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The Impact of Education on Entrepreneurial Intention and Action

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Abstract: This paper examines the relationship between entrepreneurial education and action, emphasizing the complexity of transitioning from education to entrepreneurial journey. Highlighting the significance of universities in fostering entrepreneurship, it underscores the necessity of educational programs extending beyond traditional business education. Drawing from various theoretical frameworks, including Shapero and Sokol's Entrepreneurial Event Model and Ajzen's Theory of Planned Behaviour, the paper proposes an Intention Model to elucidate the transition from opportunity identification to intention formation and subsequent entrepreneurial action. Through a combination of literature review and empirical research, the study explores the impact of entrepreneurship education on graduates' entrepreneurial actions, shedding light on factors such as personal desirability, social norms, and perceived efficacy. Findings suggest that entrepreneurship education significantly influences students' social norms and behavioural tendencies, thus affecting their entrepreneurial actions.

Keywords: Entrepreneurship education, Entrepreneurial intention and action, Competency

1 Introduction

In recent years, the role of start-ups in fostering innovation at the national and regional levels has become increasingly important. Universities play an active role in nurturing individuals for this purpose through entrepreneurship education. However, the process from education to entrepreneurial action is complex. Particularly in the transition from novice to expert entrepreneurs, it is essential to have educational programs that go beyond business education. Understanding one's own values and motivations are essential for opportunity discovery, as well as attitudes towards uncertainty and risk, and understanding the entrepreneurial environment and social norms are crucial for identifying opportunities, forming intentions, and taking concrete entrepreneurial actions.

At this juncture, the relationship between the input of education, such as skills and competencies, and the output, including actual entrepreneurial actions and societal impact, is complex. Particularly, what is crucial in transitioning from identifying opportunities to forming intentions and eventually taking entrepreneurial actions is not sufficiently clear. Conversely, what is lacking to hinder the transition to entrepreneurial actions is also not fully elucidated. Furthermore, the effectiveness of education required to transition towards entrepreneurial actions remains insufficiently understood.

2 Literature Review

Among the significant studies on entrepreneurial intention and action, Shapero and Sokol's (1982) Entrepreneurial Event Model (EEM) is noteworthy. This model highlights the importance of triggering events in the process of intention formation preceding venture creation. Additionally, Ajzen's (1991) Theory of Planned behaviour (TPB) suggests that intention formation relies on past experiences, attitudes cultivated, social norms surrounding entrepreneurs, and self-efficacy, influencing behaviour.

Integrating the above theories, an Intention Model (Krueger 2017, adapted from Shapero 1982; Krueger and Brazeal 1994; Krueger et al., 2000) has been proposed (Fig.1). This intention model indicates that an individual's awareness of desirability influenced by the social norms and the recognition of feasibility based on self-efficacy significantly influence the transition from opportunity discovery to intention formation and further to entrepreneurial action. Based on this model, for example, Kuehn (2008) illustrates learning activities influencing the formation of students' entrepreneurial intentions. However, there is no mention of the relationship with entrepreneurial action. Regarding the impact of university entrepreneurship education and its outcomes, Nabi et al. (2017) conducted a systematic review of 159 papers over 12 years. While many studies show a positive impact of education, they often focus on short-term and subjective effects (e.g., personal change) limited to intention formation, and few cover medium to long-term outcomes, such as actual entrepreneurial actions or socio-economic impacts.

Furthermore, as a common framework for measuring the effectiveness of entrepreneurship education, EntreComp has been developed (Bacigalupo et al., 2016). This framework presents 15 competencies in three areas of abilities ("Idea and Opportunity," "Resources," and "Action"), categorizing their levels of maturity into three stages. It is expected that efforts to measure the effectiveness of education using EntreComp will be linked with educational initiatives in various institutions, leading to the development of more effective educational methods.

As indicated by the intention model (Krueger 2017), the acquisition of entrepreneurship and actual entrepreneurial actions vary depending on students' environments such as social norms and cultural context, perceived desirability formed within themselves, and behavioural tendencies. As a result of the mutual influence of these various factors and educational content, students capable of identifying unique entrepreneurial opportunities, forming intentions, and transitioning to entrepreneurial actions emerge. However, the mechanism between entrepreneurship education at universities and subsequent entrepreneurial actions is

not adequately clarified, posing challenges in designing effective entrepreneurship education programs.

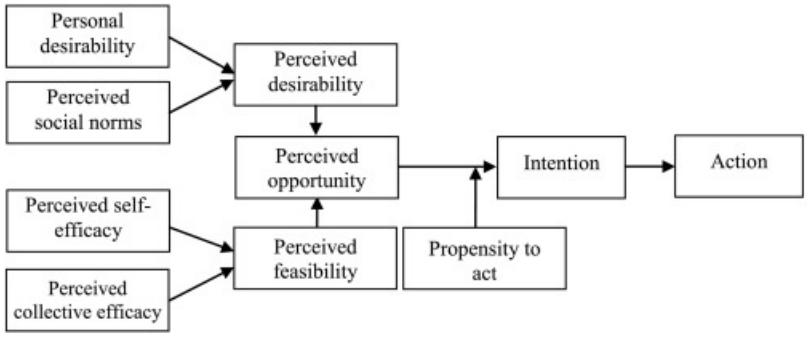

Figure 1 Intention Model (Krueger 2017)

3 Research Design & Methodology

Research Design

Based on the literature review above, this study aims to elucidate the impact of university entrepreneurship education on transitioning from entrepreneurial intention to actual actions and gain insights to design more effective educational programs. In the initial stage, utilizing the framework of the intention model (Krueger 2017), preliminary surveys were conducted on graduates who participated in the entrepreneurship education at the authors' university to exploratively clarify the relationship between education and entrepreneurial actions. While the survey primarily targeted graduates who actually started businesses, cases that students had highly evaluated projects during their studies but did not proceed to actual business were also included for comparison.

Methodology

Interview surveys were conducted with ten graduates who participated in the entrepreneurship education program at the authors' university and subsequently started businesses, as well as four graduates who did not start businesses (Table 1). The surveys were conducted from June 2023 to April 2024, either face-to-face or online, with each interview lasting 1 to 1.5 hours. The interview items were set based on the intention model (Krueger 2017) and comprised categories including Exogenous Factors (personal situation), Personal Desirability, Social Norms, Self-Efficacy, Collective Efficacy, Perceived Desirability, Perceived Feasibility, Perception of Opportunity, Propensity to Act, Intention, and Entrepreneurial Action.

Table 1 Case Outline

Case	*Major (year) B=Bachler, M=Master*	*Course/ Program*	*Co. started*	*Area of project*	*Work exp.*
A	B in Physics (2016)	P(SVEP)	2020	AI	Y
B	M in Math (doctoral, 2023)	P(Club)	2023	AI, Quantum computing	N
C	M in Chemistry, (2023)	P(Club)	2023	AI	N
D	M in Design (2018)	C(2)	2023	Design	Y
E	B in 21st Century (2017)	P(C&C)	2016	Engineering	N
F	B in Earth Science (2009)	P(QREP)	2017	Production engineering	Y
G	M in System Life Science (2013)	C(1) P(Club)	2019	Maritime	Y
H	M in Chemistry (2021)	P(IB, C&C)	2019	Fishery	N
Q	M in System Life Science (doctoral, 2020)	C(6) P(IB, C&C)	2020	Neuro marketing	N
J	M in Medical School (on leave from 2018)	P(C&C)	2018	AI in diagnosis	N
K	M in Architecture (2023)	P(IB, C&C)	-	Animal welfare	-
L	M in Architecture (2024)	P(C&C)	-	Animal welfare	-
M	M in Design (2024)	C(13)	-	Art	-
N	M in Engineering (2022)	C(6) P(Club)	-	Plant engineering	-

C(#)=total number of courses student took, SVEP=Silicon Valley English Study Program, QREP=QREC's Silicon Valley Entrepreneurship Program, Club=Students' Club Activities for Entrepreneurship, IB=Idea Battle(4 months), C&C=Challenge & Creation(1 year)

4 Findings

(1) In 10 out of 10 entrepreneurial cases which business started, the individuals had a subjective Personal Desirability for taking ownership of their lives, acting as a starting point for entrepreneurial actions. Specifically, they showed strong interest in jobs with societal impact, expressed a preference for their own business over working for existing companies to fulfil their curiosity, expressed a desire to start businesses while conducting research at university, or wanted to leverage their strengths to create maximum value. Hence, for students who already possess some form of Personal Desirability, educational programs aimed at enhancing competencies related to entrepreneurial actions may be effective.

(2) In 9 out of 10 entrepreneurial cases, the participants' social norms were significantly shifted from a career path of "joining large companies" to "starting own business" through entrepreneurship education. During programs such as training in Silicon Valley, they recognized non-conventional career choices, acquired values that it's okay to fail, and learned about variety ways of life through lectures from entrepreneurs. Entrepreneurship education significantly influenced the rewriting of students' social norms, potentially affecting their subsequent entrepreneurial actions.

(3) In all 10 entrepreneurial cases, the acquisition of four elements - Personal Desirability, Social Norm, Perceived Self-Efficacy, and Perceived Collective

Efficacy - led to the subsequent acquisition of Perceived Opportunity and Perceived Feasibility. For example, participating in programs to validate initial business hypothesis led to the acquisition of Self-Efficacy, and obtaining knowledge and advice from other participants in the program contributed to the formation of Collective Efficacy. Thus, entrepreneurship education designs that enable students to acquire the elements that they have not yet acquired among the four factors mentioned above may be effective.

(4) In all 10 entrepreneurial cases, Propensity to Act played a significant role. Commonalities among cases included recognizing affordable loss, a high level of action-taking, a preference for different paths from others, etc. These tendencies were formed independently before taking entrepreneurship education. This suggests that possessing "entrepreneur-specific" behavioural tendencies may be essential for advancing from opportunity recognition to intention formation and entrepreneurial actions. However, this is formed throughout one's growth process, and achieving effectiveness through temporary education may be challenging.

(5) Among the 4 cases that did not start businesses, 2 cases had clearly identified entrepreneurial opportunities but lacked the mindset, knowledge, and skills necessary for starting business, and simultaneously did not encounter entrepreneurship role models in their surroundings. As a result, desirability and feasibility for entrepreneurship did not increase. Through education that provides knowledge and skills for entrepreneurship and exposes students to entrepreneurial lives, there may have been a possibility for them to proceed from intention formation to entrepreneurial actions. The remaining 2 cases that did not start businesses, students understood through entrepreneurship courses and projects that starting own business was just a means and positively chose to work for existing companies for self-realization.

5 Discussion

In many cases leading to the starting own business, it is noteworthy that through entrepreneurship education, rewriting of social norms to not be bound by existing values occurred. Particularly in Japanese society, which is relatively conservative and strongly oriented towards large companies, it seems that effective education is one that makes students understand the existence of a career path as entrepreneurs rather than employees and provides education to enhance the mindset, knowledge, and skills necessary for becoming entrepreneur, leading to increased self-efficacy and feasibility. This was observed more clearly by comparing cases that did not lead to the starting new business.

On the other hand, why did cases arise where students did not proceed to entrepreneurial journey despite receiving similar project support such as C&C and IB? This raises the possibility of educational improvements during students' project support. Specifically, in cases where entrepreneurship did not occur, although prototyping and improvement of usability were conducted through projects, there may have been insufficient acquisition of knowledge, skills, and competencies needed to disseminate their product vision through business mechanisms. Furthermore, in half of the cases where the new business did not occur, it was appropriately understood that "starting own business is just a means" through education, and students actively choose to be employees in existing companies for

self-realization. Educators need to recognize that such cases may occur at a certain rate.

6 Contribution & Limitation

There is a possibility to modify/expand intention models based on TPB, already known as a theoretical framework for empirical research, from the perspective of the impact and effectiveness of education on students' entrepreneurial actions. Additionally, by elucidating the mechanisms surrounding university entrepreneurship education and subsequent entrepreneurial actions, it becomes possible to design more appropriate educational programs according to the purposes and the targeted students.

This study only targeted students at the authors' university, resulting in sample bias and an insufficient sample size. Future research is needed to clarify the influence of social norms and cultural contexts in different environments, such as through comparative studies with other universities domestically and internationally.

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Areas for feedback & development

Area:

Entrepreneurial Intention, Entrepreneurship Education & Pedagogy, Educational Psychology

Specific points for feedback:

Regarding future research design, advice is sought on comparative studies between students who have undergone entrepreneurship education and those who have not, particularly in relation to entrepreneurial behaviour. Additionally, guidance is desired on comparative research between domestic and international contexts.

Feedback is also sought on the design of quantitative studies to obtain stronger evidence.