Massey University
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Te Kunenga ki Pūrehuroa

The effect of Traffic Light and Percent Daily Intake nutrition labels on consumers' product evaluations and choice behaviour

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Introduction

- Debate over causes of weight gain
  - Unhealthy food environment

    OR
  - A 'personal responsibility' issue

"The provision of easily understood nutritional information on packaging can contribute to reducing obesity by giving customers information to make better judgements about their lifestyles"

(Food Industry Group, 2006)

Nutrition Label Options

- Current nutrition information confusing
  - Australasian consumers don't understand current Nutrition Information Panel (Ni Mhurchu & Gorton, 2007)
- Food Industry Group
  - "FIG has worked with FGC and its members who are committed to undertake a front of pack labelling scheme showing percentage daily intake" (Food Industry Group, 2008)
- Public health groups
  - "Public Health Organisations ask the Health Select Committee to implement a traffic light food labelling system" (Obesity Action Coalition, 2006)

Product Claims

- Proposal to amend label regulations

Nutrition Content Claims	Presence or absence nutrients	"This food is high in calcium"
General Level Health Claims	Presence of a nutrient or substance in a food linked to effect on a health function. May not refer to a serious disease or indicator of serious disease	"This food is high in calcium for strong teeth and bones"
High Level Health Claims	Presence of a nutrient or substance in a food and its relationship to a serious disease or condition or to an indicator (i.e. a biomarker) of a serious disease	"This food is high in calcium. Diets high in calcium from a variety of foods may increase bone mineral density"

Prior Research

- Reference & Summary nutrition formats effective
  - PDV improves answers to dietary management questions (Levy et al. 1996)
  - Adjectives improve product ratings (Scammon 1977; Burton et al., 1994)
- Verbal vs. Numeric information
  - Consumers influenced by verbal information (Viswanathan, 1996)
  - Conflicting results for effect of claims (Ford et al., 1996; Roe et al., 1999)

Research Aims

- How do food label format changes affect consumers' product evaluations?
  - Studies one and two – attitude testing
- What pieces of information affect consumers' product choice behaviour?
  - Study three – choice modelling

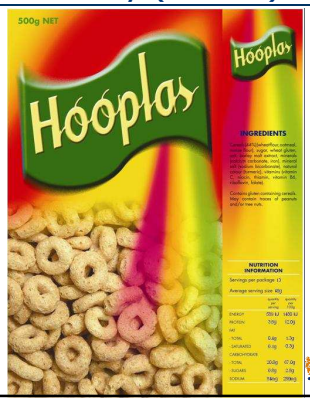
Study 1 Method

- Mall- and street-intercept interviews
  - 294 parents interviewed in Palmerston North
- Between-subjects design

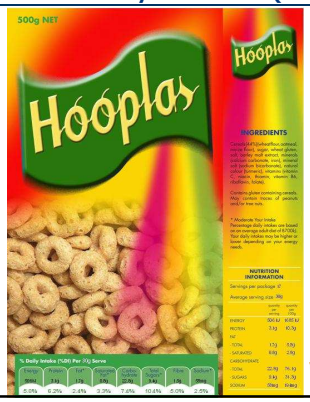
	Control	TLL	PDI
"Better" profile	1	3	5
"Worse" profile	2	4	6

- How did these variables affect respondents':
  - attitude towards the product
  - evaluation of the nutritional profile

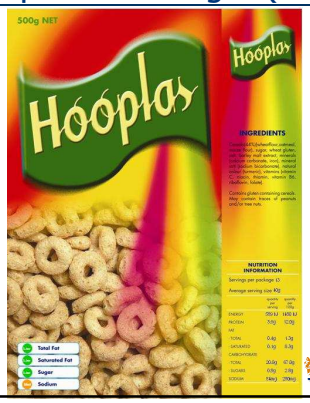
NIP only (control)



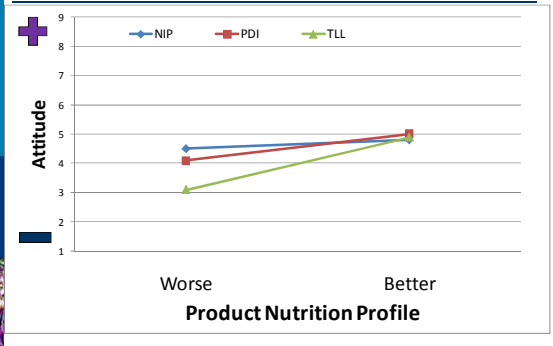
Percent Daily Intake (PDI)



Multiple Traffic Light (TTL)

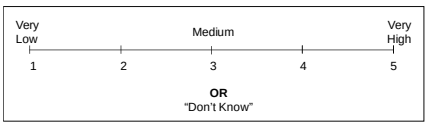


NIP + PDI + TLL



Nutrient Content Evaluation

- Respondents asked to indicate how much
  - Sugar
  - Total Fat
  - Sodium
  - In cereal they'd just seen
  - Using 5-point scale



Nutrient Content Evaluation

- Greatest differences with TLL

	Better Profile	Worse Profile	Difference
Sugar			
NIP	2.7	3.5	0.8
PDI	2.7	3.7	1.0
TLL	2.2	4.4	**2.2**
Total Fat			
NIP	2.0	2.6	0.6
PDI	2.4	2.4	--
TLL	2.0	3.0	**1.0**
Sodium			
NIP	3.0	3.0	--
PDI	3.5	3.1	-0.4
TLL	3.0	3.2	0.2

Study 2 Method

- Online study
  - Nationwide consumer panel, 428 parents sampled
- Between-subjects, partial 3 x 2 x 2 design
  - Added product claim variable

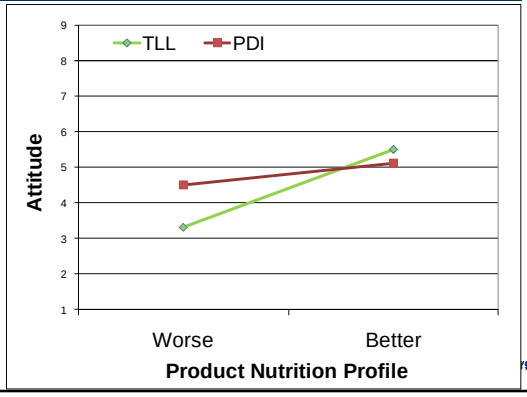
Product Claim	Nutritional Profile	Nutrition Label Format	
		MTL	PDI
Control	Better	1	6
	Worse	2	7
Nutrition Claim	Better	3	8
	Worse	4	9
High Health Claim	Better	5	10
	Worse	Not permitted	Not permitted

Study 2 Examples

Study 2 Results

- Same pattern as Study 1
  - Front of pack nutrition label
  - Product nutrition profile
  - Interaction between nutrition label and nutrition profile
  - Product claims – no clear effect

Study 2 Results – FOP Label



Nutrient Content Evaluation

- Greater discrimination with TLL

	Better Profile	Worse Profile	Difference
Sugar			
PDI	2.4	3.4	1.0
TLL	2.0	4.2	**2.2**
Total Fat			
PDI	2.0	2.6	0.6
TLL	1.7	3.0	**1.3**
Sodium			
PDI	2.5	2.6	0.1
TLL	2.8	3.1	**0.3**
Fibre			
PDI	3.7	3.4	-0.3
TLL	3.2	3.0	-0.2

Study 3 Method

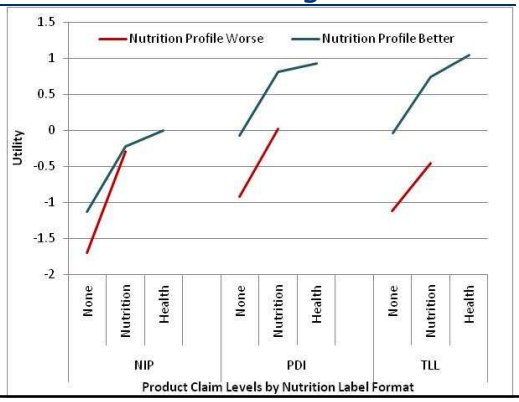
- Online study
  - Nationwide consumer panel, 801 parents sampled
- Stated Preference Discrete Choice Modelling
  - 2 Nutrition Profiles (Better, Worse)
  - 3 Nutrition Label Formats (Control, TLL, PDI)
  - 3 Claim levels (Control, Nutrition, Health)
  - 2 Shape variants (Originals, Stars)
  - = 30 pairs (3 sets of 10), randomly presented

Choice Pair Example

Choice Modelling Results

- Strongest effect on behaviour:
  - Nutrition and Health Claims
  - Product nutrition profile
- Moderate effect
  - Cereal shape (stars win)
  - Nutrition label format
- Interaction effects
  - Nutrition label / product profile / product claims

Choice Modelling Results



Conclusions

- FOP nutrition labels influence consumers' attitudes and behaviour
  - NIP has little impact on attitudes or behaviour
- Graphic nutrition labels communicate better
  - PDI and TLL had similar effects for better cereal
  - But, different effects for worse cereal
    - TLL greatly decreased attitude
- Put numeric information elsewhere for interested consumers

Conclusions

- Nutrition and Health Claims
  - Minimal effect on consumers' attitudes

BUT

- Consumers choose products with claims
  - Strongest effect in choice experiment
  - Little difference between nutrition and health claims
  - But, TLL reduce effect of adding claims on less healthy products