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How entrepreneurial are social entrepreneurship education providers? The role of universities' entrepreneurial ecosystems in the provision of elective social entrepreneurship courses to business students

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ABSTRACT

With the growing emphasis on social entrepreneurship (SE), many universities are delivering social entrepreneurship courses (SECs) to develop students' social awareness and aspirations, and socially entrepreneurial behaviors. This study investigates the extent to which the entrepreneurial ecosystem (EE), entailing entrepreneurism at individual, university and regional levels, may impact on universities' decisions to offer SECs to business students. Using data from 501 US-based, AACSB-accredited business schools, the finding indicates the importance of the universities' EE and entrepreneurialism at multi-levels in their commitment to SECs.

KEYWORDS

Entrepreneurial ecosystem; social entrepreneurial education; entrepreneurial university

Introduction

Recent corporate scandals put intense pressure on business schools to bridge the free market orientation of their curricula and the associated individualistic, profit-prioritizing, sometimes unethical, mentalities. Spearheaded by the Association to Advance Collegiate Schools of Business (AACSB), many business ethics and corporate social responsibilities courses were developed (Rutherford et al. 2012), but SECs, with their business emphasis, are increasingly being offered to instill an entrepreneurial mindset in students to innovatively tackle societal challenges (Lawrence, Phillips, and Tracey 2012).

Unlike previous research that predominantly studied SECs' pedagogies, we uniquely focused on supply-side factors, as the environmental and institutional drivers behind their offerings are little known. Understanding this would enable us to identify possible provision gaps to be tackled and support socially entrepreneurial individuals. Unlike business ethics courses, the inseparability of 'social' and 'entrepreneurship' would imply that the successful implementation of SECs requires a 'built-in' infrastructure within the university to support the delivery of both 'social' and 'entrepreneurship' elements. Entrepreneurship is likely to be deep-rooted only in some, suggesting that the extent to which SE is understood, accepted, and embraced within a university and the resulting subsequent uptake of SECs may vary.

Our main research question is to establish whether the EE of a university would affect its decision to offer SECs to its business students. As EE is a multi-faceted concept (Theodoraki, Messeghem, and

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Rice 2018), we follow the metrics approach to operationalize theoretical elements of the EE into quantifiable components (Leendertse, Schrijvers, and Stam 2021), before determining whether each component will impact on SECs' development. We then establish whether the different facets of entrepreneurialism produce an aggregate effect on SECs' development.

Literature review

We reviewed literature from the EE perspective to explain how the different elements of the EE can contribute to the diffusion of entrepreneurialism within, intending to theorize the outcome of universities' decisions to provide SECs as a result of such diffusion. The EE perspective (Spigel 2017) presents a holistic framework regarding business start-up, as the circumstances of starting a business is a function of the interdependencies of the actors and institutions within a particular ecosystem (Isenberg 2010). While approaches in studying EE are diverse (e.g. system, metrics, configuration, network), all viewed EE as a multi-dimensional concept (Theodoraki, Messeghem, and Rice 2018; Leendertse, Schrijvers, and Stam 2021), and stated that successful EE requires the simultaneous presence of several interconnected elements, including established ventures, finance, public support and network (Moore 1993).

This study draws from the system approach to illuminate the theoretical mechanisms of how mutually reinforcing entrepreneurial elements can be diffused and permeated within a university's EE (Dagnino and Carayannis 2018), in turn nurturing entrepreneurialism and the emergence of SECs. From agglomeration economies' literature, particularly network, clustering and spillover theories, the agglomeration and interaction of mutualistic dependent and complementary related entrepreneurial actors and infrastructure create associated positive externalities (Szerb et al. 2019), with successful cases further generating awareness and legitimacy (Bosma et al. 2012), developing a virtuous loop that cultivates and permeates entrepreneurialism throughout the EE (Stam and van de Ven 2021). Based on this view, we posit that a strong EE at universities can support the 'entrepreneurialisation' of their education curriculum, particularly in its pedagogical and entrepreneurship focuses (Dorner and Gorman 2006; Offorma 2016). An SEC is, therefore, a collective output of the diffusion. This study also draws from the metrics approach (Leendertse, Schrijvers, and Stam 2021) to empirically quantify its crucial components of a university's EE. Aiming to capture a much more rounded understanding of what constitutes being part of a university EE as recommended by Graham 2014, we take crucial elements from input (Graham 2014), process (Park and Leydesdorff 2010), and people and stakeholder (Acs et al. 2017) metrics classifications, which we discuss in the subsequent sections.

Conceptual framework and hypothesis development

SECs' offering is ultimately determined by the entrepreneurialism of the university EE, which is upheld by multiple mutually reinforcing aspects. Six crucial attributes of university EEs are identified in Figure 1.

Entrepreneurial vision

Following the upper echelon perspective (Hambrick and Mason 1984), decisions that organizations make are, guided by organizations' visions, determined by the paths that the leadership teams have chosen (Etzkowitz 2003). Having entrepreneurship written into a mission statement would ensure that entrepreneurship is 'encoded in the DNA of the university' (Fetters, Greene, and Rice 2010, 18), setting expectations and policies towards entrepreneurship (Klemm, Sanderson, and Luffman 1991). With university commitment, staff would consciously ensure that entrepreneurship would fit into various aspects of the curriculum (Graham 2014). Therefore,

> H1. Universities with strong entrepreneurial vision are more likely to offer SECs to their business students, compared to those without such vision.

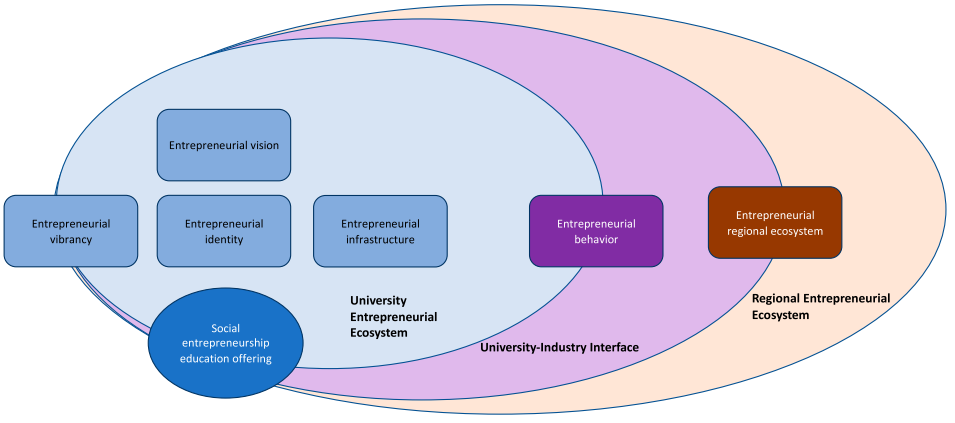

Figure 1. Conceptual model for a university entrepreneurial ecosystem.

Entrepreneurial infrastructure

Research on spatiality suggests that physical infrastructure plays a symbolic role in shaping organizational actions (Hancock 2006). Entrepreneurial infrastructure is physical evidence of a university's willingness to cultivate an entrepreneurial culture (Kirp 2003), with empirical studies pointing to the presence of Science Parks to successfully diffuse entrepreneurial values and catalyst behaviors (Link and Scott 2017). Their presence helps persuade faculties to offer SECs and increase receptiveness amongst students. Therefore,

> H2. Universities with strong entrepreneurial infrastructures are more likely to offer SECs to their business students, compared to those without such infrastructure.

Entrepreneurial vibrancy

The richness of entrepreneurialism should also be reflected through the vibrancy of the entrepreneurial student community, where students enhance their entrepreneurial experience through co-creating activities (Fetters, Greene, and Rice 2010). Such proactivity means a higher receptiveness of entrepreneurial forms of learning towards both business and social elements of the curriculum. Therefore,

> H3. Universities with strong entrepreneurial vibrancy are more likely to offer SECs to their business students, compared to those without such mentioning.

Entrepreneurial identity

The social identity theory (Tajfel and Turner 1979) suggests that identity is developed through shared values, reinforced through further behavioral and attitudinal dispositions towards it. Facilitators and administrators in universities where there is a strong entrepreneurial identity would view SECs as effective in reinforcing students' sense of belonging towards entrepreneurialism while delivering their social mandates (Graham 2014). Therefore,

> H4. Universities, where their citizens share a stronger entrepreneurial identity, are more likely to offer SECs to their business students, compared to those without such mentioning.

Entrepreneurial behavior

The level of business start-up by university citizens is often seen as the archetypical manifestation of a healthy university EE (Graham 2014). Entrepreneurial successes amongst current and former

university citizens help to create a positive image towards entrepreneurship, and in doing so increase the acceptance of SE amongst university citizens, faculties' inclination to offer SECs, and students' receptiveness towards them. Therefore,

> H5. Universities that have a higher level of entrepreneurial behavior amongst their citizens are more likely to offer SECs to their business students, compared to those without such mentioning.

Entrepreneurial regional environment

University and regional EEs are intertwined (Isenberg 2010). A vibrant regional EE could enhance the entrepreneurial dynamism at universities (Graham 2014), through increasing university citizens' exposure and supporting entrepreneurial endeavors (Fetters, Greene, and Rice 2010). Such an environment is also likely to nurture the addressing of social issues through an entrepreneurial approach. Students also become resonant with SE, increasing their reception to such courses. Therefore,

> H6. Universities that are based within an entrepreneurial regional environment are more likely to offer SECs to their business students, compared to those without such mentioning.

A university EE perspective

Previous studies from the system perspective suggest that the development of a successful ecosystem requires the simultaneous presence of several interconnected elements (Moore 1993), and that ecosystems should be mutually reinforcing, requiring both top-level supports and grassroots initiatives (Roundy 2020). Synergies across different activities and layers of the hierarchy would facilitate the establishment of entrepreneurial culture and capabilities (Graham 2014), including the offering of SECs. Therefore,

> H7. Universities with more of the above attributes are more likely to offer SECs to their business students

Data and methods

Sample identification strategy

The sample ($n = 501$) was selected from the 2015 database of the US-based AACSB-accredited universities (as the accreditation offers consistency across a sample) and we compiled the data utilizing multiple sources, consistent with previous studies (Rutherford et al., 2012).

Measures

Dependent variable

SEC is the dependent variable. Following Rutherford et al. (2012) precedent, we visited the undergraduate and postgraduate online catalogues of the universities to search for SECs and go through the course descriptions, binarily denoting 1 to those offering SECs and 0 as otherwise. We include SECs emphasizing the development and management of entrepreneurial social ventures, but exclude short, non-curricula initiatives, courses with accounting, finance or marketing focuses or those from other departments unavailable to business students.

Independent variables

Entrepreneurial vision was measured through a content analysis of the mission statements of the school, following Davis et al. (2007) in creating a dichotomous variable, denoting 1 when entrepreneurship was highlighted in the university's mission statements and 0 otherwise.

Entrepreneurial infrastructure was measured by whether incubators or accelerators were present in or had access to the universities or schools with the purpose of business creation. Following Kolympiris and Klein (2017), we created a dichotomous variable by denoting 1 when incubators or accelerators were present in or gave access to universities for business creation, and 0 otherwise.

Entrepreneurial identity was measured by the number of students, graduates and alumni who classified themselves as entrepreneurs on the LinkedIn database, adjusted for student number following the precedent of prior studies (Christofides, Muise, and Desmarais 2009) because disclosure as self-promotion indicates a positive perception of entrepreneurship (Altenburger et al. 2017) and the receptivity amongst peers. We categorize universities into high (top third), medium (middle third), and low (bottom third) levels of students' entrepreneurial identity.

Entrepreneurial vibrancy was measured by the presence of Enactus, the most recognizable student enterprise program in the US, which is consistent with Sansone, Ughetto, and Landoni (2021). We denoted 1 when Enactus was present and 0 otherwise.

Entrepreneurial behavior is measured by the number of entrepreneurs amongst staff, students and graduates who successfully obtained venture capital recorded on Crunchbase, after controlling for student population. The use of Crunchbase figures as a measure of the EE's output is consistent with Leendertse, Schrijvers, and Stam (2021).

Entrepreneurial regional environment is measured by the Kauffman index of start-up activity in 2015 at the state level (Morelix et al. 2015), as the index tracks 'the annual nationwide incidence of new entrepreneurs starting firms' (Bates, Farhat, and Casey 2021, 7).

Finally, *universities' EE* was estimated in two steps. First, we transformed the attributes of the EE, such as *entrepreneurial identity, entrepreneurial behavior,* and *entrepreneurial regional environment,* that were measured as continuous variables, into dummy variables. We respectively created three dummy variables, with 1 indicating that the universities or schools are being ranked in the top-third in that dimension of entrepreneurialism, and with 0 otherwise. Then, we estimated *the strength of the EE* of universities by summing up the values of all six attributes of the EE, as mentioned above. The creation of a continuous variable by aggregating the values of relevant dummy variables is consistent with Porta et al. (1998).

Control variables

Control variables are the *institutional structure* of the organizations, including *log of operational budget* as a proxy to size and financial wealth, *social orientation* as measured by the number of students, graduates and alumni who reported as being involved in community and social services on LinkedIn, adjusted for students' size, *diversity orientation* based on the number of countries represented on campus, and *institutional reputation* measured by a non-canonical definition of Ivy League status (denoted 1 and 0 otherwise) as classified by Greene and Greene (2010).

Data analysis

Descriptive statistics are provided in Table 1.

Table 2 shows that all the independent variables except *entrepreneurial vibrancy* are significantly correlated with the dependent variable, SECs' offering.

To test hypotheses, we used binary logistic regression, which is a well-established practice within the education literature (Peng et al. 2002), as our dependent variable is the provision of a specific course, the adoption of a binary response and thereby a logistic regression was necessary (Rutherford et al. 2012). Following Cabrera (1994), we utilized hierarchical testing of models (Models 1–9 as presented in Table 3) in a forward stepwise manner, which is widely adopted in education studies (St John 1991). In addition, following Stage (1988), we provided an additional statistical test (e.g. ANOVA) to complement the logistic regression when applicable.

Table 1. Mean, frequency, and range of the scores of the variables used in this study.

		Frequency			Range	
Variables	Mean (s.d)	Yes	No	Total	Minimum	Maximum
SEC offering	0.271 (0.445)	136	365	501	0	1
Institutional structure	6.79 (1.464)			501	0	8.87
Social orientation	14.76 (10.67)			501	0	137.82
Institutional reputation	0.114 (0.318)	57	444	501	0	1
Diversity orientation	1.002 (0.819)			501	0	4
Entrepreneurial vision	0.04 (0.200)	21	481	502	0	1
Entrepreneurial infrastructure	0.53 (0.498)	224	277	501	0	1
Entrepreneurial identity						
- Lowest	1.031	152	349	501	0	0
- Middle	(0.799)	181	320	501	1	1
- Highest		168	333	501	2	2
Entrepreneurial vibrancy	0.323 (0.468)	339	162	501	0	1
Entrepreneurial behaviour	0.764 (5.107)			501	0	14.37
Entrepreneurial regional environment	0.518 (4.454)			501	–8.2	21.04
EE	1.83 (1.273)			501	0	6

Results

Overall, all the models in Table 3 appear to be a good fit for the data as the omnibus tests were significant and the Hosmer and Lemeshow test results were insignificant in all models (Hosmer, Lemeshow, and Cook 2000). As the independent variables were increased from Models 1–9, the evaluated model-fit based on changes in R^2 (Negelkerke R^2 and Cox and Snell R^2), loglikelihood values, and correct prediction of the dependent variable improved (see Table 3).

The logistic regression analysis results presented in Model 1 of Table 3 (control variables) show that *institutional structure, institutional reputation,* and *social orientation* have significant effects, whilst *diversity orientation* has an insignificant effect, on SEC offering. Similarly, Table 3 shows that three independent variables, *entrepreneurial infrastructure* ($b = 2.334$, $p < .05$; ANOVA test: $F = 120.2$, $p < .001$) (Model 3), *entrepreneurial identity* ($b = 1.187$, $p < .05$; ANOVA test: $F = 31.01$, $p < .001$) (Model 4), *entrepreneurial behavior* ($b = 0.540$, $p < .05$) (Model 6), and *entrepreneurial regional environment* ($b = 0.050$, $p < .05$) (Model 7), have positive significant effect on SEC offering, supporting H2, H3, H5, and H6, respectively, whilst two independent variables, *entrepreneurial vision* ($b = 0.714$, $p > .05$; ANOVA test: $F = 4.670$, $p < .05$) (Model 2) and entrepreneurial vibrancy ($b = 0.290$, $p > .05$; ANOVA test: $F = 4.4$, $p < .05$) (Model 5), have positive but insignificant effect on SEC offering, rejecting hypotheses H1 and H4, respectively. Finally, Model 9 demonstrates that *entrepreneurial ecosystem* positively influences SEC offering ($b = 1.023$, $p < .05$), supporting H7.

Discussion and conclusion

In contrast with the literature's pedagogical emphasis, our study focuses on a supply-side question and found that universities possessing a strong EE would be more inclined to develop interventions to develop socially responsible citizens through an entrepreneurial approach. This is validated through the positive correlations between the majority of the entrepreneurialism variables and

Table 2. Correlation matrix.

Variables	1	2	3	4	5	6	7	8	9	10	11
1. SEC offering	1										
2. Institutional structure	0.236**	1									
3. Social orientation	0.134**	0.041	1								
4. Institutional reputation	0.318**	0.180**	−0.011	1							
5. Diversity orientation	0.240**	0.425**	−0.083	0.161**	1						
6. Entrepreneurial vision	0.096*	0.031	−0.034	0.051	0.097*	1					
7. Entrepreneurial infrastructure	0.441**	0.214**	−0.30	0.246**	0.356**	0.048	1		–		
8. Entrepreneurial identity	0.324**	0.172**	0.416**	0.269**	0.134**	0.079	0.157**	1			
9. Entrepreneurial vibrancy	0.058	0.048	0.005	0.008	0.061	0.090	0.038	0.004	1		
10. Entrepreneurial behavior	0.160**	0.040	0.0397**	0.074	−0.022	0.020	0.099*	0.150**	−0.047	1	
11. Entrepreneurial regional environment	0.097*	−0.017	0.102*	0.038	−0.049	0.014	0.004	0.182**	0.029	0.054	1
12. EE	0.509*	0.201**	0.224**	0.350**	0.245**	0.106**	0.538**	0.640**	0.378**	0.188**	0.383**

*$p < .05$.
**$p < .01$.

Table 3. Logistic regression results for predictors of SEC offering.

	Model S1		Model S2		Model S3		Model S4		Model S5		Model S6		Model S7		Model S8		Model S9	
	B (S.E.)	Exp (B)	*B* (S.E.)	Exp (B)	*B* (S.E.)	Exp (B)	*B* (S.E.)	Exp (B)	*B* (S.E.)	Exp (B)	*B* (S.E.)	Exp (B)	*B* (S.E.)	Exp (B)	*B* (S.E.)	Exp (B)	*B* (S.E.)	Exp (B)
Institutional structure	1.275** (0.332)	3.579	1.246** (0.332)	3.465	0.843* (0.344)	2.323	0.956** (0.340)	2.602	1.293** (0.333)	3.642	0.985** (0.266)	2.667	1.313** (0.341)	3.719	0.641** (0.260)	1.899	0.626* (0.299)	1.870
Social orientation	0.03** (0.011)	1.031	0.030** (0.011)	1.032	0.038** (0.013)	1.038	0.014 (0.010)	1.014	0.031** (0.011)	1.031	0.026* (0.011)	1.026	0.028* (0.011)	1.028	0.021 (0.012)	1.021	0.012 (0.010)	1.012
Institutional reputation	1.229** (0.356)	3.417	1.243** (0.356)	3.465	1.041** (0.373)	2.833	1.052** (0.359)	2.863	1.227** (0.356)	3.412	0.820* (0.381)	2.270	1.193** (0.359)	0.001	0.538 (0.407)	1.713	0.669 (0.374)	1.953
Diversity orientation	0.176 (0.180)	1.193	0.171 (0.180)	1.186	−0.015 (0.191)	0.985	0.228 (0.182)	1.256	0.162 (0.181)	1.176	0.249 (0.173)	1.283	0.190 (0.183)	1.209	0.015 (0.189)	1.015	0.168 (0.186)	1.183
Entrepreneurial vision			0.714 (0.520)	2.043											0.700 (0.631)	2.013		
Entrepreneurial infrastructure					2.334** (0.349)	10.318									2.305** (0.353)	10.021		
Entrepreneurial identity (bc: lowest third)																		
Middle third							0.398 (0.333)	1.489							0.238 (0.357)	1.268		
Highest third							1.187** (0.352)	3.278							0.944* (0.396)	2.569		
Entrepreneurial vibrancy									0.290 (0.236)	1.336					0.331 (0.267)	1.393		
Entrepreneurial behavior											0.540** (0.131)	1.715			0.283* (0.131)	1.328		
Entrepreneurship regional environment													0.050* (0.025)	1.051	0.041 (0.028)	1.041		
EE																	0.908** (0.119)	2.479
Constant	−10.87** (2.246)		−10.711** (2.243)		−9.323** (2.316)		−9.008** (2.281)		−11.09** (2.253)		−9.03** (1.811)		−11.108** (2.301)		−9.530** (1.993)		−7.830**	
N	501		501		501		501		501		501		501		501		501	
X^2	99.872**		101.711**		162.619**		113.746**		101.372**		119.106**		103.222**		189.097**		167.746**	
Df	4		5		5		6		5		5		5		8		5	
%Correctly predicted	77.8%		77.8%		80.4%		77.8%		76.8%		78.4%		77.8%		82.8%		79.8%	
Nagelkerke R^2	0.262		0.266		0.402		0.295		0.266		0.307		0.271		0.457		0.413	
Cox and Snell R^2	0.181		0.184		0.277		0.203		0.183		0.212		0.187		0.315		0.285	
−2 Log likelihood	486.00		484.161		423.253		472.126		484.500		466.767		482.016		396.141		417.492	

**Sig. $p < .01$, *Sig. $p < .05$, [?]Sig $p < .1$.

their aggregate, with SEC offerings. Our study found no statistically significant relationships between *entrepreneurial vision, entrepreneurial vibrancy,* and the offerings of SECs. The former may be due to the difficulty in translating mission discourse into action (Lucas 1998). Instead, commitment of leadership is best manifested in the resources that they devoted to entrepreneurship, with *entrepreneurial infrastructure* showing a highly significant correlation with SEC offerings. The insignificant result for *entrepreneurial vibrancy* could indicate that Enactus may not be its best proxy, as the program gears towards socialization and employability (Pittaway et al. 2015) rather than *entrepreneurial behaviors,* which is found to be a predictor.

As our study suggests that universities without a strong *EE* would struggle to see the need to offer SECs, convincing universities without a strong entrepreneurial outlook to offer SECs could be a practical challenge, as their limited entrepreneurship exposure could reduce the perceived benefits SECs may bring. SECs have the potential to offer business schools an opportunity to align their social concerns with a business-orientated approach in their implementation (Kwong, Thompson, and Cheung 2012). Highlighting this to universities and business schools could potentially improve their social provision. Going forward, academic bodies such as the AACSB or the Academy of Management (AOM) can play a proactive role in organizing knowledge dissemination activities beyond the current business ethics emphasis (Kurpis, Beqiri, and Helgeson 2008). More opportunities for universities to share experiences and practices on SECs provision would help in raising awareness of their benefits and offer delivery knowhow. Furthermore, persuading public bodies and major employers of the benefits of SECs and establishing their support could kickstart SEC provision on a nationwide scale.

Limitations of our study and recommendations for future research

SECs are often characterized as a mixed bag with varying objectives (Kwong, Thompson, and Cheung 2012), which is something that we were unable to capture, and thus future research would be helpful. Our study was unable to distinguish the impact of different pedagogical approaches adopted, and therefore, a systematic review of all courses available, capturing the length and the depth of the provision, could aid our understanding of SECs. Furthermore, we excluded universities adopting an extracurricular approach towards SE, such as via social boot camp, business plan competition, or practical service-learning in social enterprises. More comprehensive studies including these would be welcomed. Further study could also examine the differences between undergraduate and postgraduate levels of provision to see whether different pedagogies may have emerged because of the different student groups.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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