



Effective Communication
in Outbreak Management for Europe

[Design tool: how to design your own Discrete Choice Experiment on pandemic vaccinations]

This tool enables end users to collect their own data and obtain insights in the preferences of the population of other countries than currently included in the E-com@eu project. Noteworthy, as the analysis of the DCE questionnaire requires specific econometric knowledge, the E-com@eu group can conduct the analyses for the end users.

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DCE questionnaire.

The DCE questionnaire starts with an introduction of the hypothetical disease scenario:

“Imagine, a new disease emerged abroad. This disease is highly contagious, because the disease spreads by droplets. All over the world, people become infected, also in [insert country]. You can do some things yourself to prevent you of getting the disease (such as washing hands, etc.). However, the most effective preventive measure is a vaccination. Vaccinations are available for everyone in [insert country]”

Next, to facilitate comprehension of the DCE task, respondents need to be provided with detailed information about the type of questionnaire, the included attributes and attribute levels as well as with a clearly explained example of a choice task prior to preference elicitation.

The main part of each questionnaire comprises 16 choice sets. In each choice set, respondents first receive some additional information about the disease (i.e., the two scenario variables).

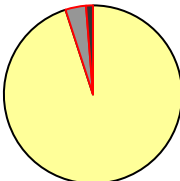
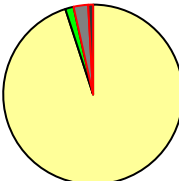
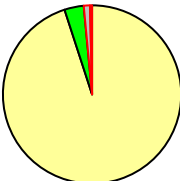
Choice set #1. Additional information regarding the new disease (the situation without vaccination):

<p>Susceptibility to the disease</p>	<p>50 out of 1.000 people will get sick (develop symptoms)</p>  <ul style="list-style-type: none"> ■ Healthy ■ Sick
<p>Severity of the disease</p>	<p>25% of all sick people will get severe symptoms</p>  <ul style="list-style-type: none"> ■ Healthy ■ Mild symptoms ■ Severe symptoms

The next part of the choice set consists of two unlabelled vaccination alternatives (vaccination A and vaccination B) and one opt-out alternative. This opt-out is necessary since, as in real life, respondents are not obliged to take a vaccination. Respondents are asked to consider all three alternatives in a

choice set as realistic alternatives and to choose the option that appealed most to them in the given disease situation.

Choice set #1. You can choose the following 3 options, what do you choose?

	Option 1: No vaccination	Option 2: Vaccination A	Option 3: Vaccination B
Effectiveness of the vaccine	<p>n.a.</p> <p>This means:</p> <p>50 out of 1.000 people will get sick</p>  <p>25% of these sick people will get severe symptoms</p>	<p>Effectiveness: 30%</p> <p>This means:</p> <p>15 out of 1.000 people <u>will not</u> get sick, due to vaccination</p> <p>35 out of 1.000 people <u>will get</u> sick, despite the vaccination</p>  <p>25% of these sick people will get severe symptoms</p>	<p>Effectiveness: 70%</p> <p>This means:</p> <p>35 out of 1.000 people <u>will not</u> get sick, due to vaccination</p> <p>15 out of 1.000 people <u>will get</u> sick, despite the vaccination</p>  <p>25% of these sick people will get severe symptoms</p>
Safety of the vaccine (long term severe side effects)	No side effects	Unknown, but expected to be safe	Unknown, no experience yet
Advice about the vaccine	n.a.	Recommended by your doctor	Recommended by family and friends
Media coverage about the vaccine	n.a.	Radio, newspapers and television positive	Radio, newspapers and television negative
Out-of-pocket costs	0 euro	50 euros	50 euros
What do you choose for yourself? (please tick one box only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Choice sets to include in the questionnaire.

Please find below an overview of the 48 choice sets that have to be used in the DCE questionnaire. The

48 choice sets are blocked into three questionnaire versions each containing 16 choice sets, in order to reduce the burden on the respondents.

Block #1

Choice set	Disease scenario		Vaccination program A					Vaccination program B				
	Characteristics		Characteristics					Characteristics				
	A	B	I	II	III	IV	V	I	II	III	IV	V
1	a	b	a	a	a	a	b	c	b	c	b	b
2	c	b	c	a	f	c	b	c	b	c	b	c
3	b	a	c	b	a	b	b	c	a	c	c	b
4	a	c	d	b	d	c	c	c	a	e	b	b
5	c	b	c	b	e	a	c	a	a	b	b	a
6	c	d	b	b	e	a	c	a	a	d	c	a
7	a	d	b	b	d	c	a	d	a	c	b	b
8	c	d	b	a	a	d	a	c	b	e	c	c
9	a	a	a	b	b	c	a	d	a	d	a	c
10	a	c	c	a	a	b	b	b	b	f	a	a
11	c	c	c	b	f	b	a	d	b	d	d	c
12	b	d	a	b	c	b	c	a	a	d	c	b
13	a	a	b	b	e	d	a	b	a	b	c	b
14	b	d	b	a	b	d	c	d	b	d	b	b
15	a	b	a	a	e	d	c	b	b	d	c	c
16	c	b	d	a	a	c	c	a	a	e	d	a

Block #2

Choice set	Disease scenario		Vaccination program A					Vaccination program B				
	Characteristics		Characteristics					Characteristics				
	A	B	I	II	III	IV	V	I	II	III	IV	V
17	b	a	b	b	b	a	b	c	b	a	c	c
18	b	b	c	b	b	c	a	b	a	a	b	b
19	b	c	d	a	f	a	c	c	b	a	c	a
20	c	d	b	a	d	d	a	d	b	b	a	c
21	c	d	a	a	e	d	b	a	b	a	b	b
22	b	c	c	b	b	a	b	d	a	d	d	b
23	b	a	b	b	a	c	b	b	a	c	a	b
24	a	a	c	b	e	b	b	d	a	f	d	a
25	b	c	a	b	f	c	a	d	a	c	a	b
26	b	a	d	a	f	d	c	b	b	c	a	a
27	a	a	c	b	d	a	a	c	a	e	c	c
28	c	a	a	a	b	b	a	d	b	c	d	c
29	c	c	a	a	e	a	a	b	b	f	b	c
30	c	c	c	a	b	b	b	b	b	d	a	a
31	a	d	b	a	f	c	c	a	b	b	d	a
32	a	d	c	a	c	a	a	a	b	b	d	a

Block#3

Choice set	Disease scenario		Vaccination program A					Vaccination program B				
	Characteristics		Characteristics					Characteristics				
	A	B	I	II	III	IV	V	I	II	III	IV	V
33	b	b	b	a	c	d	b	a	b	f	a	a
34	b	c	a	b	c	d	b	b	a	f	a	a
35	c	b	d	b	d	d	c	d	a	a	c	c
36	a	c	d	b	f	b	c	b	a	a	a	b
37	a	d	a	a	e	b	a	a	b	a	d	c
38	b	c	d	b	d	c	c	a	a	f	d	b
39	c	b	a	a	c	a	a	c	a	e	b	c
40	a	a	b	a	a	a	b	c	b	f	b	b
41	c	b	d	a	a	a	c	b	b	e	c	a
42	a	d	d	b	c	d	b	d	a	e	a	c
43	c	c	d	b	b	b	c	c	a	a	c	a
44	b	a	a	a	c	b	a	c	b	b	d	c
45	c	b	b	b	f	c	b	b	a	b	b	a
46	a	b	d	b	c	c	b	a	b	f	d	a
47	b	d	c	a	d	b	c	a	a	b	d	b
48	b	a	d	a	d	d	a	d	b	e	a	c

Code book – disease characteristics.

A. Susceptibility to the disease

- a. 5%
- b. 10%
- c. 20%

B. Severity of the disease

- a. 5%
- b. 25%
- c. 50%
- d. 75%

Code book – vaccination program characteristics.

I. Effectiveness of the vaccine

- a. 30%
- b. 50%
- c. 70%
- d. 90%

II. Safety of the vaccine

- a. Unknown, however, due to previous experience with the same sort vaccine, this new vaccine is supposed to be safe
- b. Unknown, no previous experience with this vaccine

III. Advice about the vaccine

- a. Your doctor recommends
- b. Your doctor advised against
- c. Your family and/or friends recommend
- d. Your family and/or friends advise against
- e. The national government recommends
- f. International organizations recommend

IV. Messages about the vaccine in the media

- a. Newspapers, television and radio are positive
- b. Newspapers, television and radio are negative
- c. Blogs, Twitter and social network sites are positive
- d. Blogs, Twitter and social network sites are negative

V. Out-of-pocket costs (Netherlands)

- a. 0 euro
- b. 50 euro
- c. 100 euro

Out-of-pocket costs (Spain)

- a. 0 euro

- b. 45 euro
- c. 90 euro

Out-of-pocket costs (Poland)

- a. 0 Polish Zloty
- b. 120 Polish Zloty
- c. 240 Polish Zloty

Out-of-pocket costs (Sweden)

- a. 0 Swedish Krona
- b. 500 Swedish Krona
- c. 1000 Swedish Krona

Vaccination program A of choice set 1 (i.e. code 'aaaab') represents a hypothetical pandemic vaccination program with the following characteristics: a vaccine with an effectiveness of 30% with an unknown side-effects on the long term, however, due to previous experience with the same sort vaccine, this new vaccine is supposed to be safe, the vaccine is recommended by your doctor, newspapers, television and radio are positive regarding the vaccine and the vaccine costs 50 euros. In the questionnaire, this treatment was presented together with vaccination program B of choice set 1 (i.e. code 'cbcb') with the following characteristics: a vaccine with an effectiveness of 70% with unknown side-effects on the long term, as there is no experience with this vaccine, the vaccine is recommended by friends and/or family, newspapers, television and radio are negative regarding the vaccine and the vaccine costs 50 euros.

Levels of the no vaccination option were defined as: not applicable (n.a.), no side effects, n.a., n.a., €0 respectively.

The survey should end with questions on socio-demographic characteristics of respondents.

Adaptation per country.



To be able to use the survey in any other country, some further changes to the survey need to be made. For example, adapt country naming, and currencies for the cost attribute based on the 'Organisation for Economic Co-operation and Development' (OECD) comparative price levels. The price levels can be found at the website of OECD.

Hereafter, the survey needs to be translated into the native language of the country of interest. A second translator needs to review the translated survey. To minimize differences between the original questionnaire and the translated version of the survey and to check for inconsistencies, native speakers need to translate the survey back to English.

More information:

The questionnaire needs to be completed by a representative sample of at least 500 respondents. The data collection can either be an online questionnaire or via a paper-pencil questionnaire.

Details and results of the DCE conducted in the Netherlands can be found in the published paper: 'Acceptance of vaccinations in pandemic outbreaks: A discrete choice experiment, written by Determann, D., Korfage, I.J., Lambooi, M.S., Bliemer, M., Richardus, J.H., Steyerberg, E.W., de Bekker-Grob, E.W. and published in PLOS One in 2014.

Additional information can be found in the E-com@eu project reports and deliverables.

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