The 3rd International Workshop on "Sustainable Consumption", Tokyo, organized by SNTT and AIST in cooperation with METI and UNEP, 21-22 October, 2004

Overview

1. Issues related to Eco-efficiency
2. The project
3. Focus of presentation
4. Questions to be elaborated
5. Used method
6. Results and Discussion
7. Conclusions

The Heterogeneity of Young Japanese Women's Life - A Consumption Perspective

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Patrick Hofstetter, BAO, Zürich

Part of the project "CHap: CO2-emissions per unit of happiness: a new indicator for sustainable consumption that considers and minimizes rebound effects" which is lead by Patrick Hofstetter of BAO.

Issues related to Eco-efficiency

Ceteris Paribus Assumption in Life Cycle Assessment

Many models and LCA assume that:
- Everything remains constant unless the models explicitly allow for a change
- Especially attributional LCA assumes ceteris paribus in the production function

⇒ What about the consumers' behavior?

Purpose of this study

Question:
What is the net sustainability effect if an individual adopts a new (recommended) consumption activity?

The purpose of this study:
Predicting shifts in household consumption patterns when adopting a new activity.
⇒ Move from attributional to consequential analysis

What we need to know:
- Substituted consumption activities
- Triggered additional consumption activities
- Consequences on the economic system
- Resulting sustainability impacts

Candidates to serve as measurement of ultimate utility:
- Quality of Life (QoL)
- The good life
- Flow state
- Satisfaction
- Subjective well-being
- Happiness

"Happiness" is among the well-studied concepts that can directly be used for our purposes.
Marketing is sector specific

But perhaps also more

Overview on the whole project

The resulting indicator: CHap

Questions to be elaborated

Used Method

Data

Analysis

Statistical Tool
Table. Characteristics of data dealt for this study

<table>
<thead>
<tr>
<th>Panel Number</th>
<th>Survey Year</th>
<th>Number of Samples</th>
<th>Actual Sample Number used for this study</th>
<th>Age range at the time of survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel 6A</td>
<td>1998</td>
<td>952 244 1196</td>
<td>1628</td>
<td>29-39</td>
</tr>
<tr>
<td>Panel 6B</td>
<td>1998</td>
<td>211 231 442</td>
<td>25-28</td>
<td></td>
</tr>
<tr>
<td>Panel 7A</td>
<td>1999</td>
<td>931 206 1137</td>
<td>1537</td>
<td>30-40</td>
</tr>
<tr>
<td>Panel 7B</td>
<td>1999</td>
<td>215 197 412</td>
<td>26-29</td>
<td></td>
</tr>
<tr>
<td>Panel 8A</td>
<td>2000</td>
<td>900 198 1098</td>
<td>1481</td>
<td>31-41</td>
</tr>
<tr>
<td>Panel 8B</td>
<td>2000</td>
<td>220 163 383</td>
<td>27-30</td>
<td></td>
</tr>
</tbody>
</table>

Question: Do you consider yourself happy or unhappy?

1. Unhappy
2. Rather unhappy
3. Average
4. Rather happy
5. Very happy

Self-reported measure

Table. Example of items for statistical analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>NN</th>
<th>NY</th>
<th>YY</th>
<th>YN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample n = 29</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample n = 213</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample n = 28</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean of [Value(y-1) – Value(y)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table. Variables and frequencies for the life events and attributes chosen as standards to divide the sample into homogeneous sub-groups for panel analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>NN</th>
<th>NY</th>
<th>YY</th>
<th>YN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Married and left family</td>
<td>2,233</td>
<td>57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Gave a birth to a child</td>
<td>2,034</td>
<td>149</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. A family member moved out for business reason</td>
<td>2,330</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Started new lessons or learning</td>
<td>1,967</td>
<td>64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Took a leadership of a committee, club or organization</td>
<td>1,768</td>
<td>235</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. A family member had entrance exams and enrolled to a school</td>
<td>1,877</td>
<td>235</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Wife – employed (start working)</td>
<td>772</td>
<td>170</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Wife - Full-time position</td>
<td>441</td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Started living in a house</td>
<td>948</td>
<td>65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Started living in an own house</td>
<td>397</td>
<td>461</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Results: Shifts in Happiness

- Significant at P < 0.05
Results: Shifts in Happiness

-0.2 -0.1 0.0 0.1 0.2 0.3

(1) Got married
(2) Gave birth
(3) Husband moved out for business reason
(4) Took responsibility as a chairperson of an organisation
(5) Started a new hobby
(6) Have a full-time position
(7) Started to work
(8) Became a Full-time worker
(9) Started living in a house

Results: Shifts in Possession of Goods

-0.8 -0.6 -0.4 -0.2 0.0 0.2 0.4 0.6 0.8 1.0

(1) Got married
(2) Gave a birth
(3) Husband moved out for business reason
(4) Took responsibility as a chairperson of an organisation
(5) Started a new hobby
(6) Have a full-time position
(7) Started to work
(8) Became a Full-time worker
Shifts in Possession of Goods

Concluding Remarks (1)

This Year’s Study (2004)
- Are young Japanese women a homogenous group of consumers?
  - No!
- What additional stratification makes them more homogenous?
  - major life events (change in social status and physical living place) and perhaps economic aspects (income and savings)
- What life happenings have major consequences on happiness and consumption patterns and/or time use?
  - next page

Concluding Remarks (2)

The tendencies observed from this study were:
1. Major life events which alter the person’s social status (e.g., getting married, giving birth to a child, start working) have major contributions to time-consumption patterns.
2. The events which alter physical place of living (e.g., getting married, husband moved out, moving to a house) have major impacts on possession of durable goods.

Future Works

More detailed longitudinal panel data set is necessary to increase the resolution and robustness of this evaluation method.

Once such a methodology has been established, it will be possible to evaluate the impacts of suggested “sustainable consumption” activities on consumption patterns considering the interdependencies of consumption activities.

Rebound effects

Direct Rebound Effect (substitution effect, pure price effect): Greater efficiency may lead to a lower price of the service (or product or technology) which in turn may induce an increased use of this cheaper service.

Indirect Rebound Effect (income effect, secondary effect): If prices of other commodities and income are constant, the reduction of costs for one commodity due to a particular efficiency increase implies that consumers have more money to spend on other goods.

General Equilibrium Effect (economy-wide effects): The direct and indirect rebound effect lead to changed prices and consumption throughout the economy, which may increase or decrease production in distant sectors and changes the production functions.

Transformational Effect: This includes changes in consumer preferences, alteration of social institutions, and the rearrangement of the organization of production.

(Disset al. 2000, Binswanger 2001)
Possession of Cloth Dryer, PC and Mobile Phone


Frequency

Cloth Dryer
Personal Computer
Mobile Phone