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Chapter 6

HEI Teacher Perceptions of Entrepreneurship Education: The Role of Teachers' Entrepreneurial Backgrounds and HEI Managerial Support

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ABSTRACT

Teachers play a key role in implementing entrepreneurship education; however, little attention has been paid to teachers' perceptions of entrepreneurship education and factors affecting these perceptions. The objective of this chapter is to narrow this research gap by investigating the impact of organizational strategy and school leadership on a teacher's perceptions of entrepreneurship in teaching. This chapter explores the impact of a teacher's own entrepreneurial background and entrepreneurship training on these perceptions. The data consist of 1,119 answers from Finnish higher education institute (HEI) teachers. Findings show that managerial practices in the HEI in supporting entrepreneurship education have a positive impact on the teachers' perceptions. Additionally, a teacher's entrepreneurial background and entrepreneurship training play a role in shaping the teacher's perceptions of the importance of entrepreneurship education. Universities can become more entrepreneurial by developing management practices that support the implementation of entrepreneurship education.

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INTRODUCTION

The management of Higher Education Institutions (HEIs), at both the strategic and operational level, has been acknowledged as an important support mechanism in enhancing university-business collaboration (Galán-Muros et al., 2017). A HEI's management compiles the strategies and guidelines for university-business and industry collaboration and supports development work on entrepreneurship education (see O'Connor, 2012; Borhani et al., 2020). In successful entrepreneurial universities, policies and top-down leadership and managerial support foster the integration of entrepreneurial activities and entrepreneurial goals (Borhani et al., 2020). Thus, a HEI's managerial practices also affect, both directly and indirectly, entrepreneurship education practices implemented by teaching staff (Ruskovaara & Pihkala, 2013; Peltonen, 2015). However, perhaps surprisingly, little attention has been paid to clarifying the effect of HEI management on teachers' attitudes and, as a consequence, their readiness to renew pedagogical practices in entrepreneurship education. This chapter aims to enhance understanding of the factors influencing teachers' perceptions of entrepreneurship education. Its core research question focuses on: what are the external (managerial practices) and internal (teachers' background) factors that affect teachers' perceptions of the importance of entrepreneurship education and their interest in it?

In addition to managerial support, teachers' own background (e.g., length of teaching experience) shapes their perceptions of entrepreneurship education and how they implement it (Galán-Muros et al., 2017). Teachers may have different perceptions of entrepreneurship education and its objectives and goals based on their background and prior experiences. However, studies examining differences in teachers' perceptions of entrepreneurship education linked to their entrepreneurial background are scarce (e.g., Penaluna et al., 2012; Ruskovaara & Pihkala, 2015; Ruskovaara et al., 2016), and more research is needed.

Furthermore, according to Ödalen et al. (2018) pedagogical training can also have an impact on teachers' readiness to renew their pedagogical practices. This is particularly important in entrepreneurship education because most HEIs adopt a business school paradigm-based approach to teaching entrepreneurship which is typically focused on new venture creation. However, more recently, there has been a shift from this traditional approach to a more holistic one which focuses on building an entrepreneurial mindset in students (De Carolis & Litzky, 2019). Thus, in this chapter we argue that teachers' perceptions of entrepreneurship education and their willingness to change their practices can be shaped by both internal (teachers' background and managerial support) and external factors (teacher training). We argue that in order to develop an entrepreneurial HEI/university, it is important to consider the organisation's managerial practices as these can have a major impact

on teachers' perceptions of the importance of entrepreneurship education as well their interest in it.

LITERATURE

In this section we discuss the concept of the entrepreneurial university and the different roles HEI management and teachers play in developing the organisation's entrepreneurial ethos and practices. We are particularly interested in how these roles are linked – whether and/or how managerial encouragement and support affect teachers' perceptions of entrepreneurship education, and thus enhance their willingness and capabilities to implement it. We discuss how these issues are addressed in prior research. Higher education institutions (HEIs) play a significant role in promoting economic, ecological and social sustainability in their regions and at the national and global level through various entrepreneurship ecosystems. As Foss & Gibson (2015) suggest, being entrepreneurial can be manifested in universities in two main ways: first, through the commercialization of knowledge and research findings through technology transfer offices (TTOs), and second, through entrepreneurship education. In addition, if we consider the role of universities as 'engines of innovation,' then they also contribute to deepening collaboration with business and industry (Orecchini et al., 2012). Along with the traditional role of HEIs (research and teaching), the so-called 'third mission' of HEIs (societal contribution and regional development) has challenged them to become more entrepreneurial in their ethos and practices, which in turn impacts HEIs' vision statements, governance and teaching practices (Kirby et al., 2011; Stolze & Sailer, 2021). Accordingly, universities are taking more responsibility as catalysts for regional economic and social development (Kirby et al., 2011). This means that along with their traditional role (teaching and research), universities are taking on a stronger role promoting innovation in entrepreneurial and innovation ecosystems (Etzkowitz, 2003). These roles are closely interlinked although there may be differences in how individual universities operationalise these activities (Heinonen & Hytti, 2010). Universities are now undergoing a major transition from traditional educational institutions to becoming entrepreneurial universities; they need to find effective ways to incorporate these new activities as part of their vision and mission statements (Etzkowitz et al., 2000). An 'Entrepreneurial University' is a multifaceted construct and, thus, is still evolving. Prior literatures have referred to the entrepreneurial university as one that is oriented towards innovation and the development of an entrepreneurial culture by providing organizational and support structures for students and staff to initiate intellectual and commercial new ventures (Clark, 1988; Etzkowitz, 2003; Gibb, 2012; Ruiz et al., 2020). These efforts help create and contribute to the economic, social, cultural and environmental value of

the region through the knowledge generated by the university. This cannot be done in isolation and, thus, entrepreneurial universities are strongly connected to wider entrepreneurial ecosystems which include multiple actors such as industry, non-profit organizations, financial institutions and civil society (Ruiz et al., 2020). As Etzkowitz et al. (2018) suggests: “an entrepreneurial university design integrates project-based learning in the curriculum with an outlook of seeking out the useful as well as the theoretical results of investigation. These results are moved into use through an innovation system that includes a penumbra of public and private actors posing problems, concomitantly with the provision of resources.” (p. 169).

This kind of transition requires changes in the university mission, culture, internal organization and functions related to teaching and research, and requires the development of entrepreneurial activities (Guerrero et al., 2008; Etzkowitz et al., 2000; Fayolle & Redford, 2014). Prior research (Kirby et al., 2011; Salamzadeh et al., 2015) suggests that there are several formal and informal institutional factors affecting the transformation of entrepreneurial universities. Formal institutional factors include both government and market-driven factors, as well as university-driven factors such as governmental structures, rules and regulations, the university mission, organisational structure and management, university processes and procedures, technology transfer offices and science parks, university–industry collaboration and networks, entrepreneurship education programmes/courses and entrepreneurial research activities (Kirby et al. 2011; Salamzadeh et al. 2015). Based on the prior research results (Kirby et al., 2011; Salamzadeh et al., 2015), identified missions, a flexible organization structure, links and relationships with industry, entrepreneurship courses for students and support for technology transfer as the most influential formal factors affecting the transformation of entrepreneurial universities. However, informal institutional factors, such as the presence of entrepreneurial role models and favourable staff attitudes towards entrepreneurship seem to be even more crucial in developing entrepreneurial universities (Kirby et al., 2011; Salamzadeh et al., 2015). These aspects are discussed in the next section.

The Role of the Teacher’s Background

According to a study by Kirby et al. (2011), a favourable staff attitude towards entrepreneurship was ranked as the most influential factor that makes the university more entrepreneurial. This finding underlines the essential role of teachers in implementing entrepreneurship education and acting as entrepreneurial role models for students (Gibb, 2011; Ruskovaara & Pihkala, 2013; Peltonen, 2015). Backström-Widjeskog (2008) and Seikkula-Leino et al. (2010), among others, suggest that teachers’ attitudes towards entrepreneurship education are generally quite positive. However, entrepreneurship education can also be a controversial issue for teaching

staff due to the various interpretations and connotations attached to entrepreneurship education (Peltonen, 2015). According to Gibb (2011), a teacher may have a negative attitude towards teaching entrepreneurship (due to concepts related to capitalism and commercialization) but they may consider the development of the learner's entrepreneurial skills to be important. Wraae & Walmsley (2020) found in their study that educators believe they should support students' personal development and not just prepare students for business. On the other hand, teachers often perceive entrepreneurship education in a narrow sense and equate it with new venture creation (Teerijoki & Murdock, 2014). This means that if entrepreneurship is perceived in a narrow sense, teachers may consider the promotion of entrepreneurship to be at odds with the main aims of the courses they taught, if their courses are not business-related. However, entrepreneurship education may have higher legitimacy among teachers if entrepreneurship, and thus entrepreneurship education is perceived in a wider sense as promotion of entrepreneurial mindset and equated with general working life skills that all students should learn (Fejes et al., 2019). Bennett (2006) found that there was a connection between lecturers' definitions of entrepreneurship, their backgrounds and the number of years they had worked in the field of business. Specifically, he stated that a lecturer's perception of entrepreneurship is influenced by their entrepreneurial background. Bennett also argued that a lecturer's background influences how he/she defines entrepreneurship and how entrepreneurship should be taught. Furthermore, according to Weinrauch (1984), a teacher's experience of entrepreneurship influences the methods or means they use to implement entrepreneurship education. San-Martín et al. (2019) researched the perception of the teacher as a role model in entrepreneurship education from both the students' and teachers' perspective. They found differences between these two perspectives. The students thought that a teacher of entrepreneurship should have experience in the field of entrepreneurship in order to be an entrepreneurial role model. Teachers, on the other hand, thought that the entrepreneurial characteristics of a teacher were sufficient. According to Ruskovaara & Pihkala (2014), teachers with entrepreneurial experience participated more actively in professional education related to entrepreneurship education. According to Gibb (2011), entrepreneurial activity is the core competence of a teacher implementing entrepreneurship education, and competence develops in practice as an entrepreneur. Based on previous research, it seems that the teacher's background in entrepreneurship is directly related to the implementation of entrepreneurship education (e.g., Bennett, 2006; Birdthistle, Hynes & Fleming, 2007; Draycott & Rae, 2011). Teachers' participation in entrepreneurship-related training can also have a positive effect on their perceptions of entrepreneurship education (Hämäläinen et al., 2018a). The entrepreneurship education received by teachers can also influence their entrepreneurship education practices (Birdthistle et al., 2007; Blimpo & Pugatch, 2021; Frank, 2007; Ruskovaara & Pihkala, 2014).

Furthermore, increasing the breadth and depth of the professional training of teachers (Huang et al., 2020) as well as putting emphasis on teachers' collaborative team learning (Peltonen, 2015) are essential factors linked to teachers' competencies in entrepreneurship education.

Though prior literature has highlighted the abovementioned factors which has influence on how teachers perceive entrepreneurship education, more empirical research is needed to explore these factors, and the linkage between them, in greater details. Reflecting on our above review of the literature, we propose the following hypotheses:

Hypothesis 1: A teacher's prior experience as an entrepreneur has a positive relationship to the teacher's perceptions of entrepreneurship education.

Hypothesis 2: A teacher's participation in entrepreneurship training has a positive relationship to the teacher's perceptions of entrepreneurship education.

The Role of Managerial Support The aims and goals of entrepreneurship education within university strategies and curricula are not always clear to teachers (Seikkula-Leino et al., 2010). It has been noted that the challenges teachers face primarily concern the content of entrepreneurship education and pedagogical issues (Heinonen & Hytti, 2010). Heinonen and Hytti (2010) note that the role of teaching in creating an entrepreneurial university depends greatly on the strategic objectives set for entrepreneurship education and on the context in which the teaching takes place. Thus, the role of teachers is also dependent on the university's strategies and guidelines in addition to the support provided by university management (Peltonen, 2014). In recent years, there has been increased policy interest in supporting entrepreneurship education in Europe. The European Commission highlights the importance of embedding entrepreneurship education at all school levels, and the crucial role of entrepreneurship education-related policies and curricula are emphasised (European Commission, 2013; Eurydice, 2016). In Finland, guidance documents (Ministry of Education and Culture, 2017) highlight that all teachers at all educational levels are to promote entrepreneurship and entrepreneurial competences in their teaching. This means that entrepreneurship promotion is not limited to those teachers who teach entrepreneurship, rather, it applies to all teachers of all subjects. However, guiding documents only have a supportive role, since HEIs are responsible for embedding entrepreneurship education in their own curricula and strategy. HEI management has a decisive role in ensuring that guiding documents have been accounted for in the organisation's strategy, and that they are supported by management. Previous research in this area is focused on school leaders at basic and secondary education levels, but evidence from HEI's is still missing. Earlier studies from primary and secondary schools have shown that school leaders play an important role in managing

operations, guiding people, building a vision, providing resources and representing an example of expected behaviour (Montecinos et al., 2015; Tuytens & Devos, 2011; Deakins et al., 2005; Birdthistle et al., 2007; Ruskovaara et al., 2016; Leithwood et al., 2008; Hansen and Lárusdóttir, 2015). It has also been argued that school leaders are active operators in developing entrepreneurship education (Eyal and Inbar, 2003; Birdthistle et al., 2007; Ruskovaara et al., 2016; Hämäläinen et al., 2018a; 2018b, O'Connor, 2012).

Through their own actions, school principals can shape the professional position and competencies of their teachers, including their academic and mental expertise, creativity, innovation and motivation (Ememe et al., 2013). Principals have the opportunity to participate in the implementation of entrepreneurship education within their organisation and to become a role model for teachers and students (Deakins et al., 2005). Furthermore, many practical entrepreneurship education activities are largely dependent on the approval, contribution, or encouragement of management. As the implementation of entrepreneurship education is affected by how it is supported through resources, time, expert assistance and connections to the outside world, management's involvement in the implementation of entrepreneurship education is of vital importance. Some studies have emphasised a principal's role as showing leadership and guiding a school's development (Höög et al., 2006; Sugrue, 2009; Hörnqvist & Leffler, 2014). For example, Hörnqvist and Leffler (2014) discussed the challenges which could exist for principals to develop an entrepreneurial attitude to learning and teaching and suggested that the change towards an entrepreneurial school culture needs to be supported by trust and good relationships with teachers to enable them to try new approaches in a safe and supportive environment. Based on prior research on basic and secondary school leaders, we suggest the following hypothesis:

Hypothesis 3: HEI managerial support has a positive relationship to the teachers' perceptions of entrepreneurship education.

Conceptual Model for The Study

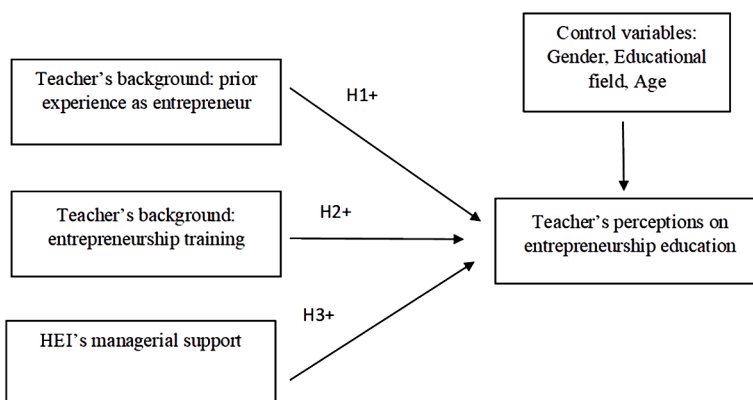
In addition to our three hypotheses based on prior research, we also consider teachers' gender and the educational field's impact on perceptions of entrepreneurship education as control variables. These two perspectives have received little consideration in previous research literatures. While Ruskovaara and Pihkala (2015) found that a teacher's gender did not affect the implementation of entrepreneurship education, Bennett (2006) showed that gender did have an influence on entrepreneurship education at the upper secondary education level. Birdthistle et al. (2007) argued that a secondary education teacher's gender might have an impact on how they teach

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entrepreneurship. Hence, findings related to the impact of gender on entrepreneurship education are mixed. To explore possible gender effects, we added gender as a control variable in our study.

We also included educational field (business) as a control variable, because we recognise that business teachers may have more positive perceptions towards entrepreneurship education than teachers in other fields. Several studies have found that business schools traditionally provide teaching that supports the development of students' entrepreneurial competence (e.g., Collins et al. 2004; Gibb 2002; Hannon 2007; Matlay & Carey, 2007; McKeown et al., 2006). As a third control variable, we included age because older individuals may have more work experience which may also have an effect (see Bennet, 2006). Figure 1 presents the hypothesized model for our study.

Figure 1. Conceptual model for the study and hypothesized relationships.



METHODOLOGY AND DATA

Data Collection

The data were gathered from Finnish teachers working in universities of applied sciences. Teachers answered an Internet survey using a web-based tool developed to measure teachers' perceptions and activities in relation to entrepreneurship education. In this study we use responses gathered between 2014 and 2020. The survey tool comprised 72 questions relating to different aspects of entrepreneurship education, but with a focus on items that measure teachers' perceptions of entrepreneurship education (4 items), and items that measure HEI managerial support for entrepreneurship education (5 items). In addition, we used variables measuring teachers' prior

experience as an entrepreneur, their participation in entrepreneurship education courses, and their educational fields.

A total of 1,119 responses were gathered. Sixty one percent of respondents were women and 39% were men. The respondents represent different fields of education (humanities and education 6.5%; the cultural sector 5.2%; natural sciences 2.1%; natural resources and the environment 6.7%, tourism and catering 4.5%; social and health care 20.6%; technology and transport 22.4%; business and administration 31.8%; other 0.2%). Thirty seven percent of respondents had prior experience as an entrepreneur, and 58% had participated in some entrepreneurship-related course in the past three years. The mean age of respondents in 2020 was 54 years (minimum 18 years, maximum 77 years). Table 1 presents background variables of the respondents.

Table 1. Data description

Respondents (n = 1119)	n	%
Gender		
Female	687	61.4
Male	432	38.6
Fields of study		
Social sciences, business, and administration	356	31.8
Civil engineering and transportation	251	22.4
Social sciences, health, and sports	231	20.6
Natural resources and environmental sciences	75	6.7
Humanities and education	73	6.5
Arts and culture	58	5.2
Tourism, nutrition, and economics	50	4.5
Natural sciences	23	2.1
Military sciences and defence	2	0.2
Was the respondent an entrepreneur before his or her educational career?		
No	710	63.4
Yes	409	36.5
Has the respondent participated in training related to entrepreneurship education?		
No	473	42.2
Yes	646	57.7

Variables and Initial Analysis

The teachers' perceptions of entrepreneurship education (TP) were measured with four items employing a five-point Likert scale (from 1: "I totally disagree", to 5: "I totally agree"). The items measuring teachers' perceptions related to opinions as to how important and interesting entrepreneurship education was, and whether it was integrated as part of teachers' own subject area. The items were as follows:

TP1: I think entrepreneurship should be integrated in the teaching of my subject

TP2: I find entrepreneurial issues interesting to teach

TP3: I think entrepreneurship related matters are hard to integrate in the teaching of my subject (reversed)

TP4: I do not consider teaching entrepreneurship as being important in my subject (reversed).

To measure the HEI's managerial support (HM) we used five items with a five-point Likert scale (from 1: "I totally disagree", to 5: "I totally agree"). The items included different statements related to how HEIs could support entrepreneurship education from a management perspective. The following items were used:

HM1: Our HEI's strategy supports promoting entrepreneurship in my work

HM2: Our HEI's curriculum supports promoting entrepreneurship in my work

HM3: Our HEI's quality management system supports me to promote activities related to entrepreneurship

HM4: Our top management offers tangible support for the promotion of entrepreneurship

HM5: My superiors support me in promoting entrepreneurship in my work.

Other variables were measured with a nominal scale. Gender had options for male and female. For entrepreneurship education training we asked whether teachers had participated in entrepreneurship education-related training in the past three years (yes/no). For prior experience in entrepreneurship teachers were asked whether they had worked as an entrepreneur prior their teaching career (yes/no). For the educational field there were nine options (see Table 1).

The internal consistency of the scales were evaluated using Cronbach's alpha. Our sample size (1,119) was large enough to use the Cronbach's alpha based on Kline's (1986) suggestions. Nunnally (1978) recommends that reliabilities of .70 or better can be considered acceptable. The scales in this study had high reliability ratios. The Cronbach's alpha for the teachers' perceptions of entrepreneurship education was .87, and for HEI managerial support it was .85.

For evaluating content validity, we used an expert panel with a participatory development approach and compared the items with the literature (Bannigan & Watson, 2009; Cohen, Manion & Morrison 2007). Approximately 15 experts participated in the development process. In addition, construct validity was assessed through factorial validity (Bannigan & Watson, 2009) by using an explorative factor analysis (EFA) with principal axis factoring and varimax rotation. All communalities were above .30. EFA produced two factors with eigenvalues higher than 1. The first factor explained 44% of the variance, and the second factor 23% of the variance. Table 2 presents the factor loadings of the items. The results indicate good factorial validity for the scales.

Table 2. Factor loadings of the scale items (values below .30 suppressed)

	Factor	
	1	2
TP1		.81
TP2		.80
TP3		-.72
TP4		-.77
HM1	.76	
HM2	.74	
HM3	.76	
HM4	.71	
HM5	.60	

We used an ANOVA and linear regression analysis in the next phase. We followed recommendations by Hilbe (2009) and Menard (2010) for checking the suitability of a regression analysis (normal distribution of response and error terms, no autocorrelation, no homoscedasticity and no multicollinearity).

FINDINGS

The three hypotheses were tested using linear regression analysis. We used teacher’s perceptions of entrepreneurship education as a dependent variable, and tested its relationship with teacher’s prior experience as an entrepreneur, teacher’s participation in entrepreneurship training, and HEI managerial support. In addition, we used

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gender, age, and business as educational field as control variables. Before testing the hypotheses with linear regression analysis, we examined the level of teacher's perceptions of entrepreneurship education in different study fields in order to see if business teachers have more positive perceptions towards entrepreneurship education than teachers in other fields as expected.

We tested the differences in teachers' perceptions of entrepreneurship education between different educational fields with ANOVA and Bonferroni tests. The results of the ANOVA are presented in Table 3. According to the ANOVA test results, the groups differed significantly in terms of teachers' perceptions depending on the type of entrepreneurship education ($F=8.683, p<.000$).

Table 3. Results for ANOVA and educational fields

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	50.108	8	6.264	8.683	.000
Within Groups	704.726	977	.721		
Total	754.834	985			

The results of the Bonferroni tests in Table 4 show that teachers in the field of business and administration differed significantly from teachers in the field of technology and transport ($p<.001$), and teachers in the field of social and health care ($p<.001$). Additionally, teachers in the field of humanities and education differed from teachers operating in the field of social and health care ($p<.05$). Teachers in the field of natural resources and environment differed significantly from teachers in the field of social and health care ($p<.01$) and from teachers in the field of technology and transport ($p<.05$).

Table 5 presents the mean values for teachers in different educational fields. Teachers in the field of business and administration had the highest mean value (*mean 4.1*) followed by teachers in the field of natural resources and environment (*mean 4.0*). The lowest mean values were found for teachers in the field of social and health care (*mean 3.5*) and teachers in the field of technology and transport (*mean 3.6*).

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Table 4. Results for Bonferroni tests and educational fields

		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Humanities and education	Cultural sector	.15292	.15303	1.000	-.3377	.6436
	Natural sciences	.12110	.20759	1.000	-.5444	.7867
	Natural resources and environment	-.06429	.14356	1.000	-.5246	.3960
	Tourism and catering	.07301	.16456	1.000	-.4546	.6006
	Social and health care	.40068*	.11765	.025	.0235	.7779
	Technology and transport	.35082	.11661	.097	-.0231	.7247
	Business and administration	-.13090	.11270	1.000	-.4922	.2304
Cultural sector	Humanities and education	-.15292	.15303	1.000	-.6436	.3377
	Natural sciences	-.03182	.21425	1.000	-.7187	.6551
	Natural resources and environment	-.21721	.15303	1.000	-.7079	.2734
	Tourism and catering	-.07992	.17289	1.000	-.6342	.4744
	Social and health care	.24776	.12904	1.000	-.1660	.6615
	Technology and transport	.19789	.12810	1.000	-.2128	.6086
	Business and administration	-.28382	.12454	.824	-.6831	.1155
Natural sciences	Humanities and education	-.12110	.20759	1.000	-.7867	.5444
	Cultural sector	.03182	.21425	1.000	-.6551	.7187
	Natural resources and environment	-.18539	.20759	1.000	-.8509	.4802
	Tourism and catering	-.04810	.22263	1.000	-.7619	.6657
	Social and health care	.27958	.19059	1.000	-.3315	.8906
	Technology and transport	.22971	.18995	1.000	-.3793	.8387
	Business and administration	-.25200	.18757	1.000	-.8534	.3494
Natural resources and environment	Humanities and education	.06429	.14356	1.000	-.3960	.5246
	Cultural sector	.21721	.15303	1.000	-.2734	.7079
	Natural sciences	.18539	.20759	1.000	-.4802	.8509
	Tourism and catering	.13729	.16456	1.000	-.3903	.6649
	Social and health care	.46497**	.11765	.003	.0878	.8422
	Technology and transport	.41510*	.11661	.014	.0412	.7890
	Business and administration	-.06661	.11270	1.000	-.4279	.2947

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Table 4. Continued

		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Tourism and catering	Humanities and education	-.07301	.16456	1.000	-.6006	.4546
	Cultural sector	.07992	.17289	1.000	-.4744	.6342
	Natural sciences	.04810	.22263	1.000	-.6657	.7619
	Natural resources and environment	-.13729	.16456	1.000	-.6649	.3903
	Social and health care	.32768	.14252	.781	-.1293	.7846
	Technology and transport	.27781	.14166	1.000	-.1764	.7320
	Business and administration	-.20390	.13846	1.000	-.6478	.2400
Social and health care	Humanities and education	-.40068*	.11765	.025	-.7779	-.0235
	Cultural sector	-.24776	.12904	1.000	-.6615	.1660
	Natural sciences	-.27958	.19059	1.000	-.8906	.3315
	Natural resources and environment	-.46497**	.11765	.003	-.8422	-.0878
	Tourism and catering	-.32768	.14252	.781	-.7846	.1293
	Technology and transport	-.04987	.08264	1.000	-.3148	.2151
	Business and administration	-.53158***	.07702	.000	-.7785	-.2846
Technology and transport	Humanities and education	-.35082	.11661	.097	-.7247	.0231
	Cultural sector	-.19789	.12810	1.000	-.6086	.2128
	Natural sciences	-.22971	.18995	1.000	-.8387	.3793
	Natural resources and environment	-.41510*	.11661	.014	-.7890	-.0412
	Tourism and catering	-.27781	.14166	1.000	-.7320	.1764
	Social and health care	.04987	.08264	1.000	-.2151	.3148
	Business and administration	-.48171***	.07543	.000	-.7236	-.2399

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Table 4. Continued

		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Business and administration	Humanities and education	.13090	.11270	1.000	-.2304	.4922
	Cultural sector	.28382	.12454	.824	-.1155	.6831
	Natural sciences	.25200	.18757	1.000	-.3494	.8534
	Natural resources and environment	.06661	.11270	1.000	-.2947	.4279
	Tourism and catering	.20390	.13846	1.000	-.2400	.6478
	Social and health care	.53158***	.07702	.000	.2846	.7785
	Technology and transport	.48171***	.07543	.000	.2399	.7236

* The mean difference is significant at the 0.05 level.
 **. The mean difference is significant at the 0.01 level.
 *** The mean difference is significant at the 0.001 level.

Table 5. Mean values and standard deviations of teacher’s perception of entrepreneurship education in different educational fields

	Mean (sd)	N
Business and administration	4.1 (0.8)	301
Natural resources and environment	4.0 (0.8)	70
Tourism and catering	3.9 (0.9)	43
Humanities and education	3.9 (0.8)	70
Cultural sector	3.8 (1.0)	55
Natural sciences	3.8 (1.0)	22
Technology and transport	3.6 (0.8)	219
Social and health care	3.5 (0.9)	204

The results indicate that field of education has some effect on teachers’ perceptions of entrepreneurship education. The most positive responses come from teachers working in the field of business and administration. Thus, the effect of teacher’s educational field (field of business and administration) was controlled in the linear regression analysis, which was used to test the hypotheses in the next phase.

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First, we created dummy scales for gender (one for females, zero for males), entrepreneurship experience (one for yes, zero for no), and entrepreneurship education training (one for yes, zero for no). In addition, we created a dummy variable for the educational field to control for the effect of business and administration as an educational field (one for teachers in the field of business and administration, others zero). Age and gender were also used as control variables.

Table 6. Regression results (standard deviations from the mean and β)

	Model 1	Model 2
Constant	3.387 (.178)	2.332 (.194)
Gender (female)	-.065 (.056) β -.037	-.009 (.051) β -.005
Age	.006* (.003) β .064	.003 (.003) β .030
Business as educational field	.389*** (.059) β .205	.237 (.055) β .125***
Entrepreneurship experience		.383 (.052) β .211***
Entrepreneurship education training		.395 (.052) β .223***
HEI managerial support		.268 (.035) β .225***
R-squared	.045	.217
Adjusted R-squared	.042	.213
R-squared change		.172***
F statistics	15.433***	45.300***

Standard errors are reported in parentheses.

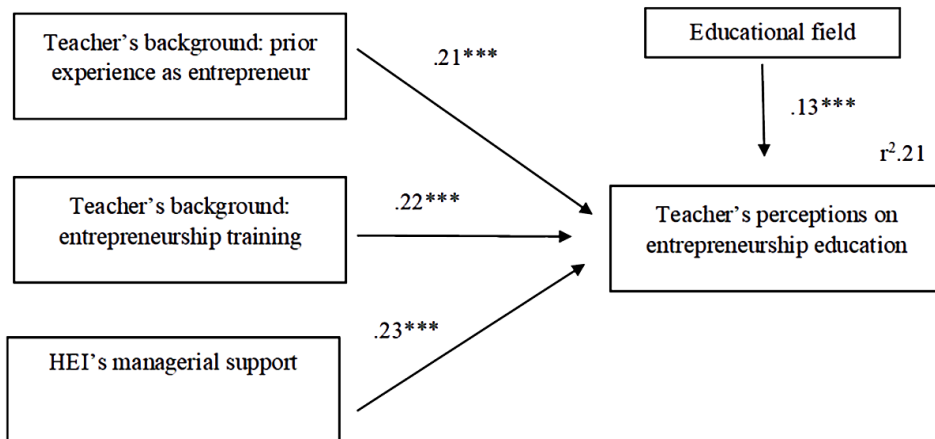
*, **, *** indicate significance at the 90%, 95%, and 99% levels, respectively.

Table 6 presents the results from the regression analysis. The first model includes only the control variables (gender, age, business as educational field). The model explains only five percent of the variance in the teachers' perceptions of entrepreneurship education. Age ($\beta=.064$, $p<.05$) and business as educational field ($\beta=.205$, $p<.001$) have explanation value in the model. Older teachers had

more positive perceptions of entrepreneurship education than younger teachers. The second model also includes independent variables (prior entrepreneurship experience, participation in entrepreneurship education related training, and HEI managerial support for entrepreneurship education). The model explains 21% of the variance in teachers’ perceptions of entrepreneurship education ($F=45.300$, $p<.001$). The F change is significant compared to the model with only control variables ($F\ change=.172$, $p<.001$). The most important variable in the model is HEI managerial support ($\beta=.225$, $p<.001$), followed by participation in entrepreneurship education-related training ($\beta=.223$, $p<.001$), and prior experience in entrepreneurship ($\beta=.211$, $p<.001$). Business as an educational field was the only significant control variable in the model ($\beta=.125$, $p<.001$) but the effect was much smaller than in the first model. It should be noted that the educational field is a control variable. The positive relationships between independent and dependent variables remain when the control variable is in the model.

Hence, our results verify all of our suggested hypotheses. Teachers’ own entrepreneurial background has a positive relationship on teacher’s perceptions of entrepreneurship education. Teachers with entrepreneurship training in the past three years have more positive perceptions of entrepreneurship education than teachers with no training. HEI managerial support has a positive relationship with teachers’ perceptions of entrepreneurship education. The higher the experienced support, the more positive the teacher’s own perceptions of entrepreneurship education. Figure 2 presents our final model with standardized regression weights.

Figure 2. Final model with standardized regression weights.



DISCUSSION

The objective of this study was to examine the external factors (managerial practices) and internal factors (the teacher's background) affecting teachers' perceptions of the importance of entrepreneurship education and their interest in it. Findings verify that both factors have a significant effect on shaping the mindset of teachers. We argue that a favourable staff attitude towards entrepreneurship education is crucial in developing an entrepreneurial university. The importance of informal institutional factors such as attitudes has also been raised by other scholars (Kirby et al., 2011; Salamzadeh et al., 2015).

Our study shows that teachers' perceptions of entrepreneurship education were most positive in the field of business and administration. This partly supports previous findings by Bennet (2006) who found that working years in the field of business had a connection with a teacher's definition of entrepreneurship. Overall, perceptions of entrepreneurship education were quite positive in all educational fields (mean values ranging from 3.5 to 4.1 on a five-point Likert scale) supporting findings by Seikkula-Leino et al. (2010). However, there was a significant difference between teachers working in the field of business and administration and those working in the field of social and health care, or in the field of technology. This may be due to the different interpretations and connotations of entrepreneurship education (see Peltonen, 2015). Teachers working in the field of business and administration may have a wider perspective on entrepreneurship education understanding the importance of developing students' entrepreneurial mindset rather than merely boosting start-up activity.

Our findings verify the impact of teachers' own entrepreneurial backgrounds on shaping their perceptions of entrepreneurship education. Teachers who had worked as an entrepreneur prior to their educational careers had more positive views of entrepreneurship education than other teachers. This supports findings by Weinrauch (1984), who showed that a teacher's own entrepreneurial experience had an impact on the implementation of entrepreneurship education. This is interesting, as teachers themselves do not think that teaching entrepreneurship requires them to have their own entrepreneurial experience (San-Martín et al., 2019). However, our study shows that entrepreneurial experience does have a significant impact on teachers' perceptions of entrepreneurship education, supporting arguments by Gibb (2011) who highlights entrepreneurial activity as a core competence of entrepreneurship teachers. However, it may be that some personal characteristics are even more important than mere entrepreneurial experience. For example, Joensuu-Salo et al. (2020) showed that teachers' innovativeness and risk-taking ability are important when fostering an entrepreneurial mindset in their students.

In addition, we found that participation in entrepreneurship training had a positive impact on teachers' perceptions of entrepreneurship education. Hence, teaching entrepreneurship to teachers is an important element in developing an entrepreneurial university. This supports findings by Hämäläinen et al. (2018a), who demonstrated that enterprise-related training afforded to teachers and principals had a positive effect on entrepreneurship education development in schools. In addition, Ruskovaara and Pihkala (2014) showed that teachers' entrepreneurship education practices were highly affected by their received enterprise-related training. Hence, teacher training does matter and should be incorporated into HEI practices.

Our study also highlights the importance of HEIs' managerial practices in support of entrepreneurship education. If a teacher feels that the HEI's strategy, curricula, quality management system, top management and supervisor support the promotion of entrepreneurship, then the teacher's own perceptions of the importance of entrepreneurship education and their interest in it are more positive. This finding is in line with prior research on the important role of school leaders in managing operations and developing guidelines for entrepreneurship education (Deakins et al., 2005; O'Connor 2012; Montecinos et al., 2015; Hämäläinen, Ruskovaara & Pihkala, 2018b). Therefore, to develop an entrepreneurial university, entrepreneurship needs to be incorporated into a HEI's strategy and managerial practices to support favourable staff attitudes towards the implementation of entrepreneurship education. Hence, both internal and external factors are important.

Finally, this chapter controlled for the effects of gender, educational field and age of teachers in examining the perceptions of entrepreneurship education. Prior research findings on the effect of gender have been mixed (Ruskovaara & Pihkala, 2015; Birdthistle et al., 2007). Our study shows that gender does not explain the formation of teachers' perceptions of entrepreneurship education. Age had an effect in the model with only control variables, but not in the model with independent variables. This may suggest that the effect of age may be mediated by some independent variable in our study. This requires more research. Business as an educational field in turn had an effect, as prior research suggests (Collins et al., 2004; Hannon, 2007; McKeown et al., 2006). However, adding the educational field of business and administration as a control variable did not impact the hypothesized relationships in the final model.

In summary, the findings of our study show that teachers' perceptions of entrepreneurship education, as well as their attitudes towards its implementation, are shaped by various factors. Teachers' own entrepreneurial backgrounds, participation in entrepreneurship training and HEI managerial support all have significant effects on teachers' perceptions of entrepreneurship education. Table 7 summarizes our hypotheses and results. It is crucial to identify differences in perceptions and increase dialogue within and between teacher teams in order to build a shared understanding of the vision, goals and good practices of entrepreneurship education. Hence, developing

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an entrepreneurial university can only be achieved through active engagement of teaching staff and a supportive management team.

Table 7. Summary of the results

Hypothesis	Result
Hypothesis One: A teacher's prior experience as an entrepreneur has a positive relationship to the teacher's perception of entrepreneurship education.	Supported.
Hypothesis Two: A teacher's participation in entrepreneurship training has a positive relationship to the teacher's perceptions of entrepreneurship education.	Supported.
Hypothesis Three: HEI managerial support has a positive relationship to the teachers' perceptions of entrepreneurship education	Supported.
Control variable: gender	No effect.
Control variable: age	Effect in the model with only control variables, no effect in the final model with independent variables.
Control variable: business and administration as an educational field	Positive effect.

RECOMMENDATIONS

This chapter offers several recommendations for the development of an entrepreneurial university. As discussed above, the role of the teacher in the realization of the entrepreneurial university is central. Teachers' competence, attitudes to entrepreneurship education and the support they receive from management are all relevant.

At a practical level, this implies the need for a systematic management approach to entrepreneurship education. For example, the ability of a teacher to use their work time for entrepreneurship activities or for their own professional development affects how the HEI's/university's entrepreneurial spirit develops and materializes. The role of management is relevant on several levels: quality management; strategy; the culture of the workplace community. The support teachers receive from their workplace community and management affects whether the HEI/university operates entrepreneurially. Providing entrepreneurship education training for teachers is one of vital actions supporting the positive perceptions on entrepreneurship.

Systematic monitoring of entrepreneurship activities as part of an institution's quality management process could also ensure that students receive a uniform entrepreneurship education; entrepreneurship education should not vary according to

teachers' perceptions. An entrepreneurship education strategy should be unambiguous and consistent so that teachers understand what is expected of them. Furthermore, strategy and pedagogy should go hand in hand. As stated earlier in this chapter, teachers' backgrounds are directly relevant in implementing entrepreneurship education. However, the way the university/HEI operates and is managed is more important than the background of its teachers. Finally, management's activities also influence the implementation of entrepreneurship education, however, once managers understand how entrepreneurship teachers operate, they can use that knowledge to enhance their entrepreneurship education programmes.

FUTURE RESEARCH DIRECTIONS

Further studies are needed to explore differences between teachers in different fields of education in the implementation of entrepreneurship education. According to our study, there were significant differences in teachers' perceptions of entrepreneurship education within different fields. That said, we did not focus on examining an explanation of these differences, but it is possible that they are due to the different interpretations and connotations of entrepreneurship education. For example, whether entrepreneurship education is understood as the teaching of information related to starting a business or to the development of an entrepreneurial mindset. A topic of further research could be whether teachers have a clear picture of what to teach when teaching entrepreneurship. A central question could be "what does the teacher want the students to learn when they study entrepreneurship?" In addition, future research could address teachers' understanding of the concept of an "entrepreneurial university" and the extent to which the concept is clearly understood by teachers. Our study does not look at the importance of multi-disciplinarity in the implementation of entrepreneurship programmes. However, this aspect could be examined from various perspectives: teachers' professional development; management's standpoint; the benefits perceived by students. According to Lourenço, Taylor & Taylor (2013), multi-disciplinarity in entrepreneurship programmes should be part of entrepreneurship programme design.

This study has some limitations. The data were gathered only from one country, thus, findings require international comparisons in order to generalize. However, the study could be replicated quite easily in other countries to gain comparative findings. A further limitation was that answering the questionnaire was not mandatory for the teachers in the sample. This may have created some bias, as it is possible that those teachers with a greater interest in entrepreneurship were more likely to answer the questionnaire. It is also possible that teachers representing different fields of education may interpret the concept of entrepreneurship in diverse ways or have

diverse roles in the teaching of entrepreneurship. This may have had an impact on how they see their own role in the development of an entrepreneurial university.

CONCLUSION

The aim of this chapter was to explore the linkage between HEI managerial practices and teachers' backgrounds and teachers' perceptions of entrepreneurship education. This chapter contributes to the existing body of research in two main ways. First, it extends the theoretical understanding of the diverse ways in which HEI management is involved in building an entrepreneurial university. It is widely acknowledged that management (understandably) has a direct influence on the creation of an entrepreneurial university through its vision and strategy, but as the results of this study show, teachers' experiences of managerial support for entrepreneurship education also influence their perceptions. Second, the study also deepens understanding of the elements affecting teachers' readiness to promote entrepreneurship through pedagogical practices. Furthermore, as the findings indicate, the field of education itself also shapes teachers' perceptions of entrepreneurship.

These findings have practical implications that readers can consider in order to make their HEI/university more entrepreneurial. First, increasing managerial support and dialogue with teaching staff on their perceptions of entrepreneurship, as well as advocating the sharing of ideas and experience between teacher teams, may be effective strategies that HEI managers can employ to make their institution more entrepreneurial. Second, because participation in entrepreneurship training seems to have a positive effect on teachers' perceptions of entrepreneurship, managers should encourage teachers to seek further training opportunities.

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