Assessing student attitudes towards postgraduate study

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Abstract/Summary

Many university administrators, faculty and marketers spend time and financial resources promoting postgraduate study options, yet scant scholarly research has addressed students’ attraction to postgraduate study. This study examines awareness and knowledge of, and intentions to pursue postgraduate study from the perspective of current undergraduate students. A survey of 340 first, second and third year business/management students revealed no statistically significant differences between the cohort years, revealing opportunities for universities to disseminate important aspects of postgraduate study at appropriate times. The significant link between the university’s promotion of postgraduate study and students’ intentions to progress to postgraduate study is demonstrated through structural equation modeling. Implications for practice are addressed.

Keywords: career development; decision making; educational research; management education; student choice
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In efforts to encourage lifelong learning, universities provide additional educational opportunities through postgraduate courses with both specialist and generalist curricula. Postgraduate courses are generally targeted at students who have already graduated from an undergraduate (UG) degree. With increasing investment in postgraduate (PG) courses, it is important to many university administrators to know how and when to offer PG studies to potential students. Potential PG students may come from either current UG students or graduates who are currently in the workforce, or both. This paper addresses the PG student pipeline that relates to current UG students. The paper examines the degree to which current UG students are aware of the university’s PG offerings, the degree to which the students feel they are knowledgeable about the university’s PG offerings and the level of intentions of those UG students to pursue PG study. We investigate the differences between first, second and third year students in their self-reported knowledge and attitudes towards PG study.

In Australia students graduating from a three year bachelors degree have numerous postgraduate study options. Honours is the most natural extension of a bachelors degree and it is considered a key indicator of research potential, often providing scholarship pathways into higher research degrees (Zeegers and Barron, 2009). Often students bypass honours, or follow up honours with masters study. Masters study is particularly attractive to some currently-studying UG students who intended completing their studies with a bachelor degree but wish to specialize. On the other hand, students who complete a first degree in a specialized field but wish to generalize their knowledge by continuing to broader study may supplement their UG degree with a masters course. Graduates of an honours or a research-based masters degree may then aspire to a doctoral degree.

Despite the benefits of PG study, the recruitment of PG students remains a challenge for university administrators and marketers, as the direct and immediate benefits of work place students into the workforce for which they have been educated. The ability to predict the quantity and quality of students seeking to enroll in an institution’s PG study programme is of crucial interest to university administrators, programme coordinators, deans and heads of department (Jepsen & Neumann, 2010).
Similarly, the opportunity to influence an institution’s current UG cohort to consider PG study is an important role for many academics and administrators (Jepsen & Neumann, 2010). Researchers have yet to closely examine the decision-making involved in the formulation of PG intentions despite the multifaceted institutional and individual implications associated with the decision. Little is known about the antecedents involved in the development of PG intentions.

Research on postgraduate intentions has been limited to specific populations such as women (Brown, 2004), dental students (Scarbecz and Ross, 2007), Greek working women (Vryonides and Vitsilakis, 2008) and American and Chinese college students (Ling-Yi, 2006). Research has also been limited due to its post hoc nature, focussing on students who had already completed their UG degrees and entered PG study. For instance, students currently enrolled in doctoral degrees were required to recollect and reflect upon their decision to pursue doctoral study ( Ehrenberg, 1992). Factors impacting on entry into PG study include age (Hearn, 1987), gender (Farmer et al., 1995), race (Liu, 1998), class year (Long et al., 1995), levels of self-efficacy (Gianakos, 2001) and approaches to career-decision-making (Niles et al., 1997). Post hoc studies have also examined the likelihood of pursuing PG study as a function of economic fluctuations (Bedard and Herman, 2008).

Only recently have researchers begun to build a picture of PG study intentions from the perspective of students who are currently enrolled in bachelor degrees. Working with the premise that students can have more or less PG intentions at any time throughout their UG degree, initial research assessing the PG intentions of psychology students (Jepsen and Neumann, 2008) found little change over one semester. Extending that work to examine the awareness, knowledge and aspirations for PG study in business students, Varhegyi and Jepsen (2009b) conducted a preliminary focus groups investigation. Focus groups conducted across first, second and third year students in a well-established city university revealed misconceptions regarding PG study. The study identified four key influencers to be articulated clearly, early and frequently to UG students. The key issues identified were the specific entry requirements into different PG options, the costs of the PG degrees, the financing options available to different students and the expected duration of the PG degrees.
A subsequent study (Varhegyi and Jepsen, 2009a) compared the knowledge about PG study in business UG students in two universities. Results suggest differences in PG intentions in the universities may be attributable to the increased length of scholarships in one university over another. Results supported previous findings that despite an increased expectation to pursue a fourth year, students were misinformed on the four key issues of entry requirements, financing options, content and duration of PG degrees. The decision to enroll in a PG degree is influenced by a variety of factors, including students’ awareness and knowledge about the relevant PG degree options.

A student’s awareness and knowledge of postgraduate study options is likely to fluctuate as they progress through their bachelors study. For universities to reach students in time with appropriate information to encourage students to study further, it is important to understand when students are likely to begin thinking about PG study, and to identify differences in students in different years of study. Little is known about the changes that occur in PG intentions across time.

The first study to examine the effect of time on PG intentions (Jepsen and Neumann, 2010) used psychology students. The study examined how students changed their intentions to progress to PG studies or changed their preferences for PG specialty over a single semester. An intervention to encourage students to progress beyond the UG level was included in the study. Despite the intervention, students demonstrated only slight changes in their intentions to pursue PG study over the semester. Students neither changed their preferences for the type of masters course in which they might enroll, nor did students change the type of PG degree they preferred.

It is possible that a longer time frame may provide different results. While one semester failed to identify strong changes in PG intentions, cohort differences may be more evident in first, second and third year UG students. First year students entering a general degree such as business or management may feel overwhelmed by the expectations of university and may be focused on adjusting rather than contemplating further study in the long term. Consequently we would expect to see little awareness of PG offerings in business or management students in their first year at university. By second year, students could be expected to exhibit somewhat higher levels of PG
knowledge and intentions as a result of increased awareness of PG offerings. It is reasonable to suggest that second year students are more aware of university life other than their own subjects, sports and social interests. A student completing third year would plausibly demonstrate still higher levels of awareness of PG offerings. These students are likely to be engaged in contemplation and preparation for employment and actively seek employment information. Increasing levels of awareness and knowledge of PG degree options are assumed the longer a student is at university.

To increase their PG student numbers, universities market their PG options to current students through a variety of means including direct personal or written appeals from academic staff to high performing third year students, information sessions, flyers and leaflets distributed to students in class, broadcast emails, announcements and advertising in mass and targeted media. It is assumed that the marketing information includes relevant PG study information likely to raise students’ awareness and knowledge. It is also assumed that the amount of PG study options information provided to students increases as students mature through their university degree. In this sense, first year students are likely to have less knowledge than awareness. We would like to think that third year students are fully informed and knowledgeable about their future study options so they may make an informed decision to continue to work or to continue to further study.

The point within an UG degree where PG marketing efforts would be more effective remains unknown. Similarly, it has yet to be identified as to which year levels should receive more intense PG marketing compared to other years, in order to maximise marketing effectiveness. Perhaps the idea of PG study should be planted early so first year students understand and have time to achieve the grade point average entry requirements for an honours year. Perhaps second year students should be targeted for intensive PG marketing so they may have a last-ditch effort to achieve honours entry or otherwise contemplate delayed workforce entry. Or perhaps the traditional final year attention is appropriately directed to those students who have performed well to achieve honours entry requirements or have developed their interest in further specialist PG study. The cohort segments to which faculty and marketers should direct their attention to are unclear.
This study is intended to address the question of how the year cohorts of UG students differ in their awareness, knowledge and intentions towards PG study. The aim of this study is to establish the extent to which UG students differ in their attitudes towards PG study over the course of three years. It is hypothesized that:

H1: Students’ tenure at university will positively predict their level of awareness and knowledge of, and their intentions for PG courses.

Further, we suggest that students’ awareness and knowledge of PG courses will come from the advertising and marketing of the PG courses that is conducted within their university. The marketing literature tells us that when considering whether to accept or reject a new product concept consumers proceed through a six step adoption process. The steps are awareness, interest, evaluation, trial, decision and confirmation (Rogers and Shoemaker, 1968). Learning about the product plays a key role, with evaluation and trial being key learning components in this process. There are many complexities in applying that model to the marketing of PG studies to UG students, however. Complexities include whether the student will be eligible for entry into the PG course, the long lead time between the decision to proceed to PG studies before the limited enrolment time period and the prescribed start dates. Sources of information change during the UG degree. The traditionally trustworthy parent is no longer a reliable source of advice on PG education (Varhegyi and Jepsen, 2009a, Varhegyi and Jepsen, 2009b). Informed sources such as employers may not yet be available to the UG student. UG students report a desire to hear about PG study from new and young academics rather than from older academics (Varhegyi and Jepsen, 2009b, Varhegyi and Jepsen, 2009a). Other complexities in applying the new product concept marketing model include the UG student not being in a position to be able to trial the PG course. However, students use their personal networks, the web and advertising resources available to them and form opinions about the PG study offerings. We suggest that the university’s marketing of the PG courses, combined with students’ levels of awareness and knowledge about the PG courses will predict students’ intentions to pursue PG study:
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H2: Students’ awareness and knowledge of PG degrees, combined with university marketing, will positively predict students’ intentions to pursue PG study.

METHOD

As part of a wider study, a survey was distributed to first, second and third year undergraduate business students at a metropolitan university in Sydney, Australia. Surveys were distributed in strategic management, human resources management, marketing and international business classes during lecture or tutorial time to those students who volunteered to participate in the study. Students were given lollipops as an incentive to participate. There were 333 surveys distributed and returned. Nine surveys were removed due to missing data, outliers or not declaring their first, second or third year category, leaving 324 responses for analysis. There were 126 male (39 per cent) and 198 female (61 per cent) respondents aged from 17 to 25 years. There were 297 (92 per cent) full time and 27 (8 per cent) part time students and 51 (15 per cent) were on a scholarship. There were 251 (77 per cent) local students and 73 (23 per cent) international students. There were 194 (55 per cent) respondents in first year, 68 (19 per cent) respondents in second year and 85 (24 per cent) respondents in third year.

Measures

Awareness. Students’ level of awareness of PG study options was assessed using four items developed by the authors. The items were intended to assess the extent to which students were aware of the different PG study options at the university. One item was used to refer to each of the different PG options including “I am aware of an honours program for my degree” and “I am aware of a coursework masters program for my degree program”. Cronbach’s alpha reliability was .83.

Knowledge. Students’ ratings of the level of their knowledge of PG study intentions was measured using four items also developed by the authors. The items were intended to assess the extent to which students felt they were knowledgeable about each of the PG study options. The items used included “I know what is required in the honours program” and “I know what is required in the coursework masters program”. The Cronbach’s alpha reliability was .89.
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Intentions. Students’ PG study intentions was measured using four items adapted from a prior study (Jepsen and Neumann, 2010). The items were intended to assess the extent to which students felt they were likely to pursue PG study. Items included “I intend studying an honours program” and “I intend studying a masters program”. The Cronbach’s alpha reliability was .73.

Promoting PG study. Students’ impressions of the marketing or promotion of PG courses in their university was measured using two items developed by the authors. The items were intended to assess the effectiveness of the university’s advertising and promotion for their PG courses. The items were “My university effectively advertises PG courses” and “I know where and how to find information about PG courses at my university”. A third item was included to assess the level of interest that the student had in finding out more about the PG courses. That item read “I would like to know more about the PG courses provided at my university”. Cronbach’s alpha coefficient was .64. A five point Likert scale with 1 = Strongly Disagree to 5 = Strongly Agree was used for all scales.

RESULTS

The means, standard deviations, correlations and reliabilities for the scales are included in Table 1. Cronbach alpha reliabilities were satisfactory at above .7 for all scales other than the two-item promotions scale. Correlations between scales were found, however the correlations are not so large as to be considered the same construct. Awareness and knowledge correlate moderately with each other (.45) and with promotions (.38 and .39 respectively). To a smaller but significant degree, students’ intentions to pursue PG study correlates with awareness (.22) and knowledge (.28).

The first analysis investigated students’ awareness and knowledge of, and intentions for PG study by each year cohort. We hypothesized those students who had been at the university the longest would have increased awareness PG courses available at that university, increased knowledge of those courses and increased intentions to progress to PG study. Table 2 shows the results.

*** Insert Table 1 about here ***

*** Insert Table 2 about here ***
An ANOVA was conducted to determine the extent to which first, second and third year students differed in each of their awareness, knowledge and intentions for PG study. The results of the Levene test for homogeneity of variances indicated that there were no statistically significant differences in variances between the three cohorts of years at university and so the ANOVA results are unlikely to be distorted by sample size differences. Results indicated no significant differences between first, second and third year students’ awareness ($F(2, 293) = .688, p = .504$) knowledge ($F(2, 293) = .119, p = .888$), or intentions to progress to PG study ($F(2, 293) = .775, p = .462$).

In a non-hypothesised analysis, students indicated they did want to know more about the PG courses at their university, with first second and third year students agreeing or strongly agreeing with that statement 53, 46 and 41 per cent respectively.

With respect to the second hypothesis, a measurement model using all the variables confirmed that there was sufficient discrimination between the variables. To determine the relationships between the variables, a structural equation model was created using AMOS 17 (Arbuckle, 2006). The hypothesized model was tested with data from first, second and third year students. Beyond correlation of the knowledge and awareness error terms, the modification indices and standardized residuals indicated no further improvements to the model, which generated a $\chi^2$ $(df) = 588.938$ $(276)$, $P = .000$. The path diagram and standardized coefficients are presented in Figure 1.

All the paths between the latent variables and their indicators were statistically significant, indicating the latent variables are well-constructed with appropriate and valid indicators. Next, all the paths shown on the model between the latent variables were statistically significant. The first path, between promotion and awareness, was statistically significant (std. coeff = .497, $p < .001$). The standardized coefficient indicates that a one standard deviation increase in PG promotion is associated with a .497 standard deviation increase in awareness. The paths between promotion and knowledge (.387, $p < .001$), awareness and knowledge (.241, $p < .01$) and between knowledge and intentions were also statistically significant (.343, $p < .001$).
A variety of measures of model fit provide support for the model (Maruyama, 1998). First, the relative chi-square, the ratio of this model's chi-square value to its degrees of freedom was 2.134. Values below 5 indicate adequate model fit (Schumacker and Lomax, 2004). Next, the model’s comparative fit index (CFI) of .950, indicated excellent fit (Hatcher, 1994). Finally, the model’s RMSEA of .037 indicates excellent model fit as it is below the suggested value of .05 (Schumacker and Lomax, 2004). Incorporating sample size and degrees of freedom, the incremental fit index of 0.950 (Bollen, 1989). Overall, these measures indicate excellent fit for this model.

DISCUSSION

The study investigated UG students’ attitudes towards PG study. The first hypothesis examined the degree to which student tenure predicted students’ awareness and knowledge of, and intentions to pursue, PG study. The results indicate there were no statistically significant differences between first, second and third year students’ attitudes towards PG study. This result could concern business school administrators seeking honours and PhD students to continue a research tradition, or to a business school seeking strong masters course enrolments.

Students have been known to acquire information about PG courses through a range of formal, informal and anecdotal sources. This diversity of sources frequently leads to confusion, misinformation and inconsistencies (Varhegyi and Jepsen, 2009b, Varhegyi and Jepsen, 2009a). In a result that may be comforting to university administrators and PG marketers, however, substantial percentages of first, second and third year students did report wanting to know more about the PG courses at their university. The results demonstrate that substantial numbers of students in all years are prepared to receive further information on PG study. More than half (53 per cent) of first year students reported wanting more information about their PG options and by third year there were still 41 per cent of students who wanted more information.

It was hypothesized that student attitudes towards the promotional activities combined with students’ awareness and knowledge of PG study would predict students’ intentions to pursue PG study. The hypothesis was supported with results that suggest relatively strong relationships between
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the variables. Promotion of PG courses strongly predicted both awareness (.50) and knowledge (.39), indicating perhaps that students recognize that the university – rather than parents, friends or others – is a major source of information about PG options. The relationship between awareness and knowledge (.24) contributes to the moderate relationship between knowledge about PG study and intentions to pursue PG study (.34). This result suggests, not unexpectedly, that knowledge about PG courses may be the key to increasing students’ intentions to progress to PG study. Earlier research (Jepsen & Varhegyi, 2009a, 2009b) suggesting these students seek information on the costs, timing, and entry criteria provides some detail about the content to be provided to current UG students. Further research is required to determine if that information is sufficient for student decision making.

There are a number of implications for practitioners in these results. The first implication for university administrators and marketers is to increase the low levels of knowledge that these UG students reported about all the PG options in first, second and third year students. Mean levels of knowledge for these students ranged from 2.22 to 2.28, leaving substantial scope for university administrators, academics and marketers to provide information about PG options. The non-significant nature of the differences was a counterintuitive result, given our expectation that awareness and knowledge of PG study options would increase over the course of a bachelor degree. The lack of discrimination between the student years presents an issue – and opportunity – for university administrators to ensure those students approaching graduation have significantly more information about their further study options.

The second implication should be encouraging to university administrators and marketers. Students not only notice and evaluate the marketing of PG courses, but a substantial portion also want to know more about the PG courses offered at their university. Additional opportunities to tell students about PG courses could be considered. While open days, website pages, written and in-person appeals to high performers are often used to recruit potential PG students, additional techniques may be considered for example using academic lecturing and tutoring staff in first and second year classes. Activities targeted at first and second year students might include explicit
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referencing to PG opportunities and academic or grading requirements at the beginning of each semester. Another technique is encouragement of early high performers when giving feedback. Anecdotally, some academics refer to the potential for PG study when feedback is given to first or second year students who perform well in assignments. These academics report actively and deliberately encouraging those early high-performing students to consider an honours year. The academics explicitly link the high performance in first and second year assignments to the possibility of aiming for honours selection, giving detailed information about entry requirements in enough time for students to work to achieve the cut off grades.

These strategies are inappropriate for those universities that prefer not to raise the expectations of their students to levels where students who are rejected for higher study are disappointed and graduate with a sense of rejection rather than accomplishment. It is important to consider the university’s ability to deliver the research supervision and coursework teaching associated with PG study with the university’s desire and ability to market the PG options.

The limitations to this study include the use of business students in one university. These results may not generalize beyond business to other disciplines such as arts and humanities, sciences, and engineering, some of which have an increased focus on PG study. Because this study was cross-sectional rather than longitudinal, no causality can be implied from the results. The self report results may be biased due to common method variance, given that all data was collected in the same survey.

In the meantime, however, this study has addressed an important gap in the literature on PG study. This study has highlighted the scarcity of information about current UG students’ attitudes towards PG study. The research has built on that scant qualitative research to provide measures and initial data to enable further study of student attitudes. Finally, the study has provided strong encouragement to university administrators and marketers that UG students are indeed keen to know more about PG study. Perhaps the message of lifelong learning is being heard after all.
References


Figure 1: The resulting model for all students. Note: Error terms and intercorrelations between the knowledge and awareness error terms have been removed for clarity.
Table 1:
Means, standard deviations, correlations and reliabilities

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Awareness</th>
<th>Knowledge</th>
<th>Intentions</th>
<th>Promotions</th>
</tr>
</thead>
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<tr>
<td>Awareness</td>
<td>2.74</td>
<td>1.05</td>
<td>(.83)</td>
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<tr>
<td>Knowledge</td>
<td>2.32</td>
<td>.93</td>
<td>.45**</td>
<td>(.89)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intentions</td>
<td>2.64</td>
<td>.85</td>
<td>.22**</td>
<td>.28**</td>
<td>(.73)</td>
<td></td>
</tr>
<tr>
<td>Promotions</td>
<td>5.42</td>
<td>1.89</td>
<td>.38**</td>
<td>.39**</td>
<td>.19**</td>
<td>(.64)</td>
</tr>
</tbody>
</table>

Note: Cronbach’s alpha in brackets on the diagonal.
Table 2: Scale means, standard deviations, agreement and disagreement levels by cohort

<table>
<thead>
<tr>
<th></th>
<th>First year n = 188</th>
<th>Second year n = 68</th>
<th>Third year n = 85</th>
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<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
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<tr>
<td>Awareness scale</td>
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<td>0.99</td>
<td>2.66</td>
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<tr>
<td>Knowledge scale</td>
<td>2.28</td>
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<tr>
<td>Intentions scale</td>
<td>2.69</td>
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<td>2.53</td>
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