

Internet Appendix A74 Latent Variable Modeling

A74.1 Illustrative Pitch Template Example in Marketing

Pitcher's Name	Thomas Magor	FoR category	1505	Date Completed	15/06/2015
(A) Working Title	Latent variable modelling of behavioural decision theory				
(B) Basic Research Question	Can the effects proposed by behavioural decision theorists be captured in a latent variable model?				
(C) Key paper(s)	Simonson, I. (2008) Will I like a “medium” pillow? Another look at constructed and inherent preferences, <i>Journal of Consumer Psychology</i> , 18(3): 155 – 169.				
(D) Motivation/Puzzle	The field of behavioural decision theory has contributed many interesting propositions about the nature of consumer decision making. While convincing, very few of these theories have been empirically tested using the formal choice models that are prevalent in marketing and consumer research. I am motivated to investigate whether (1) these behavioural theories can be empirically tested using latent (unobserved) variable models, (2) incorporating these behavioural theories into our model specifications improves out of sample predictions and (3) contributions to theory can be made by modelling these processes.				
THREE	Three core aspects of any empirical research project i.e. the “ IDioTs ” guide				
(E) Idea?	Behavioural theorists posit effects such as the “compromise” effect (Simonson, 1989) whereby when presented with multiple options, consumers tend to gravitate towards a middling option. Economists typically assume that consumers select their utility maximising option. Further, this assumption underpins the large majority of our empirical models of consumer choice (especially multinomial logit models). Ultimately, the purpose of this research is to explain and predict consumer choice behaviour where the independent variables are the nature of the options available in a particular market. If we can reconcile this tension between behavioural theory and neoclassical assumptions of economic behaviour, we will be able to build statistical models of consumer behaviour that are both behaviourally/theoretically appealing and conform to standard economic assumptions.				
(F) Data?	Data will be collected from consumers in various markets (e.g. fast moving consumer goods, public transportation) using discrete choice experiments. The unit of analysis is the individual consumer. Specifically, within-subjects experiments will be conducted. For the types of models being estimated, sample sizes in the order of 200 individuals will be required. A combination of datasets can be used which are both cross-sectional and longitudinal. I have completed preliminary work towards this project using panel dataset with records of consumers’ preferences obtained every 6 months over a 24 month period. This dataset was provided by a co-author on a paper I have worked on and is not commercially available. For ongoing work towards this project new discrete choice experiments will be designed and administered to a new sample (purchased from a commercially available panel, e.g. Qualtrics). In this regard, there is nothing particularly novel or new about the type of				

Cued Template taken from Faff, Robert W., Pitching Research (January 11, 2015). Available at SSRN: <http://ssrn.com/abstract=2462059> or <http://dx.doi.org/10.2139/ssrn.2462059>

	<p>data being collected.</p> <p>A benefit of using discrete choice experiments or choice data more generally is that it has both strong external validity and construct validity. That is, choices made within choice experiments are known to closely reflect the format of those made in real markets, hence their widespread use in demand estimation and demand forecasting. The dependent variable in a choice model is the choice itself (not a respondent's intention or perception); as such these types of data generation processes do not suffer construct validity issues.</p>
(G) Tools?	<p>A structural choice (regression) model will be estimated to the data collected. The discrete choice experiments will be designed using a combination of orthogonal designs (Street and Burgess, 2006), availability designs (Louviere, 2008), and manually contrived designs to include both asymmetrically dominated alternatives as well as compromise alternatives (Simonson and Tversky, 1993; Simonson, 1989). <i>DisCoS</i> (Rungie, 2013), which operates in the MatLab programming environment will be used to estimate the structural choice model, and NGene to generate the experimental designs. These programs are available on UQ Business School computers under a site license. These software packages are specifically designed for use with discrete choice data; hence they are compatible with the planned empirical framework discussed above.</p>
TWO	Two key questions
(H) What's New?	<p>The novelty of this project lies in the combination and reconciliation of rich behavioural theory with neoclassical economic assumptions using a new modelling approach. The use of the structural choice model (Rungie, Coote, Louviere 2011; 2012) is what brings these two disparate schools of thought together in an unconventional way.</p>
(I) So What?	<p>It is important to know whether incorporating behavioural theory into choice model specifications outperforms more conventional models as this has implications for demand forecasting in wide ranging applications (marketing, transportation planning, health economics, etc.). The way in which organisations/governments go about estimating the value of products/projects to customers/citizens via survey methods can be improved as an outcome of this research.</p>
ONE	One bottom line
(J) Contribution?	<p>Latent variable modelling of behavioural decision theory meets several key objectives. The approach is relatively straightforward to implement using newly developed software by Rungie (2013), which has previously been unavailable to researchers in the field of discrete choice modelling. Prior to the development of both this model and software, latent variable modelling of the data structures typical of discrete choice experiments was a major challenge. Second, a latent variable model in this context has the advantage of being able to both empirically test behavioural theory using choice data, while simultaneously providing policy makers/marketing decision makers with better fitting models of choice outcomes.</p>
(K) Other Considerations	<p>Target Journal(s): Journal of Marketing Research, Journal of Choice Modelling</p> <p>Collaboration: There are opportunities to work with other researchers in this field located both within and outside Australia. Such collaboration would not require significant (if any) additional funding.</p> <p>Risk: Low.</p>