ENTREPRENEURSHIP EDUCATION: HOW SOCIALLY FOCUSED SHOULD WE BE?

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ABSTRACT

Even before the financial crisis, the business academia and mainstream media have called into question the relevance of a business education. The business community is facing declining trust, and employers and consumers alike are demanding a new breed of leaders and innovators. This paper presents empirical evidence that firstly, social dimensions are dominant themes in business education among high-performing universities and secondly, that this integration is statistically associated with gains in reputation and higher incomes for students after graduation. Leading universities are already accruing social and economic value by staying abreast of social innovation. These developments also have the opportunity to improve the outcomes for the broader university sector.

INTRODUCTION

As the global economy makes every effort—from bailouts to increased regulation—to recover its former stability and growth, many are calling for a complete overhaul of business practices, demanding new business models, increased regulation, and above all new leadership (References). Despite signs of recovery, social problems persist and distrust toward businesses and governments remains. Government bailouts of private enterprise have led to some of the largest deficits in years and the focus is now on the leaders and unrestrained behaviour of some of the most visible institutions in the business world.

In this environment, intense debate concerning the significance of the education of these business leaders has taken over headlines in both business publications and academic journals. Anticipating this debate, top universities such as Oxford, Harvard, INSEAD, and Stanford have produced students who are consistently more employable than others by adapting to the changing role of business leaders. Concurrently these business schools are dedicating enormous resources—including labs, entrepreneurial incubators, and sub-disciplines—to promote social business, an old business paradigm that is giving future business leaders and entrepreneurs a new option for a more equitable and sustaining economic recovery.

We ask: could it be that this focus is partially supporting employability of graduates from these schools?

Social business involves going beyond adding a few peripheral corporate social responsibility activities. It means fundamentally restructuring core strategies to simultaneously increase profitability and provide business solutions to socioeconomic problems (Wilson & Wilson 2006). Governments, recognising that the public sector’s bureaucracy impedes its ability to act an agent of social change (Dunleavy & Hood 1994), are renewing support for the private and non-profit sectors to engage in social business and to recognize and correct market failures that cause socioeconomic problems (Drayton 2009; Edwards 2010). Apart from government support, social businesses and social entrepreneurs are receiving increasing political and financial support from philanthropists, NGOs, and even traditional lending institutions, as they begin to see the profitability of these alternative business structures (O’Heffernan 2010). Success stories about the positive impact on businesses’ bottom line by integrating social business activities are proliferating in the media and academia, making investing in and expanding social business activity increasingly attractive (O’Heffernan 2010; Paine 2003; Prahalad & Hammond 2005; Prahalad
Perhaps most importantly, social entrepreneurship and social business enjoy much greater support from civil society—current and potential customers—than traditional business models. An increased emphasis on social business has much promise. Numerous authors have written extensively on the benefits of social entrepreneurship (The Economist 2009; Harding 2004; Haugh 2005; Wilson & Wilson 2006; Yunus 2007), some even venturing to propose it as “the new economic engine” (Harding 2004, p.1). Others are taking home Nobel Prizes for their contributions to the field, such as Mohammed Yunus, but the majority still are mostly engaged in pushing for consensus in its definition to be able to measure its progress and develop further research. Given the momentum and support that social business enjoys among communities and governments, tighter integration of these developments into the curricula of business schools is warranted.

This paper addresses the disparity in the integration of social dimensions across business schools. In doing so, the discussion focuses on whether universities can add value to business education by integrating social business into the curriculum. Two research questions are stated, namely (1) how central is social entrepreneurship in the curricula of high ranking business schools? and (2) what is the relationship between the reputation of a business school and the presence of socially-orientated activities? The paper starts with a survey of the literature, introducing the main stakeholders in business education, and identifies the key trends that make adjusting the business curriculum imperative. It then investigates value creation in university settings, giving special attention to the factors that shape perceptions of a university’s quality, namely its reputation. Using a conceptual framework (Rindova, Williamson, Petkova & Sever 2005) to understand what is valuable to employers today; this paper critically evaluates the integration of social dimensions into business curricula in the development of human capital and education. The research is also supported by secondary data sources in the form of published media rankings, online business school curricula, and a database of amalgamated rankings. Secondary sources are analysed using Leximancer to investigate text data, and quantitative data by EViews 6. The analysis presents evidence showing that (i) social dimensions are dominant themes in the course offerings of high-performing universities, (ii) high performing universities are likely to integrate social dimensions into their teachings, (iii) integration of social dimensions into business schools is associated with higher salaries for graduates, and (iv) integration of social dimensions into business schools is associated with vast improvements in popular media rankings.

**THE CHANGING BUSINESS SCENE AND EDUCATION**

In the last few years, the job market for business graduates has changed dramatically. Globally, employment is becoming increasingly competitive as the economy continues to grow at a snail’s pace or even contract, thereby amplifying the pressure for students to align their academic training to new demands. This global recession is the most severe since World War II according to the World Economic Outlook, and employment is not expected to recover until 2011 (IMF 2010). New graduates entering the labour market seem to be most affected (ILO 2010). In the world’s largest economy, the United States, only 80 per cent of men and women between the ages of 25 and 35 are employed according to the December report from the Bureau of Labor Statistics (Goodman 2009). The close of July 2010, usually the peak month of youth employment, became the lowest point of youth employment on record since 1948; less than half of all youth seeking employment was employed in the United States (BLS 2010).

Another major change is consumers’ declining trust in the business community. Perceptions of Wall Street, the symbolic capital of the financial world, have declined with fully 60 per cent of Americans pushing for tighter regulation of financial institutions (Pew Research Institute 2010.) An astounding 68 per cent of the public in 2010 has an unfavourable view of banks and financial institutions (Pew Research Institute 2010). From an economics perspective, one of the main problems with declining trust is the presence of information asymmetries, which forces negotiating parties to divert resources to protecting themselves; making transactions more costly and less attractive (Arrow 1962). The effect of declining trust affects most transactions, as service or providers of goods usually have more information than the consumer about the transaction in question. This makes the economy less efficient on a macro level and less hospitable for business activity (Arrow 2007).

The climate of mistrust was further ignited by the business academia itself with the publication of scathing self-criticism that put into question the relevance of business education (Gioia & Corley 2002; Mintzberg & Gosling 2002; Pfeffer & Fong 2002). In addition, Grey (2004, p.185) argues that nothing short of a complete reinvention of traditional management techniques can secure the relevance of a business education, stressing that business educators must decouple business education from “traditional interests and values, not under the guise of some elusive value-freedom, but through a concern with a less
restricted set of and interests.” Another critic, Ackoff (2002), attributes the disconnection of business 
education from market realities to universities’ accountability structures that orient university activities and 
planning towards donor and faculty satisfaction rather than towards students or the wider business 
environment in which they will partake. In Hill and Knowlton’s Corporate Reputation Watch (2008), 

Students have also added their voices to the debate. An astounding 73 per cent of MBA students in 
top-tier universities reported they would not work in an industry with a poor reputation. Over half 
responded that a ‘very or extremely’ important determinant in their perception of a firm’s reputation was 
corporate social responsibility (CSR). Core course offerings do not reflect this changing demand in 
students’ preferences, except for top-performing business schools, as the evidence gathered will reveal. 

Furthermore, the market is changing and firms that add CSR activities are gaining competitive 
advantage. Responses to change vary from begrudgingly adding CSR activities on the side, to 
fundamentally rethinking core operations to integrate social and environmental objectives into business 
strategy to sustain competitive advantage (Kramer & Porter 2002). A Harvard Business School (HBS) 
study of firms that exploited this opportunity found a positive relationship between social performance and 
financial performance in 85 per cent of the cases (Paine 2003). For example, many environmental 
regulations that initially were seen as an obstacle to profitability have inspired profitable innovations in 
firms such as Wal-mart, IKEA, UPS, and Nestlé; leading to increased effectiveness and efficiency. 

Business academia is feeling these same growing pains in the ‘real’ business world: global distrust in 
business, internal dissent, changes in client preferences, and emergent new ideas about how to counter 
these respective changes. If business in the real world must adjust to rising social pressures, intuitively, 
academia must make similar adjustments to prepare students for this changing reality. Business schools 
must meet the demand for a socially-conscious education and the need for business’ ability to innovate in 
the social arena. 

WHY SOCIAL ENTREPRENEURSHIP? 

However, the news is not all bad. Two trends that are encouraging for business education are: the 
expansion of what Haugh (2005) calls the ‘social economy’ and the reenergized support for social 
enterprise from civil society, the public sector, and international organizations. 

Many have sought to define social enterprise (Dees, Emerson & Economy 2001; Harding 2004; 
Haugh 2005; Kerlin 2006; Peredo & McLean 2006). This paper follows their lead and defines social 
enterprise as any business that employ business strategies to achieve social objectives and that are also 
financially sustainable. The founder of Ashoka, the world’s largest association of social entrepreneurs, 
estimates that growth in the social economy is 2.5 times higher than in other sectors in OECD countries 
(Drayton 2009). Given the greater competition and the social economy, students that acquire skills that 
prepare them in both traditional and social business models will have an advantage over other graduates. 

Traditionally, addressing social problems has been within the realm of charity, philanthropy non-
profit work, and government policy. In the last two decades, an increasing number of prominent authors 
and academics are discussing the role of the private sector in this process (Frances 2009; Hopkins 2007; 
Prahalad 2004; Rangan 2005; Wilson & Wilson 2006; Yunus 2007). This interest has made social 
entrepreneurship one of the fastest growing, and arguably one of the most important areas of economic and 
business activity in our time (Haugh 2005; Wilson & Wilson 2006). Social enterprise has been traditionally 
associated with the small micro-village level entrepreneur, but it is now been transposed into bold social 
entrepreneurship manoeuvres by some of the largest multi-national corporations including Royal Dutch 
Shell, Coca-Cola, Dow, Danone, and BASF (Edwards 2010). These firms are going far beyond the notion 
of basic corporate social responsibility—they are incorporating the needs of society at large into their core 
business operations. 

Unfortunately, with the exception of leading universities, the majority of business programs have yet 
to reflect this paradigm change. In leading business schools in Australia, for example, the closest offering 
is a Graduate Certificate in Social Impact at Melbourne University, and single electives at University of 
New South Wales and the University of Western Australia. Academic literature and the work of previously 
cited institutions suggest that there are grounds for including social enterprise not only in coursework, but 
as a greater sub-discipline within the business discipline itself (Haugh 2005; Smith 2008; Tracey & Phillips 
2006). Already, civil society has begun to demonstrate its appreciation for universities that make social 
business a priority by celebrating in the media efforts to make social and environmental management a part 
of the core curriculum and by creating rewards for these universities (Murray 2006). Beyond Grey 
Pinstripes, a publication analysed in this research, is a ranking developed by the Aspen Institute, an
international non-profit organisation dedicated to promoting ‘value-based’ business leadership. The purpose of this ranking is to recognize and compare universities’ integration of “issues of social and environmental stewardship into business school curricula and research” (Aspen Institute 2010). This is the only global ranking with extensive data that measures social and environmental considerations as the main criterion for evaluation. This research found that top performers mention their high ranking on their business program’s website home page—indicating the prestige this recognition now bestows. The only comparable set of rankings in its comprehensiveness is the National Wildlife Foundation’s ranking of environmentally-sound campuses around the United States, which only considers the environment in the US. The following section expands on the possible value of this integration by zooming in on the role of reputation in value creation for universities and students.

UNIVERSITY RANKINGS: A REPUTATIONAL VARIABLE

While university rankings have put some universities into defensive mode and created public debates between university representatives and publishers of these rankings, both sides agree that a university’s reputation plays an important part in determining a student’s competitiveness in the job market (Dill, & Soo 2005). Hence, a prospective student’s interest in attending certain universities is strongly related to the university’s reputation among employers and corporate recruiters (Rindova et al. 2005).

Investigating reputation from both an economics (Allen 1984; Rindova et al. 2005) and an institutional perspective (Roberts and Dowling 2002) can help us understand why universities are and should be concerned with these rankings-- irrespective of their validity. From an economics perspective, the purpose of a prospective consumer’s pursuit of an external appraisal of a firm’s quality is a means of decreasing uncertainty (Arrow 1962), and serves to close the information asymmetry between the firm and the consumer (Shapiro 1982). This pursuit helps form an assessment of the alignment between the quality of the firm’s products and services and expectations and needs of the consumer (Allen 1984). Similarly, parents and students rely on assessments beyond the university’s advertisement before applying. According to Rindova et al. (2005), this is also what corporate recruiters do; attempt to minimize risk by choosing students from high-performing universities, often taking their cues from these rankings. This completes a reinforcing feedback loop, in which rankings become reality as they influence the decisions of multiple stakeholders. The increasing cost of higher education and diminishing employment opportunities for graduates make the closing of asymmetry in information imperative for parents and prospective students. Business students often rely on the annual assessment of business programs published by the Financial Times, the Economist, and the Wall Street Journal, which provide information about the performance of universities against other universities by ranking them, and employment statistics, such as starting salaries after graduation and the average percentage of employment in the first three years after graduation. These publications enjoy a large readership in industries where graduates aspire to work; it is therefore important to keep in mind that perceptions of potential employers will also be affected by these rankings.

From an institutional perspective, Roberts and Dowling (2002) define reputation as the collective perceptions of a firm. This is where rankings come in to lend credit to the prominence of certain universities over others. In an institutional setting, reputation is an intangible asset central to a firm’s ability to gain sustained competitive advantage (Barney 1991; Hall 1992). Because most universities immediately publish favourable rankings on their websites’ front page, we can assume that internally, positive rankings are seen as a means to gain or sustain competitive advantage.

The role of reputation is captured in an empirical study by Rindova et al. (2005), which shows how universities gain competitive advantage by increasing the price premium of graduates by enhancing their organizational reputation. This is accomplished by sending out ‘resource signals’ about the quality of students and reinforcing these signals by engaging in ‘awareness activities’ that certify the prominence of the institution through mechanisms such as media rankings, the endorsement by high-status actors, and certifications of achievement (Rindova et al. 2005). For example, their study demonstrates that by climbing global rankings, students’ wages upon graduation increase, as recruiters are more likely to target graduates from high-performing universities. If attending a certain university is associated with increased wages after graduation, universities are able to charge premium prices and become more selective in admissions decisions because they are offering more value to prospective students. Research commissioned by Bloomberg Businessweek of 23,000 business students supports this finding, revealing that higher ranked schools do charge the highest tuitions and that graduates from these universities are also the highest-paid graduates throughout the span of their career (Gloeckler 2010).
RESEARCH METHOD

This research focuses on high ranked business schools for several reasons. First, these schools are more likely to be trendsetters in business education; by virtue of their prestige, other universities seeking to replicate their success often replicate their course structures. Second, graduates from business schools with better reputations, on average, earn higher average wages, which continues to elevate the status of universities that are able to attract more students and be more selective (Rindova et al. 2005). The purpose of focusing on top performers is to seek insight about what curricula choices these universities prioritize and advertise to attract students and enhance their reputation. Third, choosing to study top-performers can reveal trends in their course offerings that land them into the top of various rankings—allowing for other universities to strategically differentiate their offerings and target communication to perform highly on these rankings. While surveys often publish the criteria they use to rank universities, an independent study of common trends among top-performers over time reveals selection criteria that though latent and implicit—does affect university performance in these rankings.

Accordingly, high-performing business schools were identified by leading business publications including the Economist, the Financial Times, the Wall Street Journal, and the Aspen Institute’s Beyond Grey Pinstripes. Our first question regarding the prevalence of social dimensions in business education was investigated qualitatively, by using secondary text data directly extracted from the university websites of the top-ranking universities to reveal preferences, priorities, and recurring themes among high-rankers. By compiling the text data of the top 25 universities according to each publication’s ranking; we developed an individual database for each publication spanning three years, from 2006-2009. To avoid biases introduced by the researchers during data selection, especially during qualitative analysis, the study’s first approach was an inductive content analysis, which allowed dominant themes to emerge (McKenna & Rooney, 2010), as the databases were individually processed by Leximancer, a text-mining software.

To answer our second question, how does ranking relate to social dimensions?, correlation and regression analyses were used to quantitatively estimate the relationships between the variables of interest, particularly average salaries after graduation and media rankings, and their respective significance. These variables included the previously enumerated rankings, as well as comprehensive data sets of dummy variables (DV) constructed by the authors. These DV’s corresponded to the presence of different aspects of ‘social entrepreneurship’ in business schools, as determined by online qualitative surveying of the university websites. In each constructed DV, a value of unity was given in the presence of the desired aspect, and a null value was given otherwise. These characteristics included:

- A major, program or elective in, for example, sustainable business, corporate social responsibility, social innovation, or social entrepreneurship;
- A social venture, social innovation, conference and/or social business plan competition; and
- A foundation, lab, faculty or fellowship dedicated to cultivating social innovation or entrepreneurship.

FINDINGS

This section presents evidence to support the thesis that higher ranking business schools will engage in teaching programs with social impact considerations, and that the promotion of social entrepreneurship in the form of electives, majors, and competitions is associated with gains in a university’s reputation, ranking, and on students’ career prospects after graduation. It is organised around the two research questions posed earlier.

Research question 1: Prevalence and centrality of social entrepreneurship

To evaluate whether social dimensions were predominant themes in leading universities, we used a qualitative analysis of the documents identified earlier. We employed a corpus-based approach to reveal themes and concepts that dominate the course offerings by using text-mining software, Leximancer (McKenna & Rooney 2010; Smith 2008). Leximancer ‘mines’ through the bodies of text; extracting, counting, and compiling pieces of information in the text to form concepts, according to its own thesaurus of concepts but also to multi-word concepts specified by the user (Cummings & Daellenbach 2009; McKenna & Rooney 2010), such as “social innovation” or “corporate social responsibility”. By accurately revealing word frequency, this study was able to identify themes of cognitive centrality (Huff 1990) and reveal thematic relationships by surfacing co-occurrences of keywords (Weber 1990) in university course offerings. Additionally, the software allowed for ranking of concepts according to the thematic and semantic proximity to other concepts, and projected these finding onto conceptual maps; thus providing a
graphical representation of both concept frequency and co-occurrence between concepts. This graphically represented clusters of concepts to illustrate semantic and thematic proximity, which was central in determining whether highly ranked universities have a higher propensity to integrate social aspects into their course offerings. Leximancer accounts for reliability by processing and reprocessing data until the results produced by the application are consistent each time, demonstrating a high level of coding stability (McKenna & Rooney 2010). Similarly results were reproducible by producing different data sets (conceptual maps) using the same coding and ensuring that these results did not vary across these sets. The clustering of concepts helped shed light on the kind of courses and themes that recur among top universities in their attempts to recruit students and pique the interest of students’ potential employers and recruiters. Perhaps most pertinently, Leximancer reveals latent content and deeper meanings in the text (Duriau et al. 2007), allowing the study to capture the finer nuances in the changing values among top universities as well as among the publications’ rankings. It also can help reveal traits that unite these universities that are not explicitly evaluated by these rankings, which may be a starting point for finding out what the most prestigious universities advertise and how that is attune with commonalities across universities that these rankings reward. The following section presents and summarizes the most revealing findings in the form of conceptual maps from multiple exploratory Leximancer analyses, using the databases described earlier.

Figure 1: Exploratory Conceptual Map Illustrating the Key Concepts and Themes in top-ranked universities. (50% Theme Size, 100% Visibility)

<table>
<thead>
<tr>
<th>Wall Street Journal</th>
<th>The Economist</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Conceptual Map" /></td>
<td><img src="image2" alt="Conceptual Map" /></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>The Financial Times</th>
<th>Beyond Grey Pinstripes</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Conceptual Map" /></td>
<td><img src="image4" alt="Conceptual Map" /></td>
</tr>
</tbody>
</table>

Across all of the rankings, Leximancer revealed that that one of the three most frequently occurring, or first-order concepts, included social. However, there were significant variations in terms of how frequently the word itself came up, and within which thematic cluster social concepts emerged. The actual
location of these themes reveal a lot about the relationship between recurring themes and concepts, and the prioritization of themes and concepts, as revealed by their centrality within the map. The next section contextualizes these findings with respect to the relationship between integrating social components into a curriculum and perceptions about the quality of a university and its students.

When 50 per cent of the most frequently occurring concepts were compiled, they revealed that across the universities populating the top tier of the four rankings in question, social was consistently one of the most frequently mentioned concepts. Because this was a leading theme among top performers in different rankings, we can see that indeed positive changes for universities in the form of high rankings are associated with social components in their curriculum. Once these concepts clustered according to proximity to other concepts with which they co-occurred in the text, themes emerged, revealing strong areas of emphasis in these programs. Across the three business publications’ rankings, social concepts tended to co-occur with concepts such as responsibility and impact, reflecting a traditional ‘handling’ or studying of social concepts from the perspective of mediating the consequences of business processes rather than integrating social value creation as an objective. This also explains the prevalence of corporate social responsibility initiatives as fringe operations and even outsourced departments in big firms.

Another significant finding revealed by the Leximancer analysis was the varying centrality of social themes and concepts in different rankings, as shown in Table 1. For example, universities ranked highly in the Wall Street Journal, tended to place the least emphasis on social concepts. When these concepts were mentioned, the most distant concepts included more tangible concepts, such as economic, courses, and career concepts. We can deduce and postulate that ranking highly in the Wall Street Journal do not indicate the highest prioritisation of social objectives in a university’s business curriculum. In the Economist’s rankings, social concepts were similarly not a central concept as they were mapped closer to the edges. The most distant links to social concepts were similarly more tangible benefits from education, namely career and work. Nevertheless, social was one of the most cited concepts and interestingly the most frequently appearing concept within the business thematic cluster. We can deduce that universities ranked highly in the Economist recognize that social concepts are important in business. The central focus is skills development. High rankers in the Financial Times’ publication are more likely to see social concepts and themes as an integral part of their course offerings. The distance between concepts represents the strength of links, revealing that high performers see social concepts as closely linked with entrepreneurship, enterprise, and economic concepts. Most importantly perhaps, business concepts are almost inseparable from leaders and society concepts.

In the Aspen Institute’s ranking, social and environmental are strongly co-occurring concepts; a thematic closeness which is mirrored neither in the study of the environment nor in social studies—both are generally studied in isolation. The fact that these recurring concepts take place within the theme of business is also very novel in the study of business. The concepts within the business theme shed light on the context in which these programs see business taking place (non-profit organizations, global, environmental) as well as objectives within these contexts (impact, focus, issues, including, and most pointedly, management). The student theme contains information of a student’s trajectory (progress, education, understanding, develop, and again, management) as well as information about what is gained (knowledge, skills, managers, organizations). The latter gains are located in the overlap between student theme and program theme, indicating that this is what students will gain directly through this program.

Between the three circles is non-profit, which represents their frequent involvement in students’ training, and points to the association in academia of business that seeks to capture social value and non-profitability. The latter is significant in explaining the delay in applying business strategies and knowledge to social problems because business is confined to profit-driven strategies, and social solutions are expected to be resolved by either the government or organizations that rely on non-market mechanisms. The findings reveal the variety of emphases placed on different themes by mapping its conceptual location and size relative to other concepts and themes, and, support the views of critics who think that rankings are subjective. The maps also tell a story about how the integration of social concepts into business curriculum is occurring by revealing the most frequently co-occurring concepts. Considering that one key criticism against management studies is centred on business educators portraying business education as value-neutral: one would expect that there would be less room for variety in their offerings.
To answer research Question 2, we conducted exploratory quantitative analyses with correlation matrices and ordinary least squares (OLS) regression to explore whether or not social dimensions of education are associated with improved salaries and improved university reputations. Typically, OLS regressions have been known to be sub-optimal when discrete variables such as rankings are the dependent variable to be examined. A limited-dependent variable model is preferred, such as an ordered probit model (Greene 2006). An ordered probit model becomes quite cumbersome and impractical when the ordered variable – the ranking in our case – is greater than around 10-15. As our rankings do range from 1 up to 100, these rankings can be treated as a continuous variable and OLS can effectively be used for the purpose of this exploratory study. Once the basic behaviour of the data has been estimated and established some stylized facts, the model can be subject to greater scrutiny and diagnostics, perhaps in future research.
Media rankings are an important factor affecting university reputation and these have proven to be very important determinants of university selection, graduate salaries, university reputation, and a number of other variables. The Economist’s ‘Which MBA?’ Rankings and the Financial Times (FT) rankings from 2009 are selected as the dependent variables and is essentially a proxy for the reputation and perceived value of a business education from a given university. It is acknowledged that these rankings - by construction - are determined by a number of different factors, including faculty with doctorates, research rankings, employment rates, job satisfaction, student feedback, employer feedback, salary today, and many other variables. Of these variables, salary today was found to be the key determinant of all rankings, statistically significant at the 0.001 per cent level, with a high F-test value, very low standard errors and at least half of ranking variance explained solely by salary (see Table 2 below).

Table 2: Selection of Control Variables from Available Data

<table>
<thead>
<tr>
<th>Exploratory Variable</th>
<th>Dependent Variable</th>
<th>Economist Rank</th>
<th>Financial Times Rank</th>
<th>Financial Times Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>129.02**</td>
<td>179.17***</td>
<td>78.54</td>
<td></td>
</tr>
<tr>
<td>Faculty Research</td>
<td>0.14</td>
<td>0.09</td>
<td>-0.04</td>
<td></td>
</tr>
<tr>
<td>FT Research Rank</td>
<td>0.07</td>
<td>0.12</td>
<td>0.52</td>
<td></td>
</tr>
<tr>
<td>Salary Today</td>
<td>-0.07***</td>
<td>-0.01***</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Faculty with Doctorate (%)</td>
<td>-0.16</td>
<td>-0.13</td>
<td>-0.57</td>
<td></td>
</tr>
<tr>
<td>R squared</td>
<td>0.53</td>
<td>0.75</td>
<td>0.27</td>
<td></td>
</tr>
<tr>
<td>Overall FT Statistic</td>
<td>8.68***</td>
<td>28.76***A</td>
<td>5.55**</td>
<td></td>
</tr>
<tr>
<td>Sample Size</td>
<td>81</td>
<td>118</td>
<td>118</td>
<td></td>
</tr>
</tbody>
</table>

* Denotes significance at the 10% level
** Denotes significance at the 5% level
*** Denotes significance at the 1% level

Therefore, average salary today, as provided by the FT data set, was deemed the most important control variable for the analysis. It also captured any effects the other variables may have had, as variables with mild significance – such as research ranks – were rendered insignificant under the inclusion of salary. This is also intuitively appealing, because we know that salary is a prime determinant in ranking calculation. Neglecting this factor would result in biased estimators due to omitted variable bias. Due to lack of data, and possible biases in other subjective measures, this is the only control variable used for all regressions. In analyses with the FT ranks as the dependent variable, the FT’s own research rankings were found to be a key determinant of rankings, so it was also included as a control. It was not statistically significant in determining the Economist’s rankings, so thereby omitted.

To account for social dimensions of activity in university, a number of explanatory variables were explored. Most of these were in the form of dummy variables. These dummy variables simply indicated whether these factors were present in the university, or not, and represented by 1 = yes and 0 = no in the data set, respectively. These explanatory variables were identified earlier. Therefore, the regression model was constructed as follows. The dependent variable \( r \) was the ranking of university \( i \) in 2009, \( x \) represents one or more of the previously enumerated explanatory variables and \( Z \) is a vector of one or more control variables. The basic model to be estimated is as follows:

\[
r_i = \alpha_0 + \alpha_1 x_i + \alpha_2 Z + \varepsilon_i
\]

where \( \alpha \)'s and \( A \) are parameter coefficients to be estimated and \( \varepsilon \) is the residual error term.

Therefore, using the Economist’s rankings as a dependent variable, the results showed that social electives were associated with improved rankings of 26 ranks on average, and an integrated or whole program dedicated to ‘social’ aspects were associated with better rankings by the average margin of 17 points. As Table 3 shows, both of these are statistically significant at the 0.01 and 0.05 levels, respectively, and models exhibit extremely high f-values illustrating overall model significance.

Varying the model specification yielded quite different results, showing the model was highly sensitive to the selection and inclusion of controls. More specifically, Pinstripes Rankings, Social Competitions, and Post-graduate programs were highly significant determinants of rankings once the salary control variable was removed. This indicated possible multi-collinearity between these factors and salary. This typical statistical weakness actually provides an interesting insight to an alternative hypothesis:
‘Social’ business educations may actually be associated with higher salaries as well. The FT rankings yielded somewhat conflicting results, with all of the explanatory variables proving statistically insignificant determinants of the rankings. The controls were not dropped as in the first case because of the clear bias imposed by doing so, and results are reported in Table 4.

Table 3: Regression with Economist Rankings as Dependent Variable

<table>
<thead>
<tr>
<th>Explanatory Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>29.86***</td>
<td>122.61***</td>
<td>133.06***</td>
<td>103.27***</td>
<td>133.48***</td>
<td>54.97***</td>
<td>115.6***</td>
<td>115.39***</td>
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<td>Electives</td>
<td>-26.29***</td>
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</tr>
<tr>
<td>Social Competition</td>
<td>-24.48***</td>
<td>-8.76</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Post-graduate Program</td>
<td></td>
<td>-19.52**</td>
<td>-11.2</td>
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<td>0.29</td>
<td>0.42</td>
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<tr>
<td>Overall F Statistic</td>
<td>3.12*</td>
<td>16.4***</td>
<td>22.07***</td>
<td>35.23***</td>
<td>21.6***</td>
<td>17.29***</td>
<td>26.06***</td>
<td>26.06***</td>
</tr>
<tr>
<td>Sample Size</td>
<td>89</td>
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<td>74</td>
<td>74</td>
<td>73</td>
<td>91</td>
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</tbody>
</table>

R squared                     0.07  0.49  0.38  0.49  0.38  0.29  0.42  0.42
Overall F Statistic           3.12  16.4** 22.07*** 35.23*** 21.6*** 17.29*** 26.06*** 26.06***
Sample Size                   89    81    74    74    73    91    74    74

* Denotes significance at the 10% level
** Denotes significance at the 5% level
*** Denotes significance at the 1% level

Table 4: Regression Results using FT Rankings as the Dependent Variable

<table>
<thead>
<tr>
<th>Explanatory Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tr>
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<td>0.18**</td>
<td>0.18**</td>
<td>0.16**</td>
<td>0.18**</td>
<td>0.18**</td>
<td>0.18**</td>
<td>0.18**</td>
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<td>Pinstripes Rank 2009</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrated or Whole Program</td>
<td>0.63</td>
<td>0.24</td>
<td>0.73</td>
<td>0.66</td>
<td>0.66</td>
<td>0.66</td>
<td>0.66</td>
<td>0.66</td>
</tr>
<tr>
<td>Post-graduate Program</td>
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<td>0.24</td>
<td>0.73</td>
<td>0.66</td>
<td>0.66</td>
<td>0.66</td>
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<td>0.66</td>
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<tr>
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<tr>
<td>Conferences</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>R squared</td>
<td>0.63</td>
<td>0.24</td>
<td>0.73</td>
<td>0.66</td>
<td>0.66</td>
<td>0.66</td>
<td>0.66</td>
<td>0.66</td>
</tr>
<tr>
<td>Overall F Statistic</td>
<td>165.86***</td>
<td>30.31***</td>
<td>56.19</td>
<td>61.91***</td>
<td>61.43***</td>
<td>61.82***</td>
<td>61.76***</td>
<td>61.33***</td>
</tr>
<tr>
<td>Sample Size</td>
<td>118</td>
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<td>118</td>
<td>118</td>
<td>118</td>
<td>118</td>
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</table>

Unsatisfied with the findings thus far, some simple correlation scatter plots of the raw data were explored to see if any important relationships had been missed. Figures 1 and 2 show the relationships between the socially-oriented rankings (the Beyond Grey Pinstripes Rankings) and the Economist and FT rankings, and there appears to be no clear linear relationship. However, once basic OLS regression lines are fitted to these two graphs, there appears to be a linear trend, albeit not a very strong one and highly inconclusive evidence of any relationship. Returning to the importance of salary in determining rankings; in addition to salary being a key determinant of Economist and FT rankings, Figure 5 shows there is a clear linear relationship between average salary and Beyond Pinstripes rankings. Note that there appears to be high variance in the data and large standard errors in the fitted regression line. The initial model was re-estimated with salary as the dependent variable, the same explanatory variables, and different rankings as the controls.
As shown in Table 5, this estimation yielded intriguing results. In every regression estimated with salary as the dependent variable, every single social dummy variable is associated with a salary increase of somewhere between 14,307 USD and 33,368 USD. All estimated equations yielded sufficient r-squared figures and was highly statistically significant at the 0.01 level when subject to a coefficient t-test and overall F-test. While there are significant limitations in this simplistic statistical analysis, it does provide preliminary evidence suggesting that increased salaries and thereby improvements in the Economist Rankings are systematically associated with the inclusion of ‘social’ training at university, or the inclusion of ‘social’ aspects at the given university.

Table 5: Regression Results using Salary Today as the Dependent Variable

<table>
<thead>
<tr>
<th>Explanatory Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>8</th>
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<tbody>
<tr>
<td>Constant</td>
<td>108561.8***</td>
<td>125807.8***</td>
<td>131954.4***</td>
<td>131490.8***</td>
<td>125439.6***</td>
<td>129493.4***</td>
<td>130932.2***</td>
<td>126082.9***</td>
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<tr>
<td>Integrated or Whole Program</td>
<td>33168.23***</td>
<td>20,986.4***</td>
<td>14106.67***</td>
<td>-296.38***</td>
<td>-377.91***</td>
<td>-287.04***</td>
<td>-362.63***</td>
<td>-377.58***</td>
</tr>
<tr>
<td>Economist Rank 2009</td>
<td>-296.38***</td>
<td>-377.91***</td>
<td>-287.04***</td>
<td>-362.63***</td>
<td>-377.58***</td>
<td>-310.7***</td>
<td>15256.88***</td>
<td>17699.29***</td>
</tr>
<tr>
<td>Financial Times Rank 2009</td>
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<td>-377.91***</td>
<td>-287.04***</td>
<td>-362.63***</td>
<td>-377.58***</td>
<td>-310.7***</td>
<td>15256.88***</td>
<td>17699.29***</td>
</tr>
<tr>
<td>Post-graduate Program</td>
<td>-296.38***</td>
<td>-377.91***</td>
<td>-287.04***</td>
<td>-362.63***</td>
<td>-377.58***</td>
<td>-310.7***</td>
<td>15256.88***</td>
<td>17699.29***</td>
</tr>
<tr>
<td>Electives</td>
<td>-296.38***</td>
<td>-377.91***</td>
<td>-287.04***</td>
<td>-362.63***</td>
<td>-377.58***</td>
<td>-310.7***</td>
<td>15256.88***</td>
<td>17699.29***</td>
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<td>Foundation or Faculty</td>
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<td>-310.7***</td>
<td>15256.88***</td>
<td>17699.29***</td>
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<tr>
<td>Conferences</td>
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<td>-377.91***</td>
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<td>-310.7***</td>
<td>15256.88***</td>
<td>17699.29***</td>
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<tr>
<td>Social Competition</td>
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<td>-377.91***</td>
<td>-287.04***</td>
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</tr>
<tr>
<td>R squared</td>
<td>0.41</td>
<td>0.51</td>
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<td>0.5</td>
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<tr>
<td>Overall F Statistic</td>
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<td>36.54***</td>
<td>102.82***</td>
<td>28.2***</td>
<td>30.72***</td>
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DISCUSSION AND CONCLUSION

Rindova et al. (2005) argue that the purpose of ‘resource signals’ is to indicate student quality and ability to create value for a firm. If indeed the market is changing in a way that opportunities to innovate occur at the intersection of unmet social and business needs, students that have the skills to exploit these opportunities to create value and gain sustainable competitive advantage for a firm will have a significant advantage over those who do not. Our data supports these trends which suggest that the market is changing in such a way that strongly rewards social innovation for not only students, but also universities. From a public relations perspective, engaging in activities such as social venture competitions, for example, is an attractive opportunity to affiliate a university with high-status actors including high-performing competing universities, sponsors, and donors: utilizing partnership opportunities with firms that vary from Nike to Ashoka, the leading social entrepreneurship association. These competitions bring in major venture capitalists from both the social and private sector, drawn in by the appeal of employing young innovators before they even graduate.

Similarly, another ‘awareness activity’ that leads to gains in reputation for a university is appearing favourably in (sometimes hotly-contested) media rankings. In celebrating the close of the first decade of the new millennium, HBR named sustainability as one of the most influential ‘management’ ideas of the entire decade (Kirby 2010). There is an unprecedented opportunity and energy behind the need for reform in business circles that could make the promotion of social innovation among business students a major gain for a university’s reputation and profits, students’ career prospects, and the business community at large. It is a unique opportunity to renew and legitimize the role of business in society.

While both the qualitative and quantitative analysis followed a robust method, a key limitation was restricting the selection of universities to those included in rankings by business magazines. It is impossible to remove the biases of the magazines that produced these rankings. We have to ask ourselves for who they write their magazines, and which type of stakeholder this is when it comes to the quality of education; is it students or potential employers? Within the data compiled from the universities’ various advertisements, we have to consider the magnitude of the self-reporting bias, and ask ourselves just how representative these course descriptions are of the actual course content delivered. Even with accurate descriptions, the availability of information was not consistent across variables. Our quantitative analysis is viewed as exploratory, and suffered of a number of possible limitations, including: limited controls; high sensitivity to model specification; endogeneity and reverse causality; multi-collinearity; and, small sample sizes. Nonetheless, clear evidence is presented that there are certainly a series of relationships which require further investigation. Better rankings are highly associated with higher salaries, which are clearly associated with socially-oriented education. Moreover, Economist rankings are also positively correlated with socially-oriented educations. Robust evidence is provided of clear positive correlations between social dimensions in business education, and better reputation and salary, albeit without showing any causality. Further research should be targeted at better understanding these dynamic relationships and establishing causality between social dimensions and improved rankings and graduate salaries.

In sum, whether or not the socially-oriented educations are causing the improvements in reputation and salary is ambiguous from this evidence, but better universities are systematically providing increased socially-oriented educational options, and these higher ranking schools are also producing graduates with higher salaries. One way for universities to gain better standings in international rankings is to explore the kinds of qualities these publications implicitly reward. This would involve acquiring the text data these publications use to evaluate about the highest-ranking universities and using rigorous data-mining to surface the recurring themes and concepts. By revealing the themes and concepts these publications reward, like this research commences to do, greater transparency about the values that are implicitly involved in determining these rankings can be attained. Though these publications may have the best intentions in being transparent about the measures involved, it can be a positive exercise in self-awareness to mediate their own biases or reveal them to readers. For students, this information would be invaluable; they would be able to make more informed decisions about which publications to consult. As this research shows, different publications rank the same universities very differently. For universities, this could help them decide which rankings can serve as one type of benchmark for performance. With this kind of information, universities can discern which publications’ values align with the university’s vision, and if rankings are a form of ‘awareness’ activity in which they would like to partake. Just as an example, a university could aim to rank highly in the Aspen Institute’s ranking if they find it difficult to differentiate themselves in rankings that are very closely associated with rewarding institutions that have higher tuition rates. Again, researching and exposing the biases in rankings by using data-mining and statistical analysis...
can be an empowering activity for universities to take more control over the factors which determine their reputation.

Another area of research is quantifying the benefits of integrating social components into business curriculums. For faculty and students who are interested in seeing more social components in their curriculum, it is important to identify tangible economic value and benefits these activities would create. Some quantifiable measurements that would be beneficial include the number of donors, sponsors, media mentions, recruited and partnerships social innovation activities attract, such as hosting social venture competitions. Another area of exploration should be strategic alliances in research endeavours or think tanks with competing universities and the savings by pooling resources. Financial benefits from the above actors becoming involved in a university’s efforts in the form of endorsements, advertising, internship programs for students, donations, and scholarships could also be beneficial.

Finally, this area of research would greatly benefit from a demand analysis for graduates with both business skills and the ability to create social value. Research on new jobs requiring both of these skills could help foster interest in the business student body to pursue more socially-conscious business careers. The positive reception of social innovation among communities, non-governmental organisations, and governments draws a sharp contrast with the mobilisation of these same actors against traditional business practice. Developing social innovators is an opportunity for business education to radically change its image in the public. Accomplishing this would require multi-disciplinary courses. For example, corporate social responsibility strategies require a political and social understanding of the area of operation beyond traditional business modules. Integrating knowledge from other disciplines would attract many more students that are interested in learning about business strategies to develop financially sustainable institutions to accomplish both social and economic objectives. Unruh (2010) suggests that a lot of innovation today is happening by drawing ideas from geological forces and processes for our own productive forces. This process which he calls ‘geomimicry’ is just one example of how business innovation can come from traditionally non-business studies.

Universities should also explore developing measures of social impact of their alumni for publicity reasons, and to benchmark their own performance. This would also help create profiles of students that differentiate for example, a University of Queensland student, from other student bodies. Also, universities could follow how the ability of students to create social value changes over time. A paradigm shift is erasing the rigid distinction between business solutions and social solutions and presents university a unique opportunity to re-establish the relevance of business education by producing leading innovators in social business solutions. Aside from the vast amount of literature that supports this paradigm shift, this research has added empirical evidence that demonstrates that indeed high-performing universities offer business educations where social dimensions are dominant themes in the course offerings. Additionally, this research has empirically demonstrated that the integration of social dimensions into business schools is associated with higher graduate salaries and better media rankings. Many private sector firms are seizing the competitive advantage yielded from pursuing socially-optimal business practices, and since business schools are essentially operating as businesses under competitive market conditions, it is in their best interest to follow suit. Leading universities are already accruing social and economic value by staying abreast of social innovation. It is not only in society’s best interest that business schools adapt to increasing social pressures in modern times, but it is also imperative from a business perspective.

**CONCLUCING REMARKS**

A paradigm shift is erasing the rigid distinction between business solutions and social solutions and presenting a unique opportunity for universities to legitimize the relevance of business education by producing leading innovators in social business solutions. Aside from the vast amount of literature supporting this paradigm, evidence has been provided that the top social dimensions are dominant themes in the course offerings of high-performing universities, and empirically, high performing universities are more likely to integrate social dimensions into their teachings. Integration of social dimensions into business schools is associated with higher graduate salaries and better media rankings. Many private sector companies are seizing the competitive advantage yielded from pursuing socially optimal business practices, and since business schools are essentially operating as businesses under competitive market conditions, it is in their best interest to follow suit. Leading universities are already accruing social and economic value by staying abreast of social innovation. It is not only in societies best interest that business schools adapt to increasing social pressures in modern times, but it is also imperative from a business perspective.
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