International Review of Economics Education 14 (2013) 57–70

Contents lists available at SciVerse ScienceDirect

International Review of Economics Education

journal homepage: www.elsevier.com/locate/iree

Of mice and pens: A discrete choice experiment on student preferences for assignment systems in economics

Darragh Flannery [a,*], Brendan Kennelly [b], Edel Doherty [b], Stephen Hynes [b], John Considine [c]

[a] Department of Economics, University of Limerick, Ireland
[b] Cairnes School of Business and Economics, NUI Galway, Ireland
[c] Department of Economics, University College Cork, Ireland

ARTICLE INFO

Article history:
Available online 9 May 2013

JEL classification:
A20
A22

Keywords:
Discrete choice experiment
Willingness to pay
Latent class model
Assignment systems
Student preferences

ABSTRACT

With the development of online open courses, tailoring assignment systems to help students achieve their individual learning objectives will be possible. It is important therefore, from both an educational and business perspective, to understand more about how students value the different characteristics of assignment systems. The main contribution of this paper is the use of a discrete choice experiment to elicit students' preferences for various possible attributes of alternative assignment systems. Our results indicate that students have the strongest preference for assignment systems containing questions that have a high relevance for exam preparation. Our results also indicate that there is a high degree of heterogeneity within the student cohort in their preferences towards various attributes of assignment systems.

1. Introduction

Learning systems and universities are changing rapidly due to social, economic and technological changes. The diffusion of fast Internet access has made the use of online resources within the learning process more and more common and is particularly evident in the provision of course assignments. The main attraction of online assignments is that instructors can assign regular assignments to large

* Corresponding author. Tel.: +00 353 61202975.
E-mail addresses: darragh.flannery@ul.ie (D. Flannery), brendan.kennelly@nuigalway.ie (B. Kennelly), edel.doherty@nuigalway.ie (E. Doherty), stephen.hynes@nuigalway.ie (S. Hynes), j.considine@ucc.ie (J. Considine).

1477-3880/$ – see front matter © 2013 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.iree.2013.04.019

classes knowing that the students will be able to receive timely feedback on the assignments they had submitted online. Disciplines such as economics has already experienced a large increase in the use of online assignment services and their use in economics and other disciplines is likely to increase significantly as more students take online courses. The increased use of online assignments prompts two issues that are worth investigating from an economics perspective. The first issue is whether online assignments are more or less effective in helping students learn economics (Lee et al., 2010; Trost and Salchi-Isfahani, 2012; Galizzi, 2010; Kennelly et al., 2011; Flannery et al., 2013). The second issue which is the focus of this paper concerns students' preferences for different kinds of assignments. Students are seldom involved in the choice of assignment systems and, therefore, there is little direct evidence on how students value online or paper assignments. In particular we don't know much about what attributes of online or paper assignments are especially useful and valuable to students. An assignment system is rarely, if ever, offered as an optional extra that the students could choose to purchase. With the development of massive online open courses (MOOCs) it is possible to imagine thousands of students who are taking an online course being offered a menu of assignment systems that they can choose from to help them succeed in realizing their individual learning objectives. Some students might choose assignment systems with a relatively large weight devoted to regular assignments while others might prefer that more of the assessment be based on examinations. The theoretical and empirical analysis in a study by Guest (2005) indicates that a shift to a more student-centred approach to teaching and learning that gives students greater choice over their learning environment or technology is likely to improve academic achievement for some students but not others. Our paper builds on this by examining in more detail how students think about the different characteristics of assignment systems. Our results are likely to be of interest from both educational and business perspectives.

Specifically, the main contribution of this paper is that we use a discrete choice experiment (DCE) to elicit students' preferences for assignment systems. The use of DCEs has increased significantly in recent years in areas such as environmental economics (Scarpa et al., 2007), health economics (Ryan et al., 2008), transport (Grisolía and Ortúzar, 2010) and cultural economics (Grisolía and Willis, 2011). Several comprehensive reviews of the basic technique and methodological developments in the analysis of DCEs have appeared in recent years (Louviere et al., 2011; De Bekker-Grob et al., 2010). As far as we are aware, DCEs have not yet been used to elicit students' preferences over different assessment systems and we think that our research will mark an interesting and innovative step in developing our understanding of what students think about different assignment systems.[1]

Our choice experiment was conducted with over 170 students in two intermediate economics classes at the National University of Ireland, Galway (NUI Galway). The students were a particularly suitable group for this experiment as many of them had experience in two different online assignment systems in economics courses that they had taken prior to the experiment. They had been required to purchase the Aplia online service for their principles of economics course and they also had used a free online service (Blackboard) for weekly assignments in a managerial economics course. They also had experience of traditional pen and paper assignments in courses in other disciplines.

The rest of the paper is organised as follows. We begin by outlining our methodological approach in detail including a brief introduction to DCEs and the econometric models that are used to analyse the data. The following section contains a detailed description of our experimental design and process as well as descriptive statistics of some of the key variables. Next we present results from the basic conditional logit model and from a series of latent class models which allow us to explore heterogeneity in students' preferences. This section also includes some simulations where we estimate what students would be willing to pay for certain hypothetical assignment systems. We conclude the paper with a discussion of the implications of our results.

[1] Flores and Savage (2007) do present choice experiment data to gauge student demand for streaming of lecture, however, the methodology employed here is not reflective of a robust DCE and their results may be biased given the modelling framework used.