


vineland
RESEARCH & INNOVATION CENTRE

Why some psychographic scales may not be telling you what you think they are

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Vineland Research and Innovation Centre

- Independent, not-for-profit research institute established in 2007 in Niagara region of Canada
- Dedicated to driving a competitive horticulture industry through research, advancements in technologies and commercialization of new products
- Fruits, vegetables, grape and wine and ornamental plants



Background

- Study part of Vineland's hardy rose breeding program
- Test launching a rose in 2017
- New approach to rose marketing
  - Defined collection size
  - Attract younger consumers, beginner gardeners without alienating experienced gardeners
- Needed to test brand concepts
  - Which concept resonates with our target consumer profile?



Psychographic scales

What are they?

- Psychographics study consumer personality traits to predict behaviour
- "Personality is capable of providing as much, and in some cases more, explanatory power than demographics when predicting consumer behaviour" (Sandy *et al.*, 2013)
- Psychographic scales are short questionnaires
  - Enable classification by personality type
  - Validated question items

Psychographic scales

Why use them?

Common psychographic example:

Food neophobia scale

- Series of 10 questions

  E.g.

Strongly Disagree	Moderately Disagree	Disagree Slightly	Neither agree nor disagree	Agree Moderately	Agree Moderately	Strongly agree
○	○	○	○	○	○	○

  - I am constantly sampling new and different foods
  - I don't trust new food (R)
  - I like to try new ethnic restaurants

- Higher food neophobia is associated with:
  - lower fruit and vegetable consumption (Abdul *et al.*, 2008)
  - more nutritionally deficient diets (Capiola & Raudenbush, 2012)
  - lower liking scores in preference testing (Henriques *et al.*, 2009)

Involvement scales

What are they?

Involvement: "The degree to which the product is related to the self and/or the hedonic pleasure received from the product" (Richins and Bloch, 1986)

- In simple terms…

  Higher involvement= More excited about the product

Involvement scales

Many validated involvement scales (20+) available in the literature

- Purchase involvement scale (Mittal, 1989)
- Food involvement scale (Bell & Marshall, 2003)
- Wine product involvement scales (Bruwer & Huang, 2012; Pratt, 2010; Yuan, *et al.*, 2005))
- Herb/vegetable plant involvement scales (Behe & Huddleston, 2016)

Involvement scales

Herb/vegetable plant involvement scales

1	I think that herb plants are appealing
2	I think that herb plants are interesting
3	I think that herb plants are important
4	I think that herb plants are exciting
5	I think that herb plants are of great concern to me
6	I think that herb plants are fascinating
7	I think that herb plants are of great importance
8	I enjoy learning about herb plants

(Behe & Huddleston, 2016)

Involvement scales

Herb/vegetable plant involvement scales

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(Behe & Huddleston, 2016)

Garden plant involvement scale

Adapted scale to garden plants

Garden plant involvement scale

1	I think that **garden** plants are appealing
2	I think that **garden** plants are interesting
3	I think that **garden** plants are important
4	I think that **garden** plants are exciting
5	I think that **garden** plants are of great concern to me
6	I think that **garden** plants are fascinating
7	I think that **garden** plants are of great importance
8	I enjoy learning about **garden** plants

Any relation to:

Purchasing?

Garden plant involvement scale

Garden plant involvement scale

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Any relation to:

Purchasing?

Self-assessed expertise?

Garden plant involvement scale

Garden plant involvement scale

1	I think that **garden** plants are appealing
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8	I enjoy learning about **garden** plants

Any relation to:

- Purchasing?
- Self-assessed expertise?
- Weekly hours gardening?

Garden plant involvement scale

Garden plant involvement scale

1	I think that **garden** plants are appealing
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Any relation to:

- Purchasing?
- Self-assessed expertise?
- Weekly hours gardening?
- Objective knowledge?

Methods

Consumer sample

Participants

Garden plan purchasers
n=510

Age

18-35	35-50	51 and older
27%	31%	42%

Gender

Male	Female
54%	46%

Regional Distribution

Atlantic	B.C.	Ontario	Prairies	Quebec
11%	14%	37%	19%	19%

Garden plant purchasing

How many **ornamental garden plants** (e.g. if you purchased several of the same type of plant, count them as one) did you plant into your garden in the 2015 gardening season?

- ❑ 0
- ❑ 1-4
- ❑ 5-9
- ❑ 10-14
- ❑ 15-19
- ❑ 20+

Self-assessed expertise

Please rate your abilities as a home gardener.

- ❑ Novice
- ❑ Intermediate
- ❑ Expert

Weekly hours gardening

During the gardening season, how many **hours per week** (on average), do you spend **gardening** (not including mowing the lawn)?

- ❑ 1
- ❑ 2
- ❑ 3
- ❑ 4
- ❑ 5
- ❑ 6
- ❑ 7
- ❑ 8
- ❑ 9
- ❑ 10 or more

Gardening knowledge

The questionnaire

- First developed in 2015 with consultation from a Vineland horticulturalist
- Identified:
  - Standard gardening practices that experts generally agree on
  - Basics that knowledgeable gardeners should know about their own gardens
- Tested & refined in 2015
- Final version is an 8 item questionnaire



Gardening knowledge

Sample questions

When is the **ideal time to prune** bushes that flower in the **spring time**?

- I don't know
- Early spring before buds appear
- Early spring when buds appear
- Soon after flowering
- In mid to late summer when the bush gets over-grown
- Autumn when the leaves have dropped

The **natural pH** of the soil in my garden is best suited to:

- I don't know
- Acid-loving plants
- Plants preferring a pH close to neutral
- Plants growing in moderately alkaline soil

Data analysis

Multinomial logistic regression

How is…

Garden plant purchasing (dependent variable)

Influenced by…



- **Gardening involvement score**
- **Self-assessed gardening expertise**
- **Hours spent gardening**
- **Gardening knowledge**

(Independent variables)

Results

Predicting purchasing

Plants purchased in 2015 gardening season	Factor	Wald Chi-Square	Pr > Chi²
5 to 9	Self-assessed expertise	1.932	0.165
	Involvement	1.402	0.236
	Hours gardening	6.661	0.010
	Gardening knowledge	5.950	0.015
10 or more	Self-assessed ability	2.483	0.115
	Involvement	0.000	0.997
	Hours gardening	23.773	< 0.0001
	Gardening knowledge	13.762	0.000

*1-4 plants used as reference category

Rose brand preferences

	Rose brand concept preference		
	Concept 1	Concept 2	Concept 3
Number of consumers	173	181	156
Age		Likely older	Likely older
Self-assessed expertise	No significant differences		
Hours spent gardening	No significant differences		
Weekly hours gardening	No significant differences		
Objective knowledge	No significant differences		
Gardening spend	No significant differences		

Possible to select a brand concept that's attractive to a younger demographic while not alienating avid gardeners

Discussion

Why didn't involvement predict purchasing?

Possible explanation…

- Despite high levels of involvement, activity participation/product use may be limited by constraints (Jun *et al., 2008)*
- Gardening is like going to the gym
- Discrepancy between the best version of ourselves and reality



Discussion

What does involvement mean when not correlated to purchasing?

- Identifies consumers with high interest- *potential* users
- However, some may need an extra nudge to use the product



Key takeaways

Study specific

- By combining with demographics, we were able to determine the most suitable brand concept
  - Brand concept preference not influenced by gardening involvement
  - Can select a brand that's attractive to a younger audience without worrying about alienating avid gardeners

- Gardening involvement did not predict garden plant purchasing
  - Not correlated with objective gardening knowledge nor hours spent gardening

Key takeaways

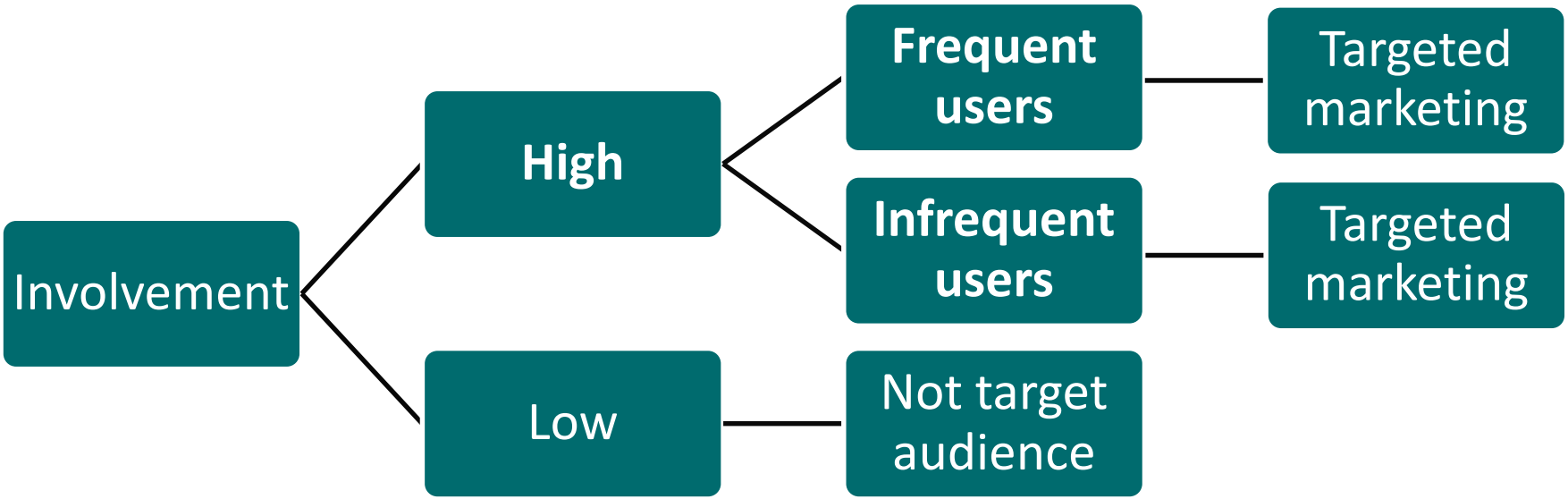
Overall

- Involvement scales are used to determine how **personally relevant** a product/activity is to an individual
  - High involvement = High interest
  - Identify individuals who are ***potential*** product users
  - May not currently be frequent users



Key takeaways

Overall



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