

# The Questionnaire

Advanced Master in Agricultural Economics and Policy

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Attitudinal Scales for the Study  
of Consumer Preferences  
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# Roadmap

20/04	Hello, Psychometrics!	✓
23/04	The Questionnaire	○
24/04	Reliability and Validity of a Measure	○
27/04	Latent Variables: Reflective or Formative?	○
30/04	A Bit of SEM	○
07/05	Stata Stata Stata Stata Stata Stata Stata	○

## Recommended readings:

- ▶ Chapters 4 and 7 from Jhangiani et al.2019)
- ▶ Chapters 7, 10 and 14 from Olivero and Russo2022)
- ▶ Chapter 12 from Mehmetoglu and Jakobsen2022)

Jhangiani, R. S., Chiang, I. A., Cuttler, C., and Leighton, D. C. (2019). *Research Methods in Psychology*. Kwantlen Polytechnic University, 4th edition.

Mehmetoglu, M. and Jakobsen, T. G. (2022). *Applied Statistics Using Stata: A Guide for the Social Sciences*. SAGE Publications Ltd, 2nd edition.

Olivero, N. and Russo, V. (2022). *Psicologia dei Consumi*. McGraw-Hill Education, 3rd edition.

# Moving on to...

## The Questionnaire

What Attitudes Are and How to Measure Them

## A second Copernican revolution?

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## Uncertainty Principle

Stated by **Werner Heisenberg** in 1927, it represents a cornerstone of quantum mechanics and marked a radical break from the laws of classical mechanics.

We cannot know with absolute precision, simultaneously, both the position and the velocity of a particle: **the very act of measuring something changes it**. This is not a problem of imperfect instruments, but a fundamental characteristic of quantum nature.

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## DATA GENERATING PROCESS

# The questionnaire

## The participant

is not a database from which to extract data, but an **active subject** who uses various **contextual factors**, beyond the content of the questions, to make sense of the questionnaire they are filling in. Some contextual effects:

- ▶ The way the questionnaire is presented.
- ▶ The identity of the researcher and the research institution.
- ▶ The response alternatives.
- ▶ The order of the questions.

## Example: Order effect

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- ▶ **Randomise** the presentation of questions.
- ▶ **Do both.**

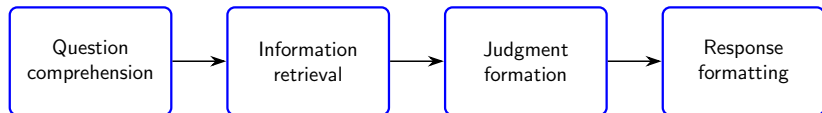
# Cognitive processes in responding to an item

How many alcoholic drinks do you consume on a typical day?

- Much more than average
- Somewhat more than average
- About average
- Somewhat less than average
- Much less than average

*Even when we ask an apparently simple question, the response process can be complex, open to interpretations and manipulations.*

# Cognitive processes in responding to an item



# The BORIS Model

The BORIS model<sup>1</sup> offers five useful principles for writing effective questionnaire questions.



Goldfish



Former UK Prime Minister

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<sup>1</sup>Called BRUSO in Jhangiani et al.2019)

# The BORIS Model

<b>Criterion</b>	<b>Ineffective</b>	<b>OK</b>
<b>Brevity</b>	"Have you ever, at any point in your life, come across the concept of social agriculture?"	"Have you ever heard of social agriculture?"
<b>Objectivity</b>	"How much do you support the NoCap ethical certification?"	"What is your opinion on the NoCap certification?"
<b>Relevance</b>	"Which party did you vote for in the last general election?"	Do not include the question if it is not clearly relevant.
<b>Inambiguity</b>	"Would you consider yourself a health-conscious person?"	"Do you habitually check nutritional labels when shopping?"
<b>Specificity</b>	"Have you ever heard of integrated production and SQNPI?"	"Have you ever heard of integrated production?"

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What Attitudes Are and How to Measure Them

# Attitudes $\neq$ Aptitudes

## What are attitudes?

Since 1918 more than 500 definitions of attitudes have been coined!

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From the various definitions, a component of **evaluation** (positive–negative) of the subject with respect to an object emerges:

- ▶ Allport (1954) defines attitude as a mental state, organised through experience, that exerts an influence on the individual's responses towards all objects and situations with which they are in relation.
- ▶ For Social Cognition (Fazio, 1986), an attitude is a cognitive structure constituted by the association in memory between the representation of the object and its evaluation.
- ▶ Mayers (2021) defines attitude as a favourable or unfavourable evaluation towards something or someone, often rooted in one's beliefs and exhibited in feelings and intentional behaviour.

# Attitudes $\neq$ Aptitudes

## What are attitudes for?

Katz (1960) suggests that attitudes can serve four main functions:

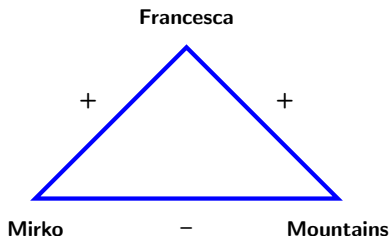
1. **Utilitarian:** the attitude towards a certain object develops to achieve a benefit or avoid a negative effect (e.g. positive attitude towards a vegan diet because it is perceived as healthier);
2. **Value expression:** to express individual values and *self-concept* (e.g. positive attitude towards a vegan diet to express one's *ethical values*);
3. **Ego-defence:** to defend a perceived lack at the identity level (e.g. negative attitude towards a vegan diet, on the part of a man, because eating salad is seen as unmasculine);
4. **Cognitive:** to respond to the need for order, balance and coherence...

# Attitudes $\neq$ Aptitudes

## Balance Theory (Heider, 1946)

is grounded precisely in the principle of cognitive consistency, and posits the existence of triadic attitudinal structures that tend towards cognitive restructuring in case of imbalance.

The triadic structure consists of at least two people and at most one object. Depending on the attitudes with which they are associated with one another, they can represent balanced or imbalanced structures that will therefore tend towards change.



*A triad is considered balanced when the product of the signs is positive.*

# Attitudes $\neq$ Aptitudes

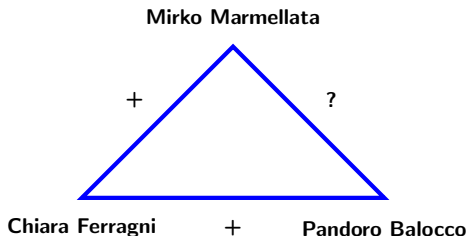
## Balance Theory in marketing

Many companies use brand ambassadors beloved by the public to promote the formation of a positive attitude towards their product or service.

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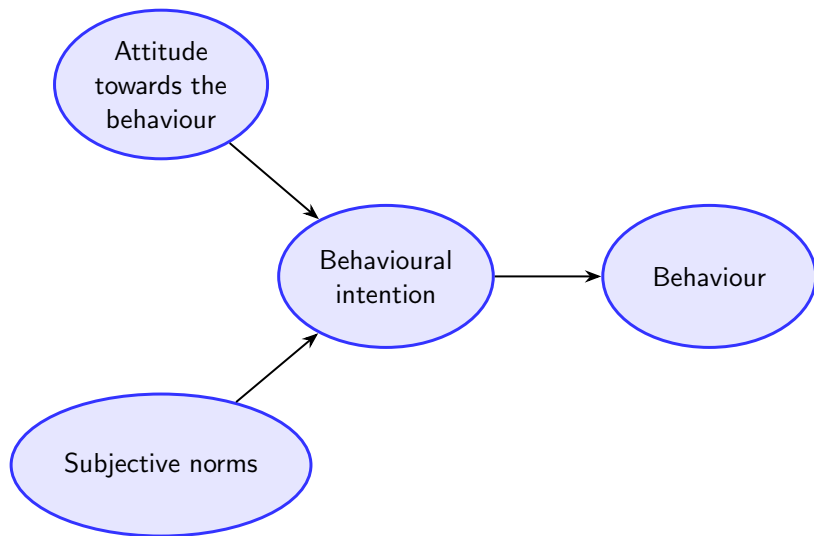
# Attitudes $\neq$ Aptitudes

## Some basic characteristics:

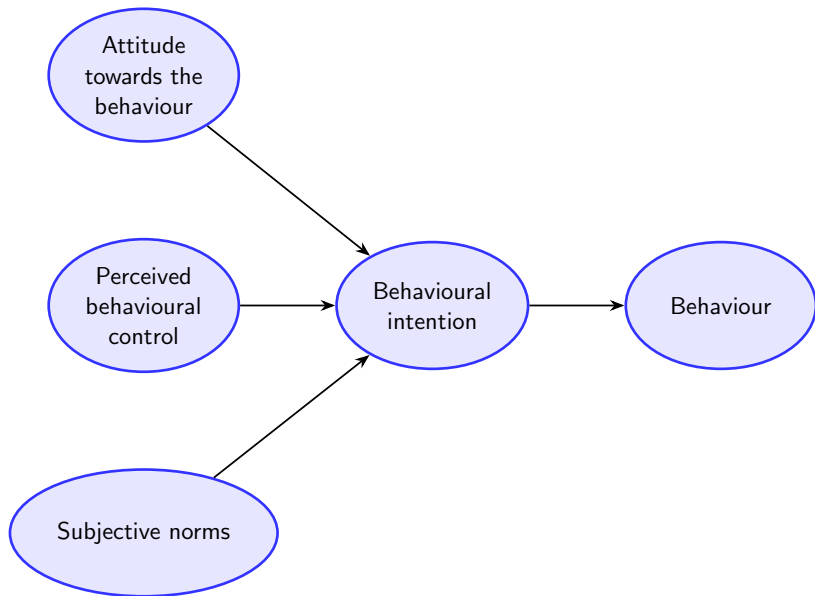
- ▶ Attitudes are relatively permanent over time and consistent across situations.
- ▶ Attitudes always imply a certain degree of abstraction and are generalisable to multiple situations, objects or conditions.
- ▶ Attitudes always have social relevance as they influence how a person relates to others, their preferences and their behaviours.

**Attitude is therefore a useful means of predicting consumer behaviour.**

# Theory of Reasoned Action (Fishbein & Ajzen, 1975)



# Theory of Planned Behaviour (Ajzen, 1991)



# Measuring attitudes: Likert Scale

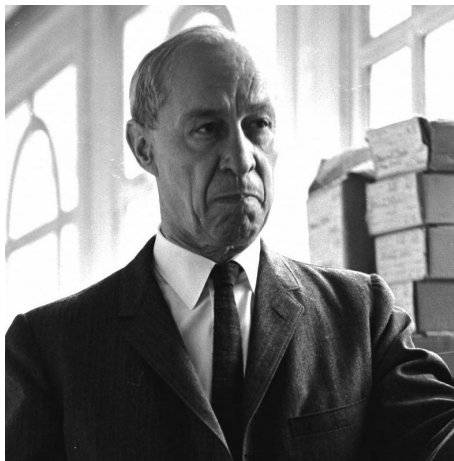


Figure: Rensis Likert (1903–1981)

## Likert Scale

The Likert scale, or *summated rating scale*, is widely used because it is easy to construct: a series of statements (*items*) semantically linked to the attitudes under study are considered, and batteries of questions are constructed in which the respondent is asked to express their degree of agreement or disagreement.

# Example: Neophobia towards food technologies

## Food Technology Neophobia Scale (Cox & Evans, 2008)

The FTNS is a popular instrument for measuring neophobia towards food technologies and is based on the Likert scale.

**FTNS 1:** I don't need to eat food made using new technology because the food I already eat is fine

**FTNS 2:** New food technologies are something I am uncertain about

**FTNS 3:** New food products are not healthier than traditional foods

(...)

<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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1	2	3	4	5

# Measuring attitudes: Semantic Differential



Figure: Charles E. Osgood (1916–1991)

## Osgood Scale

The Osgood scale, or *semantic differential*, is based on pairs of opposite adjectives. The respondent indicates their position along a continuum, thus revealing their mental representation of the target concept.

## Example target: “Stata”

	-3	-2	-1	0	1	2	3	
Aggressive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Peaceful
Unpleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pleasant
...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	...

# Example target: "Stata"

	-3	-2	-1	0	1	2	3	
Aggressive	○	○	○	○	○	○	○	Peaceful
Unpleasant	○	○	○	○	○	○	○	Pleasant
...	○	○	○	○	○	○	○	...

