

Do Indonesian Consumers Value Organic Rice?

Evidence from an Incentive-Compatible Willingness-to-Pay Experiment

With a rising awareness of the adverse environmental and health effects that come along with conventional farming, the Indonesian Government and various non-governmental organizations have started to promote organic farming in Indonesia. Most of the efforts concentrate on the supply side, i.e. train farmers in organic production practices such as the utilization of organic fertilizer and organic pesticides. But are local consumers prepared to adopt organic products? The knowledge of organic products and the awareness of their potentially positive effects on health and the environment seem to be still at a very low level among consumers. IndORGANIC, a German-Indonesian collaborative research project explored consumers' willingness-to-pay for organic products in order to make an assessment of the market potential and to formulate recommendations how this potential can be further developed. This policy brief summarizes the main findings from this study.



Topics

- Willingness-to-pay for certified organic rice
- Factors influencing demand for organic products

IndORGANIC

IndORGANIC is a German Indonesian interdisciplinary research project that aims to investigate the potential of organic farming in Indonesia in general and in Java more specifically. The project is funded by the German Federal Ministry of Education and Research and based at the University of Passau, Germany. IndORGANIC cooperates with three institutions in Indonesia, the Universitas Atma Jaya in Yogyakarta (UAJY), the Institut Pertanian Bogor (IPB) and Alliance Organic Indonesia (AOI). AOI is an umbrella organization for organic agriculture in Indonesia.



An Incentive-Compatible Willingness-to-Pay Experiment

The experiment was implemented in urban and semi-urban areas in and around Yogyakarta city. The consumers' willingness-to-pay (WTP) has been 'elicited' through a variant of the Becker-DeGroot-Marschak (BDM) method which confronts participants with a real purchase decision as they are invited to submit a price bid for 1 kg of certified organic rice. Only those participants who bid an equal or higher price than a randomly drawn price get the rice at the cost of the drawn price, thereby providing an incentive for consumers to make a bid that corresponds to their true preference for the product. Box 2 provides a graphical example using dragon fruits instead of rice to illustrate the experimental procedure. Moreover, participants were randomly assigned to either a treatment or to the control group. There were two different treatment groups. One treatment group was provided with information on health benefits of organic consumption, whereas another treatment group was informed about the environmental benefits of organic consumption. For this purpose, both treatment groups were exposed to a short video. The control group in contrast was only briefly introduced to the basic principles of organic farming but was not shown a video. The hypothesis was that providing participants with information about the benefits of organic consumption could increase the WTP of respondents. The experiment used a local rice variety. The authenticity of the organic rice was proven to the respondents with the national certificate 'Organik Indonesia'.

Results

Willingness to Pay for Organic Rice

Participants of the experiment were willing to pay on average a price of IDR 13,771 for 1 kg of certified organic rice. This compares to a market price for 1 kg of conventional rice of IDR 11,475, i.e. organic rice gets a price premium of about 20%. 66% of the study participants submitted bids above or equally to the randomly drawn price and hence purchased the rice. The outcomes by treatment groups are summarized in Figure 1. Comparing the WTP among different treatment groups shows a higher WTP for both treatment groups compared to the control group. However, the difference is not statistically significant.

Asking respondents what they perceive to be the benefits of organic rice, almost 80% of respondents state that they perceive organic food to be healthier, regardless of their treatment group. 58% of respondents report to have bought organic rice at least once before. Among those, the WTP is on average IDR 1,693 (13%) higher than of respondents who never bought organic rice before. This difference is significantly different (at the 1%-level). This might be a pure selection effect, i.e. consumers, who bought it before, did so because they have a higher preference for organic rice. Or it might be an experience effect, i.e. consumers who purchased organic rice before are better informed about the health benefits.

Figure 1. Willingness to pay in IDR by treatment group

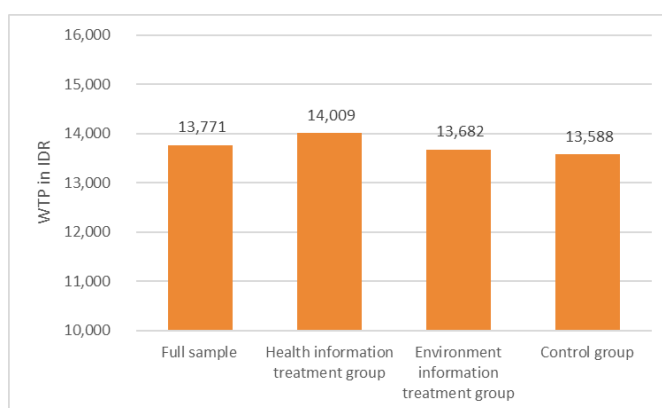


Figure 2 shows the ‘demand curve’, i.e. the share of respondents that would buy organic rice given a certain market price. As expected, this share is the lower the higher the market price. The actual market price for certified organic rice directly purchased from the farmer lies at IDR 15,000 per kg. A price of IDR 15,000 would result in an uptake rate of 44% among the respondents of this study. Market prices for certified organic rice purchased from the supermarket are at least IDR 25,000 per kg, which only one person in this study offered. This would imply an uptake rate below 1%. An uptake rate of 80% would require that the price of organic rice falls below IDR 11,000. Since the WTP does not just depend on how much someone values the product but also how much he or is able to pay for the product, it is also not surprising to find that the WTP increases with the respondents’ households’ income level. Respondents were asked to group themselves into three categories, i.e. a household income of below IDR 2,000,000, a household income between IDR 2,000,000 and 5,000,000, or a household income above IDR 5,000,000. A higher household income level increases respondents’ WTP by 8 to 16% on average.



The Becker-DeGroot-Marschak Approach

In contrast to simple survey questions where the stated WTP remains without consequences for the respondent, the BDM approach incentivizes respondents to report their true WTP as consumers have to buy the product if their bid is equal to or higher than the drawn price. Accordingly, respondents offer higher prices the more they value the certified organic rice (and the more they are able to pay). Furthermore, the estimated WTP is more flexible compared to survey questions, as no fixed categories are used. Eventually, this yields more precise data which allows to draw a more detailed demand curve.



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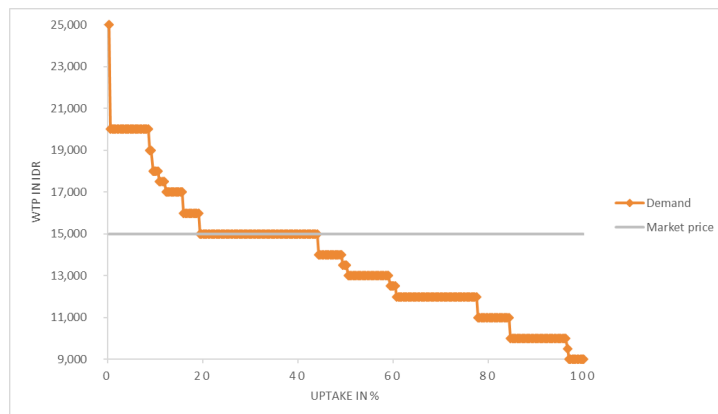
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Figure 2. Demand Curve



Key Messages and Policy Recommendations

- People are on average willing to pay a premium of 20% for certified organic rice compared to the price they usually pay for conventional rice.
- However, the estimated WTP is relatively low compared to the actual market price of organic rice. Not even half of the respondents would be willing to purchase organic rice at the actual market price level of IDR 15,000.
- This uptake rate decreases further considerably for higher market prices, which are for example prevailing in supermarkets.

Based on these findings, several policy interventions to increase the demand for organic rice could be tested. The most obvious might be price subsidies, yet this might not be sustainable and may harm producers of conventional rice. Although our information treatments were not effective in the experimental setting, it is very likely that awareness of the potential benefits is an issue, especially, because those who have some knowledge about organic products *do* highlight potential health benefits. Possibly the videos used in the experiment were not detailed and informative enough, so that longer and better conceptualized videos would have larger effects. Many respondents did also not follow the videos very carefully, so a calmer setting might be helpful too. Yet, there definitely seems to be less awareness for the environmental benefits. Hence, future awareness campaigns could aim to raise more attention for these aspects.