Dimensions of Self-Perceived Employability in First Year IT Students

DIMENSIONS OF SELF-PERCEIVED EMPLOYABILITY IN FIRST YEAR IT STUDENTS

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ABSTRACT

Undergraduate students entering university arrive with certain expectations as to how their degree program will equip them to enter the world of work. Students are aware of the competitive nature of the modern day labor market and, as seen in this study, there is a majority belief that their program of choice and the good reputation of the university will give them an advantage in increasingly competitive labor markets. This competition and the relentless trend of automation are placing downward pressure on the numbers of otherwise employable graduates. In this study, we use an established research instrument (Rothwell et al, 2008) to examine the expectations and self-perceptions of undergraduate students, considering dimensions of self-perceived employability in a cohort of 300 Information Technology (IT) students (136 responses) at a multi-campus, metropolitan university. We then contrast these results with the perceptions held by university students across multiple domains and professions. The results indicate that the IT students perceive themselves to be more employable relative to other professions.

KEYWORDS

Employability, Curriculum Design, Motivating Students. First Year Experience, University Teaching

1. INTRODUCTION

It is no overstatement that labor markets in the early decades of the 21st Century are experiencing unprecedented disruption. Not since the Industrial Revolution have such pressures been so glaringly evident. Contributing factors include the technological trend towards the automation of process-driven jobs, the outsourcing of labor to low-cost countries and the demand for more family-friendly, flexible employment arrangements (Stanwick, Lu, Rittie, & Cicelli, 2014). Last years' graduate labor market is reportedly the toughest on record. There are more people completing degrees with fewer jobs, resulting in lower rates of full time employment (Norton & Carroll, 2015).

The high cost of university/college education has traditionally been justified on the basis that graduates derive significant financial and personal benefits from higher education (Tomlinson, 2008). But the evidence tells a different story; it would appear that a university degree is no longer a guarantee or even an assurance for the securing of a job, as it once was. Recent findings suggest that it is taking graduates an average of 4.7 years to find full-time employment after graduating (Healey & Lewis, 2016; Stanwick et al., 2014; Walsh, 2016). It should be noted however that this 4.7-year figure includes all young people (aged 15-24 years), irrespective of whether they went to university, did a vocational education training course, or finished their education at high school (Healey & Lewis, 2016).

What is perhaps more telling is that 30% of young people aged 15-24 are unemployed, while the proportion of young people in full time work has decreased from 52% in 2008 to 42% in 2014 and, at the same time, the proportion of people in part time and casual work has increased. Only 65% of university graduates will be in full time work four months after graduating, down from 84% in 2008. In the face of these trends, it is understandable that young people are staying in education longer (up from 72% in 2008 to 78% in 2014 among 15-19 year olds), on the expectation that acquiring specialized skills at postgraduate level will potentially help to prepare them for a future in which specialized skills are a necessity (Stanwick et al.,

2014). The economic downturn and high unemployment rate may have led undergraduate students to an alternate course of action; to pursue practical courses that will potentially increase their employability in fields with recognized opportunity (Wu, 2011). In China, for example, students are choosing vocationally-oriented programs (Zhou & Lin, 2009), such as business and finance, sciences, engineering and architecture, rather than the humanities and social sciences. This trend may indicate that students consider the usefulness of a degree in gaining employment as a critical factor in choosing undergraduate programs (Lai, To, Lung, & Lai, 2011). Notwithstanding congestion in the labor market for some in-demand professions, there are still too many who have undertaken degree programs with limited jobs available (Zhou & Lin, 2009). As a result, 11.6% of bachelor degree graduates available for full-time employment in 2014 were still looking for employment, 20.3% were working on a part time or on a casual basis while continuing to seek full time employment and 20.8% went on to further study (Guthrie, 2015).

2. DIMENSIONS OF EMPLOYABILITY

2.1 Defining Employability

Theorists suggest that "employability is based on the competition for credentials as employers use them to screen out unsuitable applicants" (Brown, Hesketh, & Wiliams, 2003, p. 116). A more nuanced view is that employability is a subjective discourse that describes the way people perceive and understand the labor market, as well as their dispositions and attitudes towards their future in that labor market (Tomlinson, 2007). Hillage and Pollard (1998) define employability as having the capability to gain initial employment, maintain that employment and subsequently obtain new employment if required. A limitation of this last definition is that it is the labor market, rather than the capabilities of individuals seeking a place in it, that determines employability. Employability therefore varies according to economic conditions. When jobs are in short supply, graduates become less employable because there is a plentiful supply of experienced workers. From this we might deduce that we should not try to define employability solely in terms of individual factors. Brown et al (2003) thus propose that employability is a relative concept that is a function of supply and demand in the job market. Employability depends on two factors; how well one fulfills the requirements of a specific job and one's relative standing in a hierarchy of job seekers. If there were more jobs available then applicants, then all applicants with the right qualifications and skills would be employed. However, even when the economy is buoyant, this is far from reality.

We shall use a definition that takes account of the self-perceived employability of bachelor students: *employability is "the perceived ability to attain sustainable employment appropriate to one's qualification level*" (Rothwell, Herbert, & Rothwell, 2008, p. 2).

2.2 Employability Factors

2.2.1 University Reputation

The reputation of one's *alma mater* is a valuable commodity for students seeking employment. There is ample evidence to suggest that employers respond positively to institutional rankings and that degree holders from universities with good reputations have better chances of being employed. A study at the University of Sussex found that employers place heavy reliance on institutional reputation gained via rankings in the Times Higher Education supplement. One in four graduate recruiters cited university league tables as their main source of information about qualifications and standards. Moreover, employers tend to rely on league tables as a method for pre-selecting candidates, targeting graduates from the same 10-20 high reputation universities (University of Sussex School of Education, 2006). Cranmer (2006) likewise argued that employer perceptions about the quality of graduates from certain universities and departments continue to influence transitions into employment. Recent research in Australia, however, suggests this may not be the case. The Australian Graduate Survey (AGS) (Graduate Careers Australia, 2014) reports on employment and salary four months following program completion. The AGS showed that, after controlling for gender and course studied, the type of university attended did not significantly affect graduates' probability of having a

job (Norton & Carroll, 2015). The HILDA survey (2014) looks at longer term outcomes and likewise demonstrated that the type of university attended made little difference to whether or not a person had a job.

Previous research shows that students themselves recognize the importance of putting the reputation of their institution to good use. According to Tomlinson (2008) students' perceived that they had to do all they could to gain positional advantage and they thus attached considerable importance to grades, the profile of the institution and the additional human capital of postgraduate credentials. It was clear that the students in this study were concerned to capitalize upon the profile of their institution and status of the university as a means to gain positional advantage and/or to re-invest in additional study.

2.2.2 Supply vs Demand

Each year, many potential workers with similar degrees and practical experience enter the market and compete for a small number of positions (Roulin & Bangerter, 2013) and there are indications that the growth in the supply of potential graduate labor is not matched by corresponding rise in actual demand (Wilton, 2011). As Birrell and Healy (2013) note, approximately 250,000 young people in Australia leave school and try to enter the workforce each year. Insufficient labor market demand is resulting in high rates of unemployment amongst those aged 15-24 (14.5% for 15-19 year olds and 9.5% for 20-24 year olds). Wu (2011) similarly notes that both the economic recession and expansion of higher education has resulted in an excessive number of college graduates, which has, in turn, led to a high graduate unemployment rate and a competitive labor market. Recent graduates from both developed and developing countries have experienced considerable difficulty finding a job and/or they settle for jobs that are not commensurate with their training. This has resulted in a range of problems associated with over-education and crowding out. Brown et al (2003) likewise claims that mass higher education is creating an over-abundance of potential knowledge workers. There is evidence of significant labor market congestion, leading some, perhaps many graduates to settle for lesser jobs for which they may be over-qualified. Research by Tomlinson (2007) revealed that students are themselves aware that the graduate labor market is highly competitive and that there are more graduates than jobs. In addition, students perceive the limitations of their hard currencies and that an inflationary rise in formal credentials has lowered their value and currency. They perceive that their degree alone is not enough and does not represent a badge of sufficient distinction in their pursuit of graduate jobs.

The problems created by an over-supply of young graduates are compounded by the fact of older people remaining in employment when they might otherwise have retired. The percentage of those aged 60-64 participating in the workforce has also increased (Walsh, 2016). As a consequence, young Australians face competition from both global labor market pressures and an ageing local population. Research by Australian National University demographers (McDonald & Temple, 2010) supports this assertion. They found that even with zero net migration, the numbers exiting the workforce between the ages of 55 and 64 do not exceed those entering in the 15-24 year age group. Employment competition is thus most evident amongst young people, who have to face a situation in which an increasing percentage of older persons are staying in work, resulting in fewer vacancies through the exits of older workers a decade ago (Birrell & Healy, 2013).

2.2.3 Skills and Abilities

Access to higher education is seen by many as an equalizer of opportunities for people across the social spectrum. Individual attainment of marketable skills and formally recognized qualifications enables individuals to overcome social disadvantage (Wilton, 2011). However, recent research suggests that employers are attaching less importance to academic credentials (Brown, Hasketh, & Williams, 2004) and that there may be a mismatch between graduates' level of qualification and its market utility (Tomlinson, 2008). Survey data collected from employers shows dissatisfaction with young people's level of business and customer awareness, self-management skills, problem solving abilities, literacy and numeracy skills. In addition, the baby boomer generation is living and working longer and they bring experience and skills that young people may not have (Walsh, 2016). Brown et al (2003) suggest that employers often report that university graduates lack business awareness and are poorly prepared for the work environment, while Cranmer (2006) similarly notes that employers have expressed concerns that undergraduate programs are failing to provide graduates with the necessary skills for their careers.

The perceived deficits in graduate skills puts the onus on employers to complete their young new-hire's education with the knowledge, skills and abilities seen to be important (Fugate, Kinicki, & Ashforth, 2004). To be competitive, graduates must add value to their primary academic credentials in order to distinguish

themselves from the many others with equivalent degrees in a competitive labor market (Cranmer, 2006). Tomlinson (2008) explored the way in which higher education students view the role of their degree credentials in shaping their future employment prospects. He found that, while students' continue to ascribe importance to their degree, they also perceive that the role of their academic credentials in securing employment is declining. While some students maintained an idealized view of their employability, most students anticipated a more difficult process of career progression. They viewed the labor market as increasingly flexible and high risk and were aware that they would not simply walk into jobs but would, rather, have to manage their labor market experience and profiles to realize their goals. They took an active approach to managing their future employability and were aware of the need to optimize their credentials and be proactive in the management of their employability (Tomlinson, 2007). A study by Fugate et al (2004) similarly revealed that the majority of students surveyed did not believe that their degree would guarantee their future employment and that they needed to be strategic in order to distinguish themselves from their competitors. Approximately 25% of students in this study suggested that participation in extra-curricular activities could be used to gain positional advantage in a competitive labor market. In contrast, Wilton (2011) conducted a study with business and marketing students who were asked to assess the extent to which their undergraduate degree had contributed to the development of a range of employability skills. The graduates in this study reported that their programs of study contributed to the development of a broad range of employability skills that they believed would be valuable in a wide range of jobs and labor market contexts.

2.2.4 Contrasting Results

Given the international trend towards jobs becoming more difficult for university graduates to secure, the results of this project presents some anomalous findings. In this study of IT students, the generally buoyant attitude towards employability would appear to be at variance with the literature, which suggests that students generally perceive their situation rather more pessimistically.

The variance is partially explainable by the dynamic and pervasive nature of the IT sector as it develops into a global industry that reaches into practically all aspects of modern life and which offers job prospects anywhere in the world without the restriction of needing to have a licenses to practice granted by a governing professional body. Another factor might be the emphasis that this particular university places on 'employability' being built into its programs, a message which it communicates in its marketing.

2.3 Method

Rothwell et al (2008) constructed a research instrument that examines the expectations and self-perceptions of undergraduate students. This instrument has been well-validated by other researchers. Having gained Rothwell's blessing, the authors of the current study used the survey-building tool Qualtrics to adapt this self-perceived employability questionnaire. Thus the study was conducted with a robustly tested survey instrument. The data and conclusions derived from the instrument would thus prove useful to contrast with the results of the current study.

The survey consists of 20-items—four establishing demographic questions, including gender, age, highest completed education level and primary employment, and 16 Likert scale items presented on a standard 7-point scale (strongly agree, agree, somewhat agree, neither agree nor disagree, somewhat disagree, disagree and strongly disagree).

Clearance was sought and obtained from the university's research ethics committee. The link to the survey with supporting information was subsequently emailed to a cohort of 330 first year Bachelor of IT students at the very beginning of their university studies, i.e. two weeks after beginning their university studies. The test site is a large metropolitan university in Australia (40,000+ students across five campuses). The students for this study were drawn from three of the five campuses. These are located in demographically diverse parts of the extended metropolitan area. Around half of the students were Australians drawn largely from areas within a 50 kilometer radius of the three campuses. These areas were characterized by being in three distinct demographic categories; one low Socio-Economic Status (SES), one low to middle, one middle to high SES. The other half was international students, drawn from East Asia.

Participation in the survey was voluntary and anonymous. No additional course credit or other incentive was offered for participation. A total of 136 responses were received, although Likert scale items received between 91 and 93 responses, suggesting that many participants discontinued with the survey after entering

demographic information. The survey was open for a total of two weeks, at the end of which time a report of survey responses was generated using the Qualtrics software. For Likert scale items (survey questions 16 and 17), responses of Strongly Agree and Agree and Strongly Disagree and Disagree were conflated and converted into percentages, while responses to somewhat agree, somewhat disagree and neither agree not disagree were calculated individually as percentages.

2.4 Results

2.4.1 Demographic Variables

Demographic information drawn from the survey includes age, gender, highest completed education and employment status, if any.

Of the respondents, 89% (n=121) identified as male and 11% (n=15) as female. 70% (n=95) were aged between 17 and 19 at the time, while 21% (n=29) were aged between 20 and 29.

74% (n=101) indicated that Year 12 was their highest completed education level, while 26% (n=35) had completed a certificate level qualification. In addition, 62% (n=84) of participants identified as students, in response to the question: which best describes your primary level of employment?

2.4.2 Likert Scale Items

The participants were asked: "*To what extent do you agree or disagree with the following statements?*" Responses for strongly agree, agree and for strongly disagree and disagree have been conflated.

Table 1. Survey Response Breakdown (Consolidated Likert Scale)

	Question	Results
1.	I achieve high grades in relation to my study (92 responses)	50% (n=46) agreed, 38% (n=35) somewhat agreed.
2.	I regard my academic work as top priority (94 responses)	71% (n=67) agreed, 18% (n=17) somewhat agreed.
3.	Employers are eager to employ graduates from my university (92 responses)	47% (n=43) agreed, 32% (n=29) neither agreed nor disagreed.
4.	The status of this university is a significant asset to me in job seeking (93 responses)	53% (n=49) agreed, 23% (n=21) somewhat agreed 20% (n=19) neither agreed nor disagreed.
5.	Employers specifically target this university in order to recruit individuals from my subject area(s) (93 responses)	26% (n=24) agreed, 24% (n=23) somewhat agreed 42% (n=39) neither agreed nor disagreed.
6.	My university has an outstanding reputation in my field(s) of study (93 responses)	54% (n=50) agreed, 24% (n=22) neither agreed nor disagreed.
7.	A lot more people apply for my degree than there are places available (93 responses)	18% (n=17) agreed, 42% (n=39) neither agreed nor disagreed, 11% (n=10) somewhat disagreed 10% (n=9) disagreed.
8.	My chosen subject(s) rank(s) high in terms of social status (92 responses)	25% (n=23) agreed, 29% (n=27) neither agreed nor disagreed, 12% (n=11) somewhat disagreed.
9.	People in the career I am aiming for are in high demand in the external labor market (92 responses)	45% (n=41) agreed 30% (n=28) somewhat agreed.
10.	My degree is seen as leading to a specific career that is generally perceived as highly desirable (92 responses)	63% (n=58) agreed 17% (n=10) somewhat agreed.

11. There is generally a strong demand for graduates at the present time (91 responses)	49% (n=45) agreed 21% (n=19) somewhat agreed.
12. There are plenty of job vacancies in the geographical area where I am looking (92 responses)	27% (n=25) agreed, 34% (n=31) neither agreed nor disagreed, 9% (n=8) somewhat disagreed.
13. I can easily find out about opportunities in my chosen field (92 responses)	49% (n=45) agreed, 32% (n=29) somewhat agreed 13% (n=12) neither agreed nor disagreed.
14. The skills and abilities that I possess are what employers are looking for (91 responses)	56% (n=51) agreed, 27% (n=25) somewhat agreed 12% (n=12) neither agreed nor disagreed.
15. I am generally confident of success in job interviews and selection events (92 responses)	50% (n=46) agreed 26% (n=24) somewhat agreed.
16. I feel I could get any job so long as my skills and experience are reasonably relevant (92 responses)	64% (n=59) agreed 17% (n=16) somewhat agreed.

2.5 Discussion

2.5.1 University Reputation

In keeping with conventional wisdom, earlier research (Cranmer, 2006; University of Sussex School of Education, 2006) suggests that in Britain employers place significant reliance on institutional reputation to pre-select graduates. A graduate from Oxford or Cambridge would be regarded more favorably than one from universities at the bottom of the league table. For reasons that remain unclear this does not appear to be the case in Australia (Graduate Careers Australia, 2014; HILDA Survey, 2014; Norton & Carroll, 2015). This study has 47% of participants believing that the hiring managers want graduates from the same universities that they themselves went through. More than half of the students in this study (53%) nonetheless consider that the status of the university will be an asset to those seeking employment with 20% somewhat agreeing with this view.

Paradoxically, while 54% of participants reported that the university they attend enjoys an outstanding reputation in their chosen field, only 26% believed that employers would give preference to their university when recruiting. While this cohort of undergraduate students perhaps hold an idealistic, if not naïve, view about the likelihood of their finding full-time employment on completion, they nonetheless recognize that employers will choose them because of the institution they attend and that they will be competing with other equally, if-not-more, qualified graduates.

2.5.2 Supply vs Demand

Labor market statistics may be telling us that the supply of graduates in Australia exceeds demand (Birrell & Healy, 2013; Brown et al., 2003; Tomlinson, 2007; Wu, 2011), yet the results of this study indicate contrary perception. Only 18% of participants believe that more people apply for their degree than there are places available. 42% neither agreed nor disagreed with this question, telling us that the perceived demand for graduates in their chosen field exceeds the supply of graduates. This is emphasized by the participants' belief that people in their chosen degree are in high demand in the external labor market, a view which 45% and 30% agreed or somewhat agreed with. However, while participants generally believed that their degree was leading to a career that is highly desirable (63% agreed and 17% somewhat agreed), only 49% agreed that there is, generally, a strong demand for graduates at the present time and 21% somewhat agreed. We may conclude from this that while the respondents believe that their chosen degree is in demand and will likely result in their gaining employment, there may be graduates in other disciplines in which the supply of graduates exceed the number of positions available.

2.5.3 Skills and Abilities

Employers appear to be attaching less importance to academic credentials than was previously the case (Brown et al., 2004); a view at variance with the perceptions of undergraduates, 56% and 27% of whom either agreed or somewhat agreed that they possess the skills employers are looking for. Moreover, 64% agreed and 17% somewhat agreed that they will find employment if their skills and experience are relevant, whereas prior research suggests that employers themselves have concerns about whether programs are producing graduates with the skills needed to for today's workforce (Brown et al., 2003; Cranmer, 2006).

2.6 Directions for Future Research

An interesting future direction would be to make the current study into a longitudinal study conducted over three years. The longer study would examine the employability self-perceptions of (a) each new first year cohort, and (b) the progressive perceptions of the current first year cohort as they progress through second and third years. Such a study would help to assess whether or by how much original perceptions may have changed.

In addition, it would be illuminating if in 2019 we compare the employment figures for the recently graduated IT students who are the subject of this current study, and to compare those figures with those of 2018 and 2017. This would give some insight into whether the employability programs undertaken by the university are having a positive effect.

3. CONCLUSION

The results of the survey indicate a degree of optimism in the first year students that is understandable given the aspirations that led them to enroll in the IT program and the encouragement given by the university itself to believe that acquiring employability skills is a key component of their program. This is a successful outcome in the university's efforts to generate a positive mind-set in relation to students' future employability.

Employment prospects in the IT industry appear to be more favorable than other less dynamically changing professions. It is an open question whether this optimism is warranted in view of the general evidence that suggests the supply of graduates on the labor market in many industries exceeds demand (Birrell & Healy, 2013; Brown et al., 2003; Tomlinson, 2007; Wu, 2011).

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