6 Earning Capacity of Sustainable Education – A Review of Current Perceptions Regarding the Salaries, Under-employment and Over-education of Higher-Education Graduates and their Potential Application in Sustainability Assessments

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Abstract

There is a growing need to understand the economic returns of degrees as a function of a sustainable institution. The empirical data presented in this paper suggests that there is a difference between the economic perception of higher education stakeholders and reality. The data showed that the most important economic metric for a graduate is full-time employment. This metric, although important, is incomplete and does not address other important factors such as starting salaries and under-employment. This indicates a gap between reality and perception considering stakeholders expectation that education should not cost more than of 15% of future salaries and that the debt be repaid in less than ten years. Student's focusing on full-time employment rather than the holistic economic realities of their educational choices may lead to an unsustainable future which is currently not captured in higher education sustainability assessments.

§ 6.1 Introduction

Sustainability. A word so prevalent in modern marketing that most do not realize it has yet to be unanimously defined. Sustainability has various definitions throughout multiple professions. This lack of clear definition creates the potential for misuse, misunderstanding or even misrepresentation of the word. The WCED definition of sustainable development (Brundtland et al., 1987) may be a more commonly known definition stating: "a development that meets the needs of the present, while not compromising the needs of future generations". In practice that definition is still open to debate.

Higher education has seen a steady use of the term sustainability since the Talloires Declaration in 1990. Since then, thirteen major international declarations have been created to support this process and a steady stream of sustainability assessment tools to support them. Policy makers (UNESCO, 2011) and students (Bone and Agombar, 2011) have placed a significant emphasis on sustainability within higher education and institutions have responded by actively implementing sustainable initiatives as demonstrated by numerous sustainability reporting services, such as the Association for the Advancement of Sustainability in Higher Education's Sustainability Tracking, Assessment and Rating System (STARS) and the Princeton Review's Guide to Green Colleges.

Rather than try to define the term in relation to higher education, Maragakis and Dobbelsteen conducted a survey to understand what stakeholders looked for in sustainable institutions (2013). The empirical data collected suggested that one of the

gaps in current assessment systems is the lack of economic parameters surrounding higher education attainment. This was a significant step as it provided support of potential economic driven gaps in sustainability measurements and tools being used in higher education.

The economic returns of higher education have been studied thoroughly over the last several decades as can be seen in various OECD reports (Tremblay et al., 2012). This vast research has not yet made a direct connection as to how economic returns could be useable within sustainability assessments of higher education institutions. Therefore, combining economic metrics with current sustainability assessments is a novel concept yet to be fully explored. Respondents to Maragakis and Dobbelsteen (2013) survey highlighted that student's general sought "employability" as the main economic parameter to be included in sustainability assessments. However, the term employability is more convoluted than it may initially sound given that employability does not have a universally accepted definition. A literature review by Maragakis and Dobbelsteen (2015) recommended that three questions be used to assess one's employability: namely the starting salary, under employment and over education.

This paper looks to explore these three metrics via a survey in order to explore students perceptive. The results will be used to explore the utilization and implementation within sustainability assessments in higher education.

§ 6.2 Methodology

§ 6.2.1 Research Question

The primary question of this research was:

What is the importance of starting salary, under employment and over-education to higher education stakeholders?

The secondary research question was:

Do the stakeholders believe this information should be reported by higher education institutions?

Which trends or features of higher education stakeholders can be identified in regards to the economic returns of degrees?

§ 6.2.2 Survey Outline

The aim of this study is to validate the theoretical significance of yearly compensation, over-education and under-employment of graduates by conducting a survey that would provide quantitative insight into the perception of higher education stakeholders.

This survey was created with the input from a diverse group of international participants representing sustainability initiatives and higher education. The participants represented stakeholders from higher education institutions including executive leadership, management, teaching, students and prospective students. The groups input assisted in creating a survey for a defined demographic within the higher education industry. The survey was created for direct stakeholders in higher education, which for this paper is defined as potential or current students, staff and management.

This paper focused on quantitatively validating the three metrics proposed by Maragakis et. al. (2015) and capturing the perception of higher educational stakeholders. The metrics proposed, as well as the literature supporting them, are as follows:

1 *What is the average yearly compensation of graduates with that specific degree within 12 months of graduation?*
This question was extrapolated from the strong correlation that Rajecki and Borden (2011) identified between mid-career salaries and starting salaries. The findings showed that a higher starting salary supported a higher mid-career salary and that a low starting salary and hard work was often not enough to reach the same mid-career salary.

2 *What is the ratio of full-time / part-time employed graduates with that specific degree within 12 months of graduation?*
Underemployment is defined as those working part-time due to lack of full-time jobs, or those working part-time who would like to work more hours (Bell and Blanchflower 2011). Since underemployment has been a growing concern since the financial crisis of 2008 and remains persistent (Ashford et al. 2012) this question looks to provide students with a more meaningful number than just "employability".

3 *What percent of graduates with that specific degree are employed in a position whose level of education exceeds the requisite levels needed to perform their job?*

The research by Carroll and Tani (2013) points to the growing concern surrounding over education and this question uses Linsley (2005) definition to capture the level of over education experienced by a graduate of a specific degree within the market place.

§ 6.2.3 Survey Questions and Data Collection

The questions were initially extrapolated from the literature and then underwent a two-week review from a diverse set of international higher education stakeholders. The survey was created on February 28, 2015 and accepted responses through March 15, 2015.

The survey was created using Google forms and was promoted utilizing various channels of communication. It was heavily promoted through key contacts within universities in North America, Europe, Asia, Africa and Australia.

Social media tools such as Facebook, Google, LinkedIn and others were used to promote the survey to spur responses. Physical surveys were also gathered in various North American sites.

It is important to note that these metrics are new to the discussion regarding sustainability assessments of higher education but not to the general discussion surrounding the economic return of higher education. In fact, the economic returns of higher education have been one of the well-studied, and highly debated topics, in higher education since the emergence of alternative higher education institutions in the 1960's that were employer-oriented and closely integrated with the labor market (Tremblay et al., 2012).

§ 6.3 Survey Results

§ 6.3.1 General Survey Characteristics

The survey received a total of 232 responses during a sixteen-day window. 189 responses were submitted digitally while 43 were manually collected and input. Of the 43 that were manually collected, 36 were geographically located in the Midwestern portion of the United States.

STAKEHOLDER	Africa	Asia	Australia	Europe	North America	South America	TOTAL
Administrator		**1**		**1**	**4**		**6**
Female				1	1		
Male		1			3		
Alumni		**2**	**1**	**20**	**23**		**46**
Female				10	11		
Male		2	1	10	12		
Faculty				**6**	**5**		**11**
Female				2			
Male				4	5		
Future First Time Student				**1**	**35**		**36**
Female				1	20		
Male					15		
Graduate Student	**1**		**2**	**66**	**23**	**1**	**93**
Female			1	33	10		
Male	1		1	33	13	1	
Professional Considering Further Education				**7**	**8**	**2**	**17**
Female				3	4		
Male				4	4	2	
Undergraduate Student	**2**			**17**	**4**		**23**
Female				4	2		
Male	2			13	2		
TOTAL	**3**	**3**	**3**	**118**	**102**	**3**	**232**

TABLE 6.1 Respondents by academic situation, gender and geographic location

Table 6.1 provides insight into some strengths and weaknesses of the data set. By gender, the results are slightly skewed towards a male's perspective with 129 male responses compared to 103 female responses. Based on the demographics, it can be generalized that the responses reflect a European/North American perspective, with a majority of respondents being graduate students.

An interesting observation is the composition of the respondents by geographic location. Europeans represent a majority of the responses for both the Graduate and Undergraduate academic situation, while Future First Time students almost entirely reflect North American respondents.

§ 6.3.2 Responses Regarding Starting Salaries

Several questions were geared at trying to address if salaries were a driving factor in higher education. Three questions were asked specifically in order to try to isolate the underlying perception:

1 Would you pursue a degree which may not offer you a higher salary upon graduation?
This question is aimed at identifying if salaries are the primary driver for pursuing higher education.

2 Would you expect a higher salary by pursuing a higher education level than you currently have?
This question was created in order to capture that students were primarily driven to pursue higher education for both personal development while still expecting economic benefits from their studies.

3 Would you expect to find better employment by pursuing a higher education than you currently have?
This question looked to ascertain if students pursuing higher education expected a general improvement in their professional status that was not necessarily tied to monetary gains.

	Would you pursue a degree which may not offer you a higher salary upon graduation?			Would you expect a higher salary by pursuing a higher education level than you currently have?			Would you expect to find better employment by pursuing a higher education than you currently have?		
Stakeholder	**Yes**	**Maybe**	**No**	**Yes**	**Maybe**	**No**	**Yes**	**Maybe**	**No**
Administrator	2		4	4		2	4		2
Alumni	23	2	21	17	10	19	12	4	30
Faculty	9		2	5	1	5	4	1	6
Future First Time Student	16	7	13	25	10	1	36		
Graduate Student	52	2	39	60	17	16	55	21	17
Professional Considering Further Education	9	1	7	11	3	3	10	4	3
Undergraduate Student	12		11	19	3	1	19	3	1
Total	**123**	**12**	**97**	**141**	**44**	**47**	**140**	**33**	**59**

TABLE 6.2 Perceptions of employment related outcomes from higher education

42% of respondents were driven solely but monetary returns while around 60% expected a higher salary after graduation or better employment. An interesting observation is that 100% of future first time student's believed that higher education would help them find better employment.

A noticeable spike is observed in alumni's responses to if they expect higher further education to provide better employment. A majority of alumni respondents did not believe they would find better employment than they currently had, although they were relatively split in terms of expecting a monetary return from further education.

Another interesting observation is the perceptions of the administrators. While the majority did not believe that students should be driven by monetary returns, they did expect a higher salary or better employment for graduates.

	Is it important for universities/colleges to provide students with the average starting salary of graduates based on the degree?			Is knowing the starting salary of a degree important to you?		
Stakeholder	**Yes**	**Maybe**	**No**	**Yes**	**Maybe**	**No**
Administrator	5	1		5	1	
Alumni	29	9	8	34	4	8
Faculty	7	3	1	6	2	3
Future First Time Student	24	6	6	27	6	3
Graduate Student	59	14	20	57	21	15
Professional Considering Further Education	16		1	11	6	
Undergraduate Student	14	5	4	11	7	5
Total	**154**	**38**	**40**	**151**	**47**	**34**

TABLE 6.3 Perceptions of salary information

Table 6.3 shows stakeholders strong support and demand for salary information. Over 65% of respondent declared their support for the importance of starting salary information and that universities/colleges provide this information. Of significant interest is the strong support that universities/colleges provide students with the average starting salary from both administrators and professionals considering further education.

§ 6.3.3 Responses Regarding under Employment

	Should a graduate expect full time or part time employment?			Is it important for universities/colleges to provide statistic of Full-time/Part-time employment rates of graduates within 12 months of graduation?		
Stakeholder	Full time	Part time	Other	Yes	Maybe	No
Adminis-trator	4	2		4	1	1
Alumni	40	3	3	41	3	2
Faculty	10		1	9	1	1
Future First Time Student	35	1		30	3	3
Graduate Student	87		6	81	7	5
Professional Considering Further Education	15	1	1	16	1	
Undergradu-ate Student	20	3		17	4	2
Total	**211**	**10**	**11**	**198**	**20**	**14**

TABLE 6.4 Responses to what type of employment a graduate should expect

There is an overwhelming support from stakeholders that they expect Full Time employment and that universities should share this information with potential students. The responses that comprise the "Other" category in "Should a graduate expect full time or part time employment?" typically responded that it was up to the graduate's preference.

STAKEHOLDER	Yes	Other
Administrator	5	1
Alumni	42	4
Faculty	9	2
Future First Time Student	36	
Graduate Student	79	14
Professional Considering Further Education	15	2
Undergraduate Student	21	2
Total	**207**	**25**

TABLE 6.5 Responses to the question referencing the period of time after graduation in which a graduate should expect to find employment. "Is a 12 month period after graduation an appropriate period for use?"

Again there is an overwhelming support for a 12–month period. Some of the "Other" recommendations given were for a shorter duration or a time lapsed data collection at multiple ranges after graduation.

It should be noted that this question may have been confusing, with several respondents offering a response which highlighted their confusion. Specifically, due to the international participation it seems like the English utilized could have been simplified or made clearer in order to accommodate the audience.

§ 6.3.4 Responses Regarding Over-Education

STAKEHOLDER	Yes	No
Administrator	1	5
Alumni	18	28
Faculty	7	4
Future First Time Student	21	15
Graduate Student	47	46
Professional Considering Further Education	7	10
Undergraduate Student	10	13
Total	**111**	**121**

TABLE 6.6 Responses to the question "Should a graduate be satisfied with employment in a position where their education exceeds or does not match the requisite levels needed to perform the job?"

An interesting trend can be seen when reviewing the general mixed response to over-education. Administrators were strongly opposed to over-education and were supported by the majority of alumni, while the rest of the stakeholders were somewhat neutral. This result seems to support the strong idealism of the administrators and the realities of the alumni's. This is interesting as the two ends of the educational spectrum seem to agree while the various stakeholders in-between do not seem to have a preference, which may indicate a focus on gaining a job placement rather than a specific job field or position.

§ 6.3.5 Responses Regarding General Perceptions towards Financial Payback of Higher Education

STAKEHOLDER	I don't believe graduates should have debts	Less than 5%	Between 5-10%	Between 10-15%	Between 15-20%	Greater than 20%
Administrator		1	1	2	1	1
Alumni	12	9	15	7	2	1
Faculty	2	2	2	4	1	
Future First Time Student	3	20	7	3	1	2
Graduate Student	18	16	29	22	4	4
Professional Considering Further Education	1	2	8	3	1	2
Undergraduate Student	6	4	10	2		1
Total	**42**	**54**	**72**	**43**	**10**	**11**

TABLE 6.7 Responses to the question "How much of a graduates future salary should be allocated to repay student debts?"

72% or respondents expect to pay less than 10% of future earnings for education while 90% expect to pay less than 15%. This is a strong indication of stakeholder economic expectations from higher education. Viewing this same data by geographically filtering by North America and Europe we can also observe another trend.

STAKEHOLDER	I don't believe graduates should have debts	Less than 5%	Between 5-10%	Between 10-15%	Between 15-20%	Greater than 20%
Europe (%)	27	18	31	15	5	3
North America (%)	10	29	31	22	2	6

TABLE 6.8 European and N. American percentage response to the question "How much of a graduates future salary should be allocated to repay student debts?"

Table 6.8 provides the perceptions of Europeans compared to North Americans. It is notable that Europeans seem to have a preference for a graduate to not have an economic burden, while North American seems to tolerate a small amount of debt. This indicates that Europeans have a perception that higher education should not leave a graduate with student debt. It also seems that the majority of stakeholders perceptions converge and that debt higher than 15% is not acceptable.

STAKEHOLDER	I don't believe graduates should have debts	Less than 1 year	Between 1-5 years	Between 5-10 years	Between 15-20 years	Greater than 20 years
Administrator		1	2	2	1	
Alumni	9	4	14	11	5	3
Faculty	2		4	4	1	
Future First Time Student	8	9	14	5		
Graduate Student	14	13	29	27	9	1
Professional Considering Further Education	2		8	5	1	1
Undergraduate Student	6	3	6	7	1	
Total	**41**	**30**	**77**	**61**	**18**	**5**

TABLE 6.9 Responses to the question "How long after graduation should a graduate expect to be paying for student debts?"

62% or respondents expect to pay off all debts in less than 5 years with 90% expect to pay back all debts in less than 10 years. 30% of stakeholders believe that there should be no student debts or less than 1 year to pay back – a perspective not shared by the majority of administrators and faculty.

§ 6.4 Conclusions and Discussion

§ 6.4.1 Conclusions Regarding Employability Based on the Responses to Starting Salaries, Under-Employment and Over-Education

Before proceeding with the discussion, it is important to note the scope of this research. This paper looks to assess the general perception of higher education stakeholders regarding starting salaries, employment and over-education utilizing a relatively small dataset. The data could be used for other assessments and provide further insight on specific tendencies, relationship and correlations within the data. This will hopefully be used by others in future research.

At an absolute level, the stakeholder's response shows a clear preference placed on employment. The data supports a trend that a majority of the stakeholder in higher education expect a graduate to secure full-time employment. This is also supported with empirical data from Maragakis and Dobbelsteen (2013) results that stakeholders were primarily focused on employability. This result is to be expected considering the OECD (2011) shows that the employment rate for tertiary education is 27% higher than for those who have not completed an upper secondary education.

Even though the employment metrics was strongly supported, both starting salary and over-education were met with mixed opinion with respondents not showing an unequivocal preference. This relative uncertainty contradicts the strong expectations regarding both payback period and future allocation of funds regarding the debt incurred through higher education.

More than 90% supported that education should cost less than 15% of their future wages while 90% supported that they should be in debt for less than 10 years. This response, when compared specifically to the relative apathy towards starting salary, hints at a gap in stakeholder's expectation versus realities.

In order to have a clear understanding of a payback period or future repayment of debt one would require, at the very least, the total costs and total return of an investment in order to assess the economic burden. The responses above lend themselves to support that stakeholders assume that employment after graduation is the most important thing, while salaries and over-education are secondary in nature. This creates an uncertain future for graduates: one where a student's focuses on full-time employment rather than the holistic economic realities of their educational choices may lead to an unsustainable future.

The data set represents a perception of little or no student debt. Rothstein and Rouse (2011) demonstrated how no student debt fundamentally changes employment decisions of graduates. When students were relieved of any student debt, the changes in employment choices were large enough to entirely offset the effect of student debt on average after-tax, after-loan-payment earnings in the first years after graduation (Rothstein and Rouse, 2011). This indicated that students without debt pursued jobs without using starting salary as a primary decision maker.

This perception though is disconnected with reality. Higher education in most countries involves some sort cost (tuition, living expenses or other) that require a student to pay out of pocket and/or incur debt (Usher and Medow, 2010). There is a growing amount of public, political, academic and professional focus on student debt as it is having adverse effect on society. In the United States it has climaxed to the point that the president's State of the Union address directly refereed to student loans as skyrocketing and unsustainable (State of the Union Address, 2012).

Relating this to sustainability assessments in higher education, a graduate's economic sustainability after university becomes all the more critical. As Noam Chomsky has repeatedly stated, high tuition acts as a debt trap that sharply restricts choices after graduation (Chomsky, 2013). With this in mind, one may argue that a higher education institutions focusing their efforts on the non-economic aspects of sustainability may be creating graduates that are, in fact, less able to live a sustainable lifestyle.

To conclude, the stakeholders have repeatedly shown that the most important economic metric for a graduate is full-time employment. This metric, although important, is incomplete and does not address the economic realities holistically. As a minimum, students who will be investing money in higher education should also consider their future salary expectations so as to make a more sustainable decision.

§ 6.4.2 Discussion on Limitation and Uncertainties

Due to this methodology, there is the potential for promoting bias in the results. The promotion of the survey through digital media may promote bias based on the researcher's contacts and groups. Although the survey was promoted on various sites, there may have been a tendency to receive more responses from technical rather than social science stakeholders.

The results are also limited in their usefulness due to their empirical nature and limited international perspective. The data collected primarily represented North America and Europe. Furthermore, the data set also showed a tendency for Europeans being graduate respondents while North Americans being first time students.

§ 6.4.3 Recommendations

The results show the stakeholders have a definitive threshold both on the monetary investment and return of higher education. These thresholds need to be validated and further assessed in order to determine the effects of any gaps between expectations and reality for stakeholders.

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