost	0.064 (0.113)	-2.756 (7.240)	5.513 (14.480)	0.126 (0.130)	-0.108 (0.174)	25.582 (26.068)	0.019 (0.203)	22.291 (21.216)
Non-Expert*High Cost	0.050 (0.105)	1.377 (7.115)	-2.754 (14.230)	0.070 (0.127)	-0.268 (0.158)	12.302 (27.956)	-0.197 (0.194)	3.088 (21.446)
Mean (Low Cost & Expert)	4.738	75.781	48.438	4.727	0.418	41.753	5.144	80.078
P-value (Expert vs. Non-Expert, Intermediate Cost)	0.000	0.276	0.276	0.000	0.006	0.004	0.000	0.001
P-value (Expert vs. Non-Expert, High Cost)	0.000	0.743	0.743	0.000	0.085	0.036	0.000	0.032
Panel B: By price and accuracy of beliefs about score								
	Initial score	Participate (%)	Foregone comp.	Initial score	# Errors corrected	Hiding fee	Final score	Total forgone
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Inaccurate Beliefs	-1.294 (0.115)	-2.292 (4.545)	4.584 (9.090)	-1.298 (0.130)	0.081 (0.112)	9.869 (11.195)	-1.217 (0.149)	10.307 (10.880)
Intermediate Cost	-0.033 (0.091)	4.031 (4.018)	-8.063 (8.035)	0.052 (0.104)	-0.162 (0.072)	19.869 (11.152)	-0.110 (0.099)	8.718 (10.611)
High Cost	-0.073 (0.086)	-4.892 (4.083)	9.784 (8.166)	0.013 (0.101)	-0.331 (0.063)	1.267 (10.819)	-0.318 (0.102)	7.073 (9.834)
Inaccurate Beliefs*Intermediate Cost	0.474 (0.177)	-11.432 (6.736)	22.865 (13.472)	0.360 (0.197)	-0.062 (0.144)	-4.751 (21.167)	0.298 (0.211)	11.673 (18.044)
Inaccurate Beliefs*High Cost	0.521 (0.166)	-1.301 (6.519)	2.602 (13.037)	0.283 (0.189)	0.026 (0.131)	28.300 (22.920)	0.308 (0.207)	22.132 (18.269)
Mean (Low Cost & Accurate Beliefs)	4.577	76.577	46.847	4.576	0.529	52.941	5.106	87.387
P-value (High vs. Low Accuracy, Intermediate Cost)	0.000	0.006	0.006	0.000	0.828	0.777	0.000	0.128
P-value (High vs. Low Accuracy, High Cost)	0.000	0.442	0.442	0.000	0.120	0.057	0.000	0.028

Notes: The table shows results from OLS regressions with Huber-White robust SEs. Non-Expert is an indicator that takes the value 1 if the wife has a quality score that is lower than 4 (the median, 28% of women). Inaccurate beliefs is an indicator that is 1 if the absolute distance between the wife's belief about her quality score and her actual quality score is larger than 1 (the median, 40% of women). Foregone comp. is the amount of money wives left on the table by opting out of the game. All regressions include enumerator and compensation fixed effects. The p-value is the p-value from a Wald test comparing outcomes between Non-Expert and Expert wives or between wives with accurate or inaccurate beliefs when the hiding cost is high.

Table C.11: The market experiment: Balance, by expertise (NE=non-expert wife) and sticker treatments

Variables	Mean (SD)	β_{NE} (SE)	$\beta_{Donated}$ (SE)	$\beta_{D.*NE}$ (SE)	$\beta_{Effectiveness}$ (SE)	$\beta_{Eff.*NE}$ (SE)	$\beta_{D.\&Eff.}$ (SE)	$\beta_{(D.\&Eff.*)*NE}$ (SE)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Age	30.47 (8.53)	1.25 (1.36)	0.37 (1.16)	-1.43 (1.80)	0.77 (1.20)	-0.30 (1.92)	0.81 (1.21)	-1.60 (1.94)
Education	7.25 (3.18)	-1.39 (0.52)	0.39 (0.42)	-0.26 (0.67)	0.14 (0.41)	-0.71 (0.71)	-0.43 (0.49)	0.25 (0.73)
Math Score	3.62 (1.48)	-0.74 (0.23)	-0.10 (0.20)	0.01 (0.31)	0.02 (0.20)	-0.14 (0.32)	-0.17 (0.21)	-0.11 (0.33)
Wife's avg. income last two months (MWK)	15,117.49 (25,907.76)	-3,185.91 (4,333.25)	2,230.19 (4,115.68)	-988.70 (6,076.41)	-3,013.56 (3,853.76)	2,558.45 (6,116.96)	-5,539.24 (3,384.75)	-577.60 (5,219.28)
Husband's avg. income last two months (MWK)	20,396.84 (31,040.83)	-6,951.45 (5,149.33)	-2,043.04 (4,821.72)	-1,299.85 (6,880.30)	-6,685.62 (4,495.60)	2,291.62 (6,909.47)	-6,089.95 (4,589.39)	2,605.20 (7,040.73)
Risk Preferences	3.56 (2.70)	-0.54 (0.36)	0.11 (0.40)	0.10 (0.53)	0.48 (0.42)	-0.47 (0.54)	0.30 (0.39)	-0.05 (0.54)
Years married	9.58 (7.87)	2.06 (1.07)	0.48 (1.01)	-1.98 (1.53)	2.00 (1.12)	-2.70 (1.73)	1.50 (1.11)	-1.25 (1.75)
Number of children	2.49 (1.59)	0.18 (0.22)	-0.11 (0.20)	-0.13 (0.30)	0.53 (0.29)	-0.68 (0.40)	0.27 (0.22)	-0.49 (0.32)
Household members	4.92 (1.95)	0.31 (0.30)	-0.03 (0.27)	-0.36 (0.39)	0.70 (0.34)	-0.98 (0.48)	0.27 (0.27)	-0.50 (0.41)
Avg. transfers (H to W) last two months (MWK)	10,292.88 (14,735.31)	-3,265.25 (2,332.99)	748.86 (2,445.84)	-1,516.36 (3,312.62)	-3,908.02 (1,899.48)	4,838.72 (3,159.14)	-2,164.09 (2,091.75)	-713.67 (3,073.95)

Notes: The table shows results from OLS regressions with enumerator fixed effects and Huber-White robust SEs. All MWK values are winsorized at 3 SDs. Non-Expert defined as before. Wife's and husband's average income as well as transfers are reported by the wife, the agent of the market experiment. The regressions control for enumerator fixed effects. No differences are significant after adjusting for false discovery rates (q-values).

