

# University Embeddedness: Validating a new means for predicting retention and curbing dropout

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## Abstract

*Student retention is a significant issue for the higher education sector. There is need for a tool that can reliably identify students at risk of dropout or before their performance begins to deteriorate. Borrowing a relatively new concept from organisational psychology that has been found to reliably determine how “enmeshed” or “embedded” an employee is within their employment, the “university embeddedness” concept was tested using data from an online survey. Structural Equation Modeling revealed some encouraging results in support of future development of the new construct, however certain hurdles remain.*

## Introduction

It is estimated that approximately 20% of all domestic students drop out of university before entering second year (Coates, 2009), and one in 15 plan to change universities (Coates, 2013, in Schmidt, 2013). Accordingly, substantial effort and considerable resources are expended on a range of measures in a bid to keep university students following enrollment (Williford & Schaller, 2005). Given the increasing level of competition for students those students in two minds as to whether to continue should be a high priority for targeted effort. Those students experiencing uncertainty about continuing or are having difficulty academically or socially can be directed to services and programs that exist in one form or another across all universities: health and wellbeing counselling, course advice, study skills assistance, remedial classes, mentoring programs, and so on. Not surprisingly, the timely accessibility of support services has been identified as a key determinant in retaining students (Nelson, Clarke, Kift & Creagh, 2011; Penn-Edwards & Donnison, 2011). With such support and assistance many of these at-risk students will be better equipped to continue, or perhaps defer their studies just until they are better placed to continue.

Student retention is thus a significant issue for the whole higher education sector (Adams, Banks, Davis & Dickson, 2010; Penn-Edwards & Donnison, 2011). Numerous programs exist with the aim of arresting the annual dropout amongst the first-year cohort in particular, generally targeting students whose attendance (or engagement with online systems) and/or performance has fallen below a certain level. Nelson, Clarke, Kift and Creagh (2011) suggest that to successfully retain students universities need to engage them through embedded institutional programs. Such programs should focus on factors including engaging students in the learning environment and fostering a sense of ‘belonging’. Adopting a holistic approach “inclusive of academic, social and emotional factors and catering to the needs of specific sub-groups” (Nelson, Clarke, Kift & Creagh, 2011, p. 38) is important to retaining students beyond the first year.

Some intervention schemes have been reported as successful. For example, Schargel & Smink, 2001; Wilson, Tanner-Smith, Lipsey, Steinka-Fry, & Morrison, 2011). In the United States a longitudinal study assessing 1,000 primary school children’s development concluded that by the end of the third-grade those that received ‘higher-quality’ childcare demonstrated

improved cognitive abilities, language skills and less problem behaviours (Schargel & Smink, 2001). In a study of general dropout programs, it was concluded that dropout programs, and those specialised for teen parents, were effective at improving school completion rates, thus curbing dropout (Wilson, Tanner-Smith, Lipsey, Steinka-Fry, & Morrison, 2011). However their degree of success will rely on the timely and efficient identification of candidate students. Such initiatives might achieve greater impact if the at-risk students were identified *before* their attendance and performance had already begun to suffer; if students were “targeted” before they started to get into trouble. A core aim of this project was to better identify students at risk of leaving university *before* their experience had soured and they have come to the attention of advisors or progress monitors due to low performance.

In a bid to identify and target students at potential risk of dropping out assumptions are often made regarding socioeconomic status and other demographic variables such as first-in-family. This results in a scattergun approach that will include both false positives, such as when a student is put into a first-in-family scheme based on that demographic alone. This wastes resources and can result in negative connotations often associated with labelling (Rosenhan, 1973). A new approach is needed.

Polanyi (1944) noted that economic markets and social relationships are entwined and proposed the concept of embeddedness in an attempt to understand economic behaviour in society. Refining this concept further, Granovetter (1985) suggested the idea of ‘social embeddedness’, proposing that networks of social relationships significantly influence action. As such, an individual’s action emerges from a flow of interactions and changing relations with others.

The theoretical underpinnings of ‘embeddedness’ provide a differentiated way of viewing societal institutions. Fields associated with human resources, management, and organisational psychology have grappled with the concepts of job satisfaction, job retention (or the obverse – turnover), and so on for some time. Traditional explanations for employee turnover/retention boil down to a combination of two factors (Mitchell, Holtom, Lee, Sablinski, & Erez, 2001): “job attitudes” includes facets such as satisfaction and commitment; and the availability and ease of movement to viable and preferred employment alternatives.

Job Embeddedness (JE) was first proposed by Mitchell and colleagues (Mitchell, et al, 2001) as a means of explaining why employees stay or quitting. It is described as a web or net in which one becomes ‘stuck’. This web is made up of the interconnections between the employee and the employing organisation. The three central components to embeddedness are links, fit, and sacrifice. Linkages may be formal or informal; with people or the organisation or activities; social or psychological or financial; within or outside the workplace; any and all discernible connections that may tie an individual to their employment position (Holtman & O’Neill, 2004). Fit is the extent to which the employment community is similar to, or fits with, the other communities in which the individual is involved, such as family, neighbourhood, and so on (Reitz & Anderson, 2011). The sacrifice component refers to the perceived costs of leaving a job, both material and psychological, and both now and in the future (such as time accruing towards some future benefit, like long service leave). The concept of Job Embeddedness is anchored in sound psychological theory and has enjoyed significant empirical support across a number of industries (Hom, Tsui, Wu, Lee, Zhang, FU & Li, 2009; Reitz & Anderson, 2011).

The current project sought to explore the potential for redeveloping the JE concept into a “University Embeddedness” construct. In order to assess the potential validity of such an

approach, a pilot study was conducted to explore the construct with students from a university.

## Method

### *Participants*

Participants consisted of 105 university students (17 male and 74 female, 14 unknown) aged 18-55 ( $M = 34.01$ ,  $SD = 11.98$ ) enrolled in various courses across multiple campuses in Australia. Respondents ranged from first-year to higher degree candidates.

### *Materials*

A 32-item instrument was adapted for university students using the Mitchell, Holtom, Lee, Sablynski, and Erez (2001) Job Embeddedness instrument as a basis for development. Sub-categories within the overall University Embeddedness construct include; student fit to the community in which they live (“I really love this place”), fit with the university (“I like the responsibilities of being a student”), links to the local community (“This area provides lots of recreational activities”), links to the university (“Involvement in study groups”), and a measure exploring attitudes about what might be sacrificed should students decide to leave university (“One or more students depend on me”) and the community (“I have strong friendship ties in the area”).

### *Procedure*

The online questionnaire was hosted via Survey Monkey and advertised via a number of measures within Monash University. Data was collected with Monash Human Ethics (MUHREC) approval.

## Results & Discussion

The means and standard deviations for each of the sub-scales of the University Embeddedness instrument are contained in Table 1, along with self-reported number of years spent at university. All 105 respondents completed all 6 sub-scales and supplied university tenure.

	Fit with University	Fit with Community	Links with University	Links with Community	Sacrifice Leaving Community	Sacrifice Leaving University	Length of Time at University
Mean	49.96	53.63	31.12	18.26	51.69	16.90	2.79
Std. Dev.	14.78	7.86	5.39	4.73	8.59	4.80	1.72
Range	16-73	34-68	20-45	8-53	32-65	8-27	0-6

***Table 1. Descriptive statistics for the sub-scales of the University Embeddedness instrument, including mean, standard deviation, and range of scores.***

The relationship between variables in the model, regression weights and associated significance values are located in Table 2.

Dependent Variable	Independent Variable	Standardised $\beta$	Significance $p$
Length of time at University	Fit with University	.46	.001*
Length of time at University	Fit with Community	-.01	.947
Length of time at University	Links with University	.08	.341
Length of time at University	Links with Community	-.01	.960
Length of time at University	Sacrifice Community	-.16	.065
Length of time at University	Sacrifice University	.15	.085

Note: \* Indicates significance obtained.

**Table 2. Standardised Beta weights and significance for the relationship between variables**

In order to test the University Embeddedness instrument as an effective predictor of longevity at university a structural equation analysis was performed. Overall, this particular model ( $\chi^2(15, N=105) = 246.72, p = .001$ ) was not a good fit for the construct and requires further consideration. Results for the Comparative Fit Index (.12), Normed Fit Index (.13) and Goodness of Fit Index (.58) all have cut-off values ( $< .90$ ) below the recommended thresholds (Byrne, 1994; Schumaker & Lomax, 2004). The effect size for ‘length of time at university’ ( $r^2 = .27$ ) explained 27% of the variance. The results indicate that there is potential to further develop and enhance the construct.

Student perceptions of fit with the university were the strongest predictor of longevity at university; this was also the only statistically significant factor. Other factors of interest include student perceptions of sacrifice, or what a student would have to ‘give up’, in order to leave university and/or their community. Perceived fit with the community, along with social links with the community and the university did not significantly predict longevity.

The University Embeddedness construct provides a plausible indication that such an instrument holds promise with further refinement, however, as a pilot, the present study was limited by sample size. Access to a broader array of participants in order to adequately test the construct is needed. Additionally the university tenure dependent variable might be better refined to number of semesters, or perhaps months at university. A significant limitation of this, is that it did not capture data from students with either the intention of quitting.

#### *Questions for discussion*

1. University Embeddedness includes a specific set of internal and external influences (fit, links and sacrifice) on how enmeshed the student is in their university.
  - a. What factors are important for students to stay or leave?
  - b. How might the student context differ from the employee context?
  - c. Should it be about university or study?
  
2. Should a refined version of this instrument (or a related one) be found to have sufficient predictive power how, or even *should*, it be administered in a prospective manner?
  - a. Should students be required to complete some sort of online “embeddedness status” test each time they re-enroll?
  - b. Should students who score below some level be identified and targeted with automated (optional) referral to existing support services?
  - c. Should those scoring lower still be required to make an appointment with a course advisor or similar, and be followed up?

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