Consuming health: Drivers of attitudes towards healthy eating and packaged foods

International Life Sciences Institute (ILSI) Southeast Asia Region & ILSI Malaysia 8th Scientific Seminar

Food Innovation/Renovation for Healthier Food Choices – Collaborative efforts for effective implementation

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Wee Kim Wee School of Communication and Information
Agenda (incorporating Research Trajectory)

- Background: Key Study Areas Regarding Consumption of Food
- Environment
  - Retail Landscape
  - Advertising & Consumption
- Home & Culture
- Consumer Psychology
Much of current research on food consumption is related to:

- Consumption
  - Marketing
- Health
  - Obesity
  - Wellness
<table>
<thead>
<tr>
<th>Biology</th>
<th>Activity environment</th>
<th>Physical Activity</th>
<th>Individual psychology</th>
</tr>
</thead>
<tbody>
<tr>
<td>• influence of genetics and ill health</td>
<td>• influence of environment on behaviour</td>
<td>• Type, frequency and Intensity</td>
<td>• Individuals’ psychological drive for behavioral patterns or preferences</td>
</tr>
<tr>
<td></td>
<td>• e.g. decision to cycle to work is influenced by road safety or air pollution</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What has been studied (mainly in the West)

<table>
<thead>
<tr>
<th>Societal Influences</th>
<th>Food environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Impact of Society</td>
<td>• influence of the food environment on food choice</td>
</tr>
<tr>
<td>• e.g. media influence, education, culture</td>
<td>• e.g. decision to eat more fruits and vegetables influenced by their availability and quality near home</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Food Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Quality</td>
</tr>
<tr>
<td>• Quantity</td>
</tr>
<tr>
<td>• Frequency</td>
</tr>
</tbody>
</table>
How energy balance is viewed conceptually

Source: Foresight systems map, 2007
Total Food Quality Model (TFQ)
Grunert 2002
Major Drivers of Consumption

Environment

External
Home & Culture
Consumer Psychology

Choice concept formation e.g. Theory of Planned Behavior

Awareness
Normative Attitudes

Preferences & Behavior

Consumer Psychology

External

Home & Culture

Normative Attitudes
Major Drivers (External)

• External Environmental context
  – Shops
  – Supermarkets
  – Restaurants/eateries
  – Advertising/marketing
  Vs.

• Distance/convenience

• Pricing
Searching for Healthy Food: analysis of distribution of food outlets in cities and counties in California
by the California Center for Public Health (CCPHA)

• Growing scientific evidence that what people eat—and their likelihood of being obese—is influenced by the food environment in which they live.
• Ready access to healthy foods is critical in battling the obesity crisis
• CCPHA’s analysis shows a landscape crowded with food outlets that offer little fruits, vegetables, and other healthy products.
The data distribution overlaps with those states whose inhabitants tend to have a high BMI.
Does Advertising Influence Food Purchase & Consumption?

• “Yes” for sales of unhealthy snacks (e.g. Huang & Yang 2013)

• “The association between TV and increased BMI may be explained by exposure to TV ads for high calorie, nutritionally questionable foods, and eating while watching TV, which distracts from natural signals the body gives for when it is hungry or satisfied” (David Bickham et al. 2014)
Does the Media Influence Food Purchase & Consumption?

- Numerous cases documented (e.g. ET)
- Huang & Yang 2013 – Hershey’s, Mars, Cadbury’s study
Environmental Trends in Asia: Supermarkets vs. Markets
• Asian consumers
  – Shift in food habits from fresh produce to packaged foods

• Food Packaging/labels $\rightarrow$ Food perceptions $\rightarrow$ Food Choices $\rightarrow$ Health outcomes

• In the modern context, the real product is almost always hidden
• Extrinsic Cues
  – Used by consumers to form perceptions about products (Richardson, Dick & Jain, 1994; Miyazaki, Grewal & Goodstein, 2005)
  – **All elements** on a product packaging plays a part in influencing perception (Rao & Monroe, 1988; Richardson et al., 1994)
Research Trajectory

Research on food labels:

- Western focused: Extensive, regulated
- Asian/Singapore focused: Minimal
- How are marketers are using packaging to communicate nutrition in Asia?
- Effects of food packaging cues on consumer decision making
## Research Findings (Lwin et al 2014)

<table>
<thead>
<tr>
<th>Presence of claim</th>
<th>Number of products</th>
<th>Manufacturing Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not mentioned</td>
<td>Europe</td>
</tr>
<tr>
<td>Diet</td>
<td>95</td>
<td>6.3%</td>
</tr>
<tr>
<td>Health</td>
<td>36</td>
<td>0%</td>
</tr>
<tr>
<td>Nutrition</td>
<td>127</td>
<td>0.8%</td>
</tr>
<tr>
<td>Quality</td>
<td>146</td>
<td>6.2%</td>
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### Research Findings (Lwin et al 2014)

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</table>
Japan
S E Asian Brand

Nestlé Whole Grain Cereal

Fitnesse

Low Fat, Dietary Fiber (2 g per 100 g)

Nestlé Breakfast Cereal

Shape up your Lifestyle with the 14 Day Program

Good to know...

- Whole grain is a great source of fiber.
- Whole grain provides a steady source of energy.
- Whole grain helps to maintain a healthy weight.

The 14 day program is a step towards a healthy lifestyle...
Definitions from Codex Alimetarius

Nutrient Content Claim (NCC)
- level of a nutrient contained in a food

Nutrient Function Claim (NFC)
- physiological role of the nutrient

Reduction of Disease Risk Claims (RDRC)
- relating to consumption of a food or food constituent, in the context of total diet, to the reduced risk of developing a disease or health related condition

Marketing Claims (MC)
- made on the basis of taste and other benefits like wholesomeness

Other Health Claims (OHC)
- any representation that states, suggests, or implies that a relationship exists between a food or a constituent of that food and health

Non-nutrient Claims (NNC)
- the use (or non-use) of additives and/or
- information that cannot be validated by the consumer
Findings from Healthy Foods analyses 2014: Nutrient Content Claims (NCC)

<table>
<thead>
<tr>
<th>Nutrient Content Claims (NCC)</th>
<th>EU (n = 54) %</th>
<th>USA (n = 34) %</th>
<th>Malaysia (n = 93) %</th>
<th>Singapore (n = 67) %</th>
<th>Indonesia (n = 14) %</th>
<th>Philippines (n = 3) %</th>
<th>Thailand (n = 38) %</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least one claim</td>
<td>37</td>
<td>32.4</td>
<td>39.8</td>
<td>55.2</td>
<td>28.6</td>
<td>66.7</td>
<td>39.5</td>
</tr>
<tr>
<td>Vitamin / Mineral / Omega 3DH / Antioxidants</td>
<td>5.6</td>
<td>14.7</td>
<td>21.6</td>
<td>31.4</td>
<td>14.3</td>
<td>66.7</td>
<td>15.8</td>
</tr>
<tr>
<td>Calcium</td>
<td>1.9</td>
<td>8.8</td>
<td>10.8</td>
<td>23.9</td>
<td>14.3</td>
<td>0</td>
<td>10.5</td>
</tr>
<tr>
<td>Protein</td>
<td>0</td>
<td>0</td>
<td>5.4</td>
<td>7.5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Fiber</td>
<td>0</td>
<td>8.8</td>
<td>3.2</td>
<td>3</td>
<td>0</td>
<td>33.3</td>
<td>0</td>
</tr>
<tr>
<td>Sugar-related</td>
<td>14.8</td>
<td>14.7</td>
<td>11.8</td>
<td>10.4</td>
<td>0</td>
<td>0</td>
<td>5.3</td>
</tr>
<tr>
<td>Fat-related</td>
<td>13</td>
<td>5.9</td>
<td>16.1</td>
<td>29.9</td>
<td>21.4</td>
<td>0</td>
<td>21.1</td>
</tr>
<tr>
<td>Sodium</td>
<td>0</td>
<td>2.9</td>
<td>3.3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cholesterol-related</td>
<td>0</td>
<td>5.9</td>
<td>6.5</td>
<td>16.4</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>

**N = 303**
## Findings:
### Nutrient Function Claims (NFC)

**N = 303**

<table>
<thead>
<tr>
<th>Nutrient Function Claims (NFC)</th>
<th>EU (n = 54) %</th>
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<th>Singapore (n = 67) %</th>
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<th>Philippines (n = 3) %</th>
<th>Thailand (n = 38) %</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least one claim</td>
<td>0</td>
<td>5.9</td>
<td>6.5</td>
<td>10.4</td>
<td>7.1</td>
<td>33.3</td>
<td>0</td>
</tr>
<tr>
<td>Bone Health</td>
<td>0</td>
<td>2.9</td>
<td>3.2</td>
<td>7.5</td>
<td>7.1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Heart Health</td>
<td>0</td>
<td>2.9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Digestive System</td>
<td>0</td>
<td>0</td>
<td>3.2</td>
<td>6.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Whole Body Health</td>
<td>0</td>
<td>0</td>
<td>1.1</td>
<td>0</td>
<td>0</td>
<td>33.3</td>
<td>0</td>
</tr>
</tbody>
</table>
## Findings:
**Marketing Claims (MC) / Other Health Claims (OHC)**

<table>
<thead>
<tr>
<th>Marketing Claims (MC)/Other Health Claims (OHC)</th>
<th>EU (n = 54) %</th>
<th>USA (n = 34) %</th>
<th>Malaysia (n = 93) %</th>
<th>Singapore (n = 67) %</th>
<th>Indonesia (n = 14) %</th>
<th>Philippines (n = 3) %</th>
<th>Thailand (n = 38) %</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least one claim</td>
<td>27.8</td>
<td>50</td>
<td>31.2</td>
<td>35.8</td>
<td>21.4</td>
<td>33.3</td>
<td>15.8</td>
</tr>
<tr>
<td>“Real” *</td>
<td>9.3</td>
<td>17.6</td>
<td>10.8</td>
<td>14.9</td>
<td>7.1</td>
<td>0</td>
<td>5.3</td>
</tr>
<tr>
<td>Energizing</td>
<td>0</td>
<td>2.9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>“Whole”; “Whole grain”; “Wholesome”</td>
<td>0</td>
<td>14.7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>33.3</td>
<td>0</td>
</tr>
<tr>
<td>Prebiotic</td>
<td>0</td>
<td>0</td>
<td>2.2</td>
<td>6.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Vegetarian</td>
<td>3.7</td>
<td>0</td>
<td>5.4</td>
<td>1.5</td>
<td>7.1</td>
<td>0</td>
<td>2.6</td>
</tr>
<tr>
<td>Organic / Non-GM</td>
<td>1.9</td>
<td>11.7</td>
<td>0</td>
<td>4.5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Taste Related</td>
<td>16.7</td>
<td>20.6</td>
<td>18.3</td>
<td>23.9</td>
<td>14.3</td>
<td>33.3</td>
<td>7.9</td>
</tr>
</tbody>
</table>

* Also includes other words such as “Genuine”, “True”, “Original”, “Nutritional”

**N = 303**
Findings:
Regional Presence of Non-nutrient Claims (NNC)

<table>
<thead>
<tr>
<th>Non-nutrient Content Claims (NNC)</th>
<th>EU (n = 54) %</th>
<th>USA (n = 34) %</th>
<th>Malaysia (n = 93) %</th>
<th>Singapore (n = 67) %</th>
<th>Indonesia (n = 14) %</th>
<th>Thailand (n = 38) %</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least one claim</td>
<td>33.3</td>
<td>52.9</td>
<td>30.1</td>
<td>46.3</td>
<td>14.3</td>
<td>23.7</td>
</tr>
<tr>
<td>No Preservatives</td>
<td>16.7</td>
<td>14.7</td>
<td>12.9</td>
<td>23.9</td>
<td>7.1</td>
<td>13.2</td>
</tr>
<tr>
<td>No (artificial) Colouring(s)/ Colour(s)/ Flavours</td>
<td>19.7</td>
<td>23.6</td>
<td>15.1</td>
<td>28.4</td>
<td>0</td>
<td>15.8</td>
</tr>
<tr>
<td>No MSG</td>
<td>0</td>
<td>2.9</td>
<td>2.2</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>“Fresh”; “Freshness”; “Refreshing”; “Refresh”</td>
<td>9.3</td>
<td>0</td>
<td>12.9</td>
<td>25.4</td>
<td>14.3</td>
<td>7.9</td>
</tr>
<tr>
<td>“Natural”</td>
<td>13.0</td>
<td>38.2</td>
<td>5.4</td>
<td>9.0</td>
<td>0</td>
<td>7.9</td>
</tr>
<tr>
<td>“100%”</td>
<td>11.1</td>
<td>23.5</td>
<td>3.2</td>
<td>4.5</td>
<td>14.3</td>
<td>13.2</td>
</tr>
</tbody>
</table>

**N = 303**
Natural claim regulation? (Demetrakakes, 2007)

<table>
<thead>
<tr>
<th>Country</th>
<th>Definition of Natural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>• Only regulates the use of the word pure and similar terms.</td>
</tr>
<tr>
<td>USA</td>
<td>• Applicable to flavour and taste rather than nutritional benefits.</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>• 100% Organic/Natural/Fresh is not considered a nutrient claim</td>
</tr>
<tr>
<td></td>
<td>• Only defines organic in a similar manner to Canada’s definition of natural.</td>
</tr>
<tr>
<td>Europe</td>
<td>• Term natural or naturally must be paired with a nutrient claim</td>
</tr>
<tr>
<td>Canada</td>
<td>• Should not contain food additives, artificial colouring, mineral nutrient or added vitamin.</td>
</tr>
<tr>
<td></td>
<td>• Must not go through significant change processes or have anything removed from the food product.</td>
</tr>
</tbody>
</table>
Major Drivers of Consumption

- Environment
  - External
  - Home & Culture
  - Consumer Psychology

Choice concept formation e.g. Theory of Planned Behavior

- Awareness
- Normative Attitudes

Preferences & Behavior
Recently Studied Effects

Planned versus Impulse Purchasing
• Personal food system (Sobel et al 2006)
Recently Studied Effects

- Consumer Perception of *Claims*
- Generalization Effects
  - For example, over-generalizing a product with a “no cholesterol” as considerably “healthier” (Andrews, Netemeyer & Burton, 1998)
Sensory

• Consumer reception research covers almost all senses
Food Differentiation via Branding (Krystallis & Chrysouschou 2011)
Robust: 27 times purification
Nongfu Spring: 100% natural spring

Which concept do you prefer?
Aside from Brands, Dependence on External Cues

• Seals as Extrinsic Cues
  – Seals of approval improve credibility and superiority (Parkinson, 1975)
  – Preference for products with seal (even a fictitious one) than without (Beltramini & Stafford, 1993)
Major Drivers of Consumption (KIDS)

Environment
- Entertainment
  - Toys/Games & Peers
- Home & Culture
- Consumer Psychology

Choice concept formation e.g. Theory of Planned Behavior
- Awareness
- Normative Attitudes

Preferences & Behavior
Taste Test!
The Vulnerability of Food Perception

Fast food branding really does make food more appetising to children.

- Dina Borzekowski at the Johns Hopkins School of Health in Baltimore, US
- 63 pre-schoolers, aged three to five, to sample two meals, each consisting of a chicken nugget, a quarter of a hamburger, french fries, two baby carrots and a small cup of milk.
- Both meals came from McDonalds, only one appeared in its original packaging. Researchers presented items from the other meal in plain wrappers.
- Children said they tasted a difference between two meals, and they overwhelmingly preferred the McDonalds-branded foods.
Food Differentiation via Branding (Williams 2000 - 2014)


- $11.26 billion spent on all advertising food, beverages and meals in 2004 (measured media).
- $5 to $6.6 billion spent on all television advertising in 2004.
Growth in New Food Products Targeted to U.S. Children and Youth 1994 to 2004

New products targeted to total market
New products targeted to children & youth

Top 10 Items Teens, Ages 13-17 Years, Purchased with Their Own Money

Source: Roper Youth Report

• Boys
  1. Food 30%
  2. Soda/soft drinks 26%
  3. Candy 24%
  4. Clothes 21%
  5. CD’s/recorded music 19%
  6. Video games 18%
  7. Salty snacks 15%
  8. Shoes 15%
  9. Lunch 13%
  10. Magazines 9%
  11. Jewelry 7%
  11. Ice cream 7%

• Girls
  1. Clothes 43%
  2. Candy 34%
  3. Soda/soft drinks 32%
  4. Food 31%
  5. Salty snacks 22%
  6. Lunch 22%
  7. CD’s/recorded music 18%
  8. Shoes 16%
  9. Jewelry 15%
  10. Magazines 12%
  11. Ice cream 10%
  12. Video games 5%
Food Advertisements and Children’s Saturday Morning Shows

• Taped Sat AM children’s shows from 7:00 - 10:30 am
• Networks: ABC, CBS, NBC, Fox, Nickelodeon
• Over half (53%) of all ads were food ads (n=564)
• About 41% of the ads were for toys (n=331)

Kotz and Story JADA
Type of food advertised during after-school programming

Where Does Home & Culture come in?

Environment
- Entertainment
  - Toys/Games & Peers
- Home & Culture
- Consumer Psychology

Choice concept formation e.g. Theory of Planned Behavior
- Awareness
- Normative Attitudes

Preferences & Behavior
Effects are Strongest at Childhood
(Conceptual Model Lwin et. al 2015)
Considering Culture

• The scent of happiness (Lwin & Wijaya 2010)
The Paradox of Health

Consumers anticipate low-fat foods to be healthy but not pleasure-giving, whereas the opposite was expected for full-fat products.

(Tuorila and Cardello 1994)
Where We Are At

- Potentially misleading communication in packaging
- Provision of credible claims
  - Gives credence to truly healthy foods
- Do we really understand what drives food consumption?
  - Not fully, but improving
- Consumers Psychology – Education
  - Health authorities need to broadly educate consumers to enable healthy consumption
Need to balance regulatory environment with consumer literacy on food labeling
Consumer Behavior & Healthy Eating

• Much of the scientific knowledge is now being utilized to develop programs and interventions targeted at various populations, with special consideration to be made to children