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A MAGAZINE ABOUT CONTEMPORARY ECONOMIC ISSUES FOR EVERYONE

FROM THE EDITOR

People's choices depend crucially on their preferences, attitudes and personal characteristics. For economists, understanding these is paramount. In this issue of *EcoNZ@Otago* we look at which characteristics of 'developing' countries matter most to people thinking about making charitable donations. We also look at university students' attitudes; are they overly-optimistic about the marks they expect to earn? We identify which features of solar power generation people in Dunedin find most appealing. Finally, we explore what people's use of EFTPOS cards can tell us about New Zealand's economic performance. As usual, *Highlights* – short commentaries on economic issues – accompany selected articles.

Previous issues of *EcoNZ@Otago* are available online at www.business.otago.ac.nz/econ/econz. For enquiries, or to recommend topics for future issues, please contact us at the address below. The Department of Economics at Otago University is now on Facebook. Search for us at www.facebook.com and get connected!

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Charitable giving: How recipient-country characteristics influence donors' behaviour

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Imagine you are going to give \$20 to a charity, such as World Vision or UNICEF, that helps disadvantaged people in countries with standards of living well below New Zealand's. There are dozens of countries like this; most are in Africa, Asia, Latin America and the Pacific Islands. If your donation could go to one country only, which would you choose? A country with low average incomes, such as Niger, or one with high child mortality, such as Mali? Would you rather support a country with close ties to New Zealand, such as Samoa or the Cook Islands? Are there other things that matter to you more?

Determining which recipient-country characteristics matter most to potential donors (like you, perhaps!) would help charitable organisations to focus their marketing efforts on particular countries (or country 'types') to increase donations. These organisations could also better justify their funding decisions to stakeholders. At the national level, governments could discover whether or not their current aid allocations reflect the preferences of their citizens and alter their spending priorities if need be. Identifying what these important characteristics are is not very easy; however, it can be done.



CHARITY RESEARCH BEGINS AT HOME

Whenever you need to know something about a group of people, asking them is often a good place to start. A survey conducted at the University of Otago last year investigated the preferences of potential donors (university students). The survey attempted to identify the relative importance of the main characteristics exhibited by prospective recipients ('developing' countries who would receive the donations). Based on a review of the relevant literature (e.g. Feeny and Clarke, 2007) and discussions with senior staff at World Vision, the country-level characteristics included in the study were: average income per person; ties to New Zealand, e.g. geographical, political, historical; level of hunger and malnutrition; quality of infrastructure (schools, roads, water, electricity supply, etc); and rate of child mortality. These five characteristics and their levels of severity (from low to high) are reported in Table 1.

Table 1 - Country characteristics and levels within each characteristic

Characteristic
<i>Hunger and malnutrition:</i>
Low (most people aren't hungry)
Medium (some starvation)
High (lots of starvation)
<i>Child mortality (under age 5):</i>
Relatively low (0-49 deaths per 1000 children)
Medium (50-99 deaths per 1000 children)
High (100+ deaths per 1000 children)
<i>Quality of infrastructure (schools, roads, electricity supply, etc):</i>
Poor
Very poor
Extremely poor
<i>Average income per person:</i>
Poor (\$4-\$8 per day)
Very poor (\$1-\$3 per day)
Extremely poor (<\$1 per day)
<i>Ties to New Zealand, e.g. geographical, political, historical:</i>
None / low
Some

Nearly 700 Otago students completed an online survey to discover the relative importance (or 'weight') of each attribute – both to each participant individually and on average for the group as a whole. The survey was created and administered using 1000Minds software (www.1000minds.com) and is based on a well-established methodology

for analysing people's preferences known as a 'Discrete Choice Experiment' (McFadden, 1974) or 'Conjoint Analysis' (Green and Srinivasan, 1978).

To encourage the students to take the survey seriously, they were told that 200 of them would be selected at random and \$20, or \$4000 in total, would be given on their behalf to World Vision to spend in the country most closely matching the student's preferences as revealed in the survey. Participants were also asked about their past experiences of giving money or time to charities: 81% reported doing so at least once every six months. This is reassuring because a potential drawback of using university students in the study is that, having relatively low incomes, they might have been expected to have had little experience donating money to charity. Everyone who participated also received a ticket in a lottery to win a \$1000 cash prize, which they were given the opportunity of keeping themselves or donating to World Vision (of whom 26% did so).

EENY, MEENY MINY MOE

The online survey asked each participant to imagine they were giving money to a 'developing' country. They were offered, repeatedly, a choice between two hypothetical countries defined in terms of two of the five characteristics at a time and asked which country they would prefer to donate to. A screenshot from the survey appears in Figure 1. As you can see, answering this question requires confronting a trade-off: between extreme poverty ('country' on the right) or ties to New Zealand ('country' on the left). Each participant had to answer approximately 20 questions like this with different combinations of the five characteristics each time, taking about 5 to 10 minutes in total.

Thanks to the main algorithm at the heart of the 1000Minds software,³ the effect of answering these 20 questions is that each participant ends up having pairwise compared and ranked, either explicitly or implicitly, every possible combination of the two or three levels on the five criteria (see Table 1 again). This is achieved by the software's application of the 'transitivity' principle. If a person ranks hypothetical country A ahead of country B and also B ahead of country C, then, logically (by transitivity), A must be ranked ahead of C – and so the software would not ask a question pertaining to this third pairwise ranking.

Based on each participant's individual answers, the software calculates what are known as 'part-worth utilities' for each of the characteristics, representing their relative importance (or 'weight') to the participant with respect to choosing countries to donate money to. These individual part-worth utilities can also be aggregated across all participants by simply calculating their mean values, representing the characteristics' relative importance to the group as a whole.

Figure 1 – Example of a question from the survey

Suppose you're donating money to a developing country... Which of these 2 (hypothetical) 'countries' (combinations of characteristics) would you prefer your money went to? (given they're identical in all other respects)

Average income per person
Poor (\$4-\$8 per day)

Ties to NZ, eg. geographical, political, historical
Some

this one

this combination is impossible

or

Average income per person
Extremely poor (<\$1 per day)

Ties to NZ, eg. geographical, political, historical
None / low

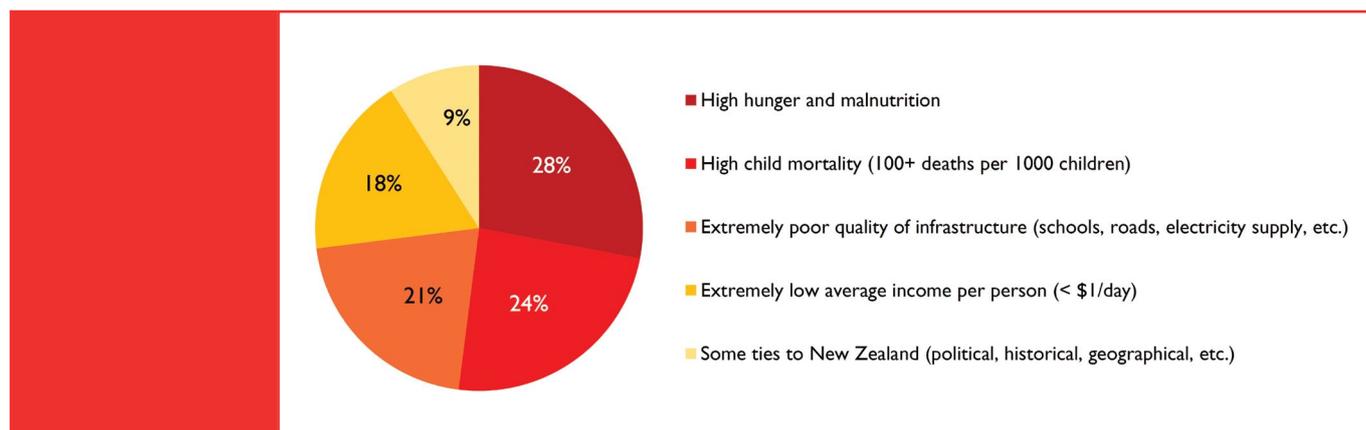
this one

this combination is impossible

they are equal

[skip this question for now >>](#)

Figure 2 – Country characteristics and their relative importance to study participants on average



SO, WHAT DO POTENTIAL DONORS CARE ABOUT MOST?

The relative importance of the characteristics for all participants on average is shown in Figure 2. As you can see, the most important characteristic is *hunger and malnutrition* (a weight of 28%) followed by *child mortality* (24%), *quality of infrastructure* (21%), *income per capita* (18%), and, last (and yes, least!) of all, *ties to NZ* (9%).

Another way of thinking about the numbers reported in Figure 2 is to express the weights as ratios of each other, representing the relative importance of one characteristic to another. Thus, *hunger and malnutrition* is, on average, 3.1 times more important than *ties to NZ* (=28%/9%) and 1.6 times more important than *average income per person* (=28%/18%); and so on.

The software also reveals which characteristic was considered most important for each participant individually. For 44% of participants, *hunger and malnutrition* is most important, followed by *child mortality* (27%), *quality of infrastructure* (15%), *income per capita* (10%) and *ties to NZ* (9%). These individual results are consistent with the average results in Figure 2.

FEED PEOPLE AND SAVE CHILDREN FIRST OF ALL

The study found that most participants would prefer that aid money goes to countries with high rates of hunger and malnutrition and child mortality respectively, rather than to low-income countries per se. Of course, many countries with low incomes also have the highest rates of hunger, malnutrition and child mortality, but not always. Ties between the donor and recipient countries was the least important of the five characteristics considered in our study, suggesting that potential donors are more concerned with 'need' than with geo-political or historical considerations. The quality of a country's infrastructure (schools, roads, water, electricity supply, etc.) is also relatively unimportant to potential donors. Our results suggest that international aid charities ought to focus their marketing efforts – as most do – on emphasising hunger, malnutrition and child mortality rather than other things.

AND THE WINNER IS?

Of the 15 countries supported by World Vision New Zealand, and for which we had data for all five country characteristics, Niger was the top-ranked country for 88% of participants based on their individual utilities – and so 88% of the \$4000 (\$3520) that we promised to be given on behalf of participants went to Niger. Niger stands out because it is maximally rated for all attributes except *ties to New Zealand* (which for most participants is relatively unimportant). The remainder of the money went to Timor Leste (\$261), Bangladesh (\$205) and Cambodia (\$17), as they were each ranked first by 6.5%, 5.1% and 0.4% of participants respectively.

Note that these results do not mean that participants would opt for almost all aid money to go to a *single* country. The study was designed to reveal which country characteristics people deem most important; hence a single country best fitting those attributes was identified. It could well be that participants, if given the option (which they were not), would have liked their \$20 to be spread over more than one country. Fear not though – many charities like World Vision give people the option of donating to more general funds. Once the funds are allocated across countries, knowing what donors care about the most can help charities decide how these general funds should be distributed.

QUESTIONS TO CONSIDER

1. How adequate, in your opinion, are the characteristics used for capturing what people consider when thinking about which countries to donate money to (see Table 1)? Should any other characteristics be included (in your opinion)?
2. Based on your own personal preferences, which of the five criteria included in the study is the most important? Which is the least important?
3. How would you answer the question posed in Figure 1?

REFERENCES AND FURTHER READING

- S Feeny & M Clarke (2007), What determines Australia's response to emergencies and natural disasters?, *Australian Economic Review*, 40(1), 24-36.
- P E Green & V Srinivasan (1978), Conjoint analysis in consumer research: Issues and outlook, *Journal of Consumer Research*, 5(2), 103-23.
- P Hansen, N Kergozou, S Knowles & P Thorsnes (2013), Developing countries in need: Which characteristics appeal most to people when donating money?, *University of Otago Economics Discussion Paper #1312*, available at www.business.otago.ac.nz/econ/research/discussionpapers/index.html.
- P Hansen & F Ombler (2008), A new method for scoring multi-attribute value models using pairwise rankings of alternatives, *Journal of Multi-Criteria Decision Analysis*, 15(3-4), 87-107.
- D McFadden (1974), Conditional logit analysis of qualitative choice behaviour, in P Zarembka (editor), *Frontiers in Econometrics*, New York: Academic Press.
- Wikipedia (2013a), Conjoint Analysis, available at en.wikipedia.org/wiki/Conjoint_analysis.
- Wikipedia (2013b), PAPRIKA, available at en.wikipedia.org/wiki/PAPRIKA.

1 Department of Economics, University of Otago.

2 Reserve Bank of New Zealand. This article is based on Nikki's research for her Honours degree (supervised by her co-authors here and Paul Thorsnes). A discussion paper is also available; see Hansen, Kergozou, Knowles and Thorsnes (2013).

3 Details about the algorithm, known as the PAPRIKA method, are available from Wikipedia (2013b) and Hansen & Ombler (2008).