Abstract

The markets for organic products are emerging as an alternative to health conscious consumers in the world. However, the purchase of organic vegetables among urban households, remains at minimum levels. Moreover, few studies have attempted to evaluate the factors that affect perception of sustainable agriculture models for organic vegetables among urban households. Furthermore, the specific impact of perception of “Save and Grow” model (SGM) on the WTP has not been widely evaluated by researchers. Therefore, we evaluated the determinants of adopting SGM for organic vegetables among consumers in Nairobi. Secondly, we also assessed the impact of SGM on WTP for organic vegetables among consumers in Nairobi. The survey collected data from 306 consumers in Nairobi, Kenya. We selected the consumers based on a systematic random sampling approach. This involved sampling every 5th consumer at the exit of the retail outlets. We used a pretested questionnaire to collect data at exit points of the main organic outlets in Nairobi. Subsequently, we analysed the data using a propensity score matching. The results suggest a significant relationship between perception of SGM and health, gender, employment status, education level, price and labeling. Moreover, the SGM had a significant impact on WTP. We concluded that SGM is an avenue for transitioning from conventional to organic products markets. Policy focus should on up scaling the SGM for accelerated on embracing of organic products.

Methodology

A purposive selection of organic store outlets in Nairobi

We described the SGM model to the respondents.

We interviewed every 5th shopper at the exit of the organic store

The data was subsequently analysed using a propensity score matching (PSM)

PSM preferred to check endogeneity and since the study was an observational study

Table 1: Determinants of adoption of solid organic vegetables in Nairobi, Kenya

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sample</th>
<th>Treated</th>
<th>Controls</th>
<th>Difference</th>
<th>S.E.</th>
<th>t-stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>0.45</td>
<td>0.45</td>
<td>0.40</td>
<td>0.04</td>
<td>0.04</td>
<td>1.94***</td>
</tr>
<tr>
<td>Employment</td>
<td>0.48</td>
<td>0.11</td>
<td>0.36</td>
<td>0.05</td>
<td>0.05</td>
<td>6.26***</td>
</tr>
<tr>
<td>Education level</td>
<td>0.45</td>
<td>0.06</td>
<td>0.40</td>
<td>0.04</td>
<td>0.04</td>
<td>6.14***</td>
</tr>
<tr>
<td>Household size</td>
<td>0.45</td>
<td>0.14</td>
<td>0.31</td>
<td>0.06</td>
<td>0.06</td>
<td>3.90***</td>
</tr>
</tbody>
</table>

• Probit regression: Y = a + bX + ε
• Y, is unobservable but is reflected by the choice of (individuals, where
• Y* = 1 if yes and Y* = 0 if no
• X is a vector of independent variables, while b is coefficient and ε is the disturbance or error term
• Propensity score given by: P(x) = Pr{D=1|x} = E Di(x)
• Where D = {0,1} represent decision to adopt SGM
• AT is given by:

\[ AT = E[Y|1(D=1,p(x),S)+E[Y|0(p(x),S)|D=i] \]

• There is a steady increase in the population of the world projected to reach 9.7 billion by 2050 (UN, 2015).
• The increase in population is accompanied by an increase in demand for food (FAO, 2010).
• The current level of depletion in natural resources is partly attributed to intensive agriculture.
• A significant population of the world is face by threat of food insecurity (FAO, 2010).
• The world is experiencing a change in the climate partly due to intensive agriculture (IPCC, 2007).
• SGM is a sustainable agriculture model for food production and environmental conservation

Results

• The sensitivity analysis showed that there is no hidden bias
• The level of bias would have to be more than 2 times for the study to be sensitive to bias
• Evidence that SGM adoption affects WTP for organic vegetables

Table 2: Results of the ATT of SGM on the WTP for organic vegetables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sample</th>
<th>Treated</th>
<th>Controls</th>
<th>Difference</th>
<th>S.E.</th>
<th>t-stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
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<td>0.62</td>
<td>0.61</td>
<td>0.01</td>
<td>0.04</td>
<td>17.14***</td>
</tr>
</tbody>
</table>

Discussion

• If an individual health conscious the probability of adopting SGM increases by 23%
• Increasing the price of organic vegetable by Ksh.1 increases the probability of adopting SGM by 63%
• If an individual is employed then the probability of adopting the SGM increases by 6%
• An increase in the level of education reduces the probability of adopting SGM by 32%
• If an individual is a male gender the probability of adopting SGM reduces by 27%
• If an individual uses products with organic labels then the probability of adopting SGM increases by 15%
• The adoption of SGM increases the difference in WTP for organic products among adopters and non-adopters
• The WTP of the adopters of SGM is at least 31% higher than those in the control group
• The SGM have a potential of addressing food insecurity and poverty alleviation

Conclusions and Recommendations

• There is a niche of health conscious consumers that have a preference for organic vegetables
• Pricing of organic models have an influence on the decisions to adopt sustainable organic models
• Income has an effect on the adoption of sustainable organic models
• Male gender are less likely to adopt organic models
• Labelling organic products has an influence on consumer decisions to adopt organic inventions
• SGM requires promotion among individuals with higher education levels
• Adoption of SGM has a significant impact on consumer WTP for organic products
• The SGM can be up scaled and integrated into extension services within the ministry of agriculture

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References


Impact of grow and model on willingness to pay for organic vegetables: Matching technique among urban consumers in Kenya

Eric Bett, David Michael Aiyieko, Eustace Kiarii

Kenyatta University, P.O. Box 43844-0100, Nairobi, Department of Agribusiness Management and Trade