

Eliciting health preferences in small and heterogeneous groups:

an introduction to preference paths and
their kaizen tasks with three examples

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HERC Seminar, 30 November 2021

Kai

Zen

A bold, black calligraphic representation of the Japanese character '改' (kai), which means 'change' or 'reform'. The character is written in a dynamic, expressive style with thick, black strokes.A bold, black calligraphic representation of the Japanese character '善' (zen), which means 'good' or 'virtue'. The character is written in a dynamic, expressive style with thick, black strokes.

Change

Good

Three types of preference evidence

Indifferences

- Time trade-off = 1 indifference
(no discounting, numeracy, salience, etc.)

Inequalities


- Paired comparison (A, B) = 1 inequality
(large samples, ethical considerations)
- Triplets (A, B, C) = 2 inequalities
(burden, IIA, ethical considerations)

Paths


- Kaizen task (33333 to 22222) = 10 inequalities
(???)

Three advantages of the kaizen task over a paired comparison or triplet

A preference path has much **more evidence** than a single response given a set of alternatives



A kaizen task relies on a **single profile** without a numeraire, making it easy to understand and quick to complete, particularly online



A kaizen task is **more respectful** to respondents, giving them control over the profile



Preference Paths and Their Kaizen Tasks for Small Samples

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Accepted: 15 July 2021

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Abstract

Background Stated preference research currently lacks a form of evidence that is well suited for small samples. A preference path is a sequence of two or more choices showing the evolution of an object following an adaptive process.

Objectives The aims were to introduce preference paths and their kaizen tasks and to demonstrate how to analyze their evidence using a small sample.

Methods Twenty respondents were assigned the same 16 profiles generated from an orthogonal array based on the five attributes of the EQ-5D-5L descriptive system. Each kaizen task began with an opt-out paired comparison (i.e., choosing between the initial 10-year profile and the opt-out “dying immediately”), followed by choosing three changes, and ended with a second paired comparison (final profile versus opt-out) if the respondent chose opt-out initially. By maximum likelihood with respondent clusters, we estimated the 20 main effects using conditional logit and Zermelo–Bradley–Terry (ZBT) specifications.

Results Apart from demonstrating heterogeneity and profile effects, all main effect estimates were non-negative, and most were significant (15 for logit and all 20 for ZBT; p value < 0.05). Under the logit and ZBT specifications, the value of the worst EQ-5D-5L profile (55555) is – 0.920 quality-adjusted life years (QALYs) or – 1.478 QALYs, respectively. Furthermore, the findings illustrate a log-linear relationship between the logit and ZBT main effects.

Conclusion This paper demonstrates the feasibility of a stated-preference study that estimates 20 main effects using path evidence from 20 respondents (16 kaizen tasks, 15-min interviews). This approach shows promise for future application in stated-preference research, particularly in small samples.

Using stated-preferences methods to develop a summary metric to determine successful treatment of children with a surgical condition: a study protocol

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Study population: 200 responses from parents and individuals with a surgical condition; 200 responses from health care professionals (and 1000 responses from adults in the general population)








Methods: 10 paired comparisons; 4 kaizen tasks

Paired Comparison

Which scenario describes the more successful result of the child's treatment?
Click Scenario A or B

	Scenario A	Scenario B
Operations	One major planned operation 	No major planned operations 
	One minor planned operation 	No minor planned operations 
	One major emergency operation 	No major emergency operations 
	One minor emergency operation 	No minor emergency operations 
Infections treated in hospital	One infection treated in hospital 	No infections treated in hospital 
Quality of life	Fair quality of life 	Fair quality of life 
Survival	Lived twenty years 	Lived one month 
Part 1. Click Scenario A or B	Scenario A	Scenario B









Practice task:
Part 2.Which characteristics would you change to improve scenario A?
(Please choose three characteristics from the second column)

	Scenario A	Select the characteristics in the order you would change them
Operations	One major planned operation 	
	One minor planned operation 	No minor planned operations <input type="checkbox"/>
	One major emergency operation 	No major emergency operations <input type="checkbox"/>
	One minor emergency operation 	No minor emergency operations <input type="checkbox"/>
Infections treated in hospital	One infection treated in hospital 	No infections treated in hospital <input type="checkbox"/>
Quality of life	Fair quality of life 	
Survival	Lived twenty years 	
Part 2.	Scenario A	Select the characteristics in the order you would change them

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Kaizen Task™

Which characteristics would you change to improve scenario A?
(Please choose three characteristics from the second column)

Practice task: Part 2.	Scenario A	Select the characteristics in the order you would change them
Operations	One major planned operation 	
	One minor planned operation 	No minor planned operations 
	No major emergency operations 	1
	No minor emergency operations 	3
Infections treated in hospital	No infections treated in hospital 	2
Quality of life	Fair quality of life 	
Survival	Lived twenty years 	
Part 2.	Scenario A	Select the characteristics in the order you would change them