

# An Introduction to Factorial Survey Experiments (FSE)

Part I: Introduction

Dr Tamara Gutfleisch

Mannheim Centre for European Social Research (MZES)

University of Mannheim

# Outline

**Part I: Introduction**

Part II: Setting Up the Experiment and the Survey

Part III: Practical examples

# Learning outcomes

- What are the principals underlying FSEs?
- What questions can be answered using FSEs?
- What are important steps in designing and conducting FSEs?
- How to analyse the data obtained from FSEs?

# Literature

## General Source:

Auspurg, K. and Hinz, T. (2015) *Factorial Survey Experiments*. Los Angeles: Sage.

→ A further reading list is included in the supplementary material of this course

# Part I

Introduction



# Surveys and Experimental Design

## Surveys

- High external validity (heterogeneous/representative sample realisable)
- Low internal validity (unobserved confounders)
- Social desirability

## Experimental Design

- High internal validity (controlled environment)
- Causal interpretation of results
- Low external validity (selective samples; fictitious situation)

# Factorial Survey Experiments

- Integrating survey and experimental design in one method
- Respondents evaluate hypothetical descriptions of persons, objects, or situations (*vignettes*)
- Vignettes consist of multiple attributes (i.e., *dimensions*)
- The values (i.e., *levels*) of these attributes are experimentally varied across vignettes
- Between-subjects design: one vignette per respondent; Within-subjects designs/Mixed designs: several vignettes per respondent
- Random assignment of vignettes to respondents

# Factorial Survey Experiments: Objective

- Assessing how individuals interpret, weigh, and act upon information
- Measuring how single dimensions and their levels influence individuals' evaluations (e.g., attitudes, behavioural intentions, normative judgments)
- Testing the influence of respondent characteristics on vignette evaluations
- Testing theoretical models



# Difference to other Vignette/Survey Experiments

- **Conjoint analyses or choice experiments** (e.g., Hainmueller et al., 2014)
  - Two (or more vignettes) shown simultaneously
  - Respondents are asked to make a choice between vignettes
- **Survey experiments not based on multifactorial designs** (see, e.g., Mutz, 2011, Sniderman, 2018)

# Example Vignette 1

Source: Tisch and Lersch, 2020, p. 522

Study on individuals' fairness perceptions of couple's savings arrangements

Vignette format: Text

Answer scale: Fairness perceptions measured from 0 (very unfair) to 10 (very fair)

Sample: Representative sample of German population

Imagine a married couple, woman and man, both at the same age. They have been living together in a rented flat for 5 years and are childless. Both work full-time and they share the housework. Both put some of their monthly incomes aside to save for major purchases or rainy days.

*They have €20.000 on a joint savings account and no individual savings accounts. Mainly the woman decides when and for what the whole savings are spent.*

How fair is this situation?

## Example Vignette 2

Source: Karpinska et al., 2013, p. 1330

Study on employers' willingness to retain older workers eligible for early retirement

Vignette format: Table

Answer scale ranged from 1 (retaining very undesirable) to 11 (retaining very desirable)

Sample: Managers identified in a Dutch longitudinal household survey

*Below you can find the description of older workers who are eligible for early retirement. Please indicate, for each profile, what is the likelihood of you willing to retain that older worker for a few more years in your organization for the position you supervise most often.*

<b>Context</b>	
Organizational context	Structural labour force shortages
<b>Applicant</b>	
Knowledge difficult to replace	Yes
Age (years)	65
Occupationally flexible	Yes
Attitude towards retirement	Looking forward
Health	Good
Willingness to participate in training	Low
Managing employee	Employee sometimes difficult to manage

*What is the likelihood of you willing to retain that older worker for few more years in your organization for the position you most often supervise?*

1	2	3	4	5	6	7	8	9	10	11
Retaining very undesirable			Neutral				Retaining very desirable			

# Example Vignette 3

Source: Gutfleisch and Samuel, 2021, p. 787

Study on recruiters' hiring intentions

Vignette format: Tabular CV

Answer scale: „What are the chances for a candidate with the above shown CV to be considered for the advertised job?“ 0 (practically zero) to 10 (excellent)

Sample: Real-world vacancies and real recruiters in Luxembourg

Personal information		Application A
Gender		male
Nationality		Portuguese
Country of residence		Luxembourg
Language skills		According to requirements
Vocational experience		
	Now	
	12/2017	Position 2 Trained waiter (company in Luxembourg)
	12/2016	
	12/2015	Position 1 Trained waiter (company in Luxembourg)
	12/2014	
	12/2013	Unemployed
Education		
	12/2013	According to requirements

# (Non-Exhaustive) Overview of the Literature

- Review of 25 years of FSEs (Wallander, 2009)
- Normative judgments (e.g., Alves & Rossi, 1978; Sauer 2020)
- Employer preferences (Gutfleisch et al., 2021; McDonald, 2019)
- Educational choices & teacher evaluations (e.g., Geven et al., 2021)
- Health care chauvinism (e.g., Larsen and Schaeffer, 2021)

Subdisciplines of sociology (n = 106).

	Frequency
Crime, law, and deviance <sup>a</sup>	49
Family and social welfare <sup>b</sup>	18
Social differentiation <sup>b</sup>	12
Sociology of health and medicine <sup>c</sup>	5
Organizations, occupations, and work <sup>a</sup>	5
Urban sociology <sup>c</sup>	5
Sociological theory <sup>c</sup>	5
Political sociology <sup>c</sup>	2
Ethnic relations <sup>a</sup>	2
Sex and gender <sup>a</sup>	1
Religion <sup>a</sup>	1
Sociology of sports <sup>c</sup>	1

<sup>a</sup> American Sociological Association section.

<sup>b</sup> Sociological Abstracts subject.

<sup>c</sup> Sociological Abstracts subdiscipline.

Source: Wallander, 2009, p. 508

# Key Features of Factorial Surveys

- Multidimensional design (i.e., simultaneous variation of multiple dimensions)
- Random assignment of the levels of dimensions to vignettes
- Random assignment of vignettes to respondents

# Why Apply Factorial Survey Experiments?

## Conceptual

- Broad spectrum of research questions
- Vignette may be adapted to the research context (e.g. table, text or video format)
- Identify different principles underlying social judgments and decisions
- Possibility to study rare combinations of characteristics

## Methodological

- Orthogonality (i.e., independence) of explanatory variables
- Causal interpretation of results regarding vignette dimensions (→ internal validity)
- Probably less prone to social desirability bias than direct questioning
- Integration into (representative) samples (→ external validity)

# Best of Both Worlds?

- Risk of social desirability and other methodological issues cannot be fully excluded
- ‚Validation studies‘: poor predictor of real behaviour? (more relevant when interested in decisions and behavioural intentions)
- Variation in designs of validation studies needs to be considered
  - See Petzold and Wolbring (2019) for a detailed discussion



# Summary

- Factorial surveys allow to identify the principles underlying judgements, attitudes, and behavioural intentions
- Causal interpretation of results regarding experimental conditions (not respondent characteristics)
- Representative samples ideal for external validity, but not necessary to establish causal relationships between vignette dimensions

# Outlook: Part II

- Experimental design: methodological issues and design choices
- Survey: response scales, data collection, and analysis

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