

Encouraging or Discouraging? Exploring the Balance between Intrinsic and Extrinsic Motivation in Entrepreneurial Education

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Abstract

While previous research has extensively explored quantitative aspects of entrepreneurship education, there is a notable gap in empirical support for the notion that entrepreneurial education significantly increases students' entrepreneurial motivation. In response to this gap, this study employs a grounded theory approach to comprehensively investigate the factors influencing students' entrepreneurial motivation both before and during entrepreneurship education programs. The research specifically addresses the nuanced balance between intrinsic and extrinsic motivation, an aspect that has been insufficiently examined in previous studies. This comprehensive exploration aims to contribute to the ongoing discourse on entrepreneurship education by offering a nuanced understanding of the factors shaping students' entrepreneurial motivation, ultimately guiding educational institutions in optimizing their programs to foster a culture of innovation and entrepreneurship.

Keywords: *Entrepreneurship Education, Entrepreneurial Motivation, Venture Creation Courses*

1 Introduction

In modern times, promoting entrepreneurial culture is sometimes seen as a solution for complex problems such as low productivity, economic stagnation, or high unemployment rates (Farhangmehr et al., 2016). Thus, the priority is to discover new opportunities in today's dynamic, complex, and uncertain environment and also educate competent individuals to manage such projects. Therefore, entrepreneurial education is finding even more significance as time passes, and education systems worldwide have introduced a range of programs to support entrepreneurship in university education (Greene & Saridakis, 2008). Therefore, educational institutions play an essential role in increasing the competence of their students and motivating them toward entrepreneurial activity (Farhangmehr et al., 2016). According to a study investigating the development of the startup culture at German universities, 3840 students, accounting for the majority, were involved in startup projects in Germany in 2018. As a powerhouse of ideas, universities play a central role in creating a lively innovation process (Gründungsradar, 2018). This has attracted research interest to

evaluate entrepreneurship education's (EE) impact on students.

Previous research has focused a lot on quantitative approaches examining either the drivers of students' entrepreneurial motivation (EM) or EE's general effects and outcomes (Farhangmehr et al., 2016; Hägg & Gabrielsson, 2020). However, much of the research in the past years does not provide explicit empirical support for the view that EE increases the EM of students (Varamäki et al., 2015). Motivation has already been proven to be an essential factor in the educational life of entrepreneurship students (Osterbeek et al., 2010; Farhangmehr et al., 2016; Hytti et al., 2010). Of particular interest are the influential factors relating to motivation, such as intrinsic and extrinsic motivation, of which researchers have not given adequate importance (Buzdar et al., 2017).

To overcome these limitations, the main objectives of this paper are to (1) examine what factors determine students' entrepreneurial motivation before and during entrepreneurship education programs and (2) explore how the balance between intrinsic and extrinsic motivation influences the development of entrepreneurial motivation over the course period. To do so, we want to make use of

the grounded theory approach. Appropriate application of this method will allow us to understand a phenomenon that cannot be explained with existing theories and paradigms (Hussein et al., 2014). Furthermore, as given by its description, we will enter the field of research without narrowing down the research questions, which is commonly done in other research designs (Charmaz & Smith, 2003). This leads us to the following research question: What factors influence the development of the balance between students' intrinsic and extrinsic entrepreneurial motivation throughout the entrepreneurial education program?

The following part of this paper briefly explains concepts and current academic discourses relevant to our study. The third part outlines the chosen research methodologies and describes the data selection, collection, and analysis procedure. To provide additional information, the fourth chapter summarizes the case. The fifth part is primarily concerned with presenting the derived conceptual framework, the data structure, and the identified categories described with a set of research propositions. Followed by the findings, the sixth section discusses the overall findings by mapping out the study's research contributions and practical implications. Lastly, the paper addresses research limitations as an opportunity to make suggestions for future research.

2 Conceptual Backgrounds

2.1 Entrepreneurial Motivation in the Context of Entrepreneurial Education

Since the first entrepreneurship course was held in 1947, its relevance in practice and science has increased considerably (Katz, 2003). Throughout the development of entrepreneurship education over the past decades, EE has become an established research field and has gained more and more importance (Katz, 2003; Kuratko, 2005). After a scientific discussion about whether entrepreneurship can be taught, most researchers agreed that entrepreneurship skills could be taught and are not fixed individual characteristics (Kuratko, 2005; Oosterbeek et al., 2010). Based on this assumption, EE plays an essential role in developing students' entrepreneurial skills and spirit, thereby discovering business opportunities and establishing businesses (Sui et al., 2017;

Freiling & Harima, 2019a). EE intends to motivate students to choose entrepreneurship as a career option and start their own business by cultivating the skills necessary (Hasan et al., 2017). Due to a lack of a consistent definition, EE can have different meanings depending on where studies have been conducted (Hägg & Gabrielsson, 2020). Based on a Delphi analysis, Neck and Corbett (2018) developed a definition of EE, defining it as "developing the mindset, skillset, and practice necessary for starting new ventures" (p.10). The research field of EE is very fragmented. Within a systematic literature review on EE, Hägg, and Garielsson (2020) identified the effects and outcomes of EE as one significant discussion in EE research.

Entrepreneurial motivation is people's motivation to make entrepreneurial decisions (Shane et al., 2003). In psychological studies, motivation is considered the initiation, direction, intensity, duration of behaviors, and desire and willingness to do something (Brown, 2007). The concept of EM plays an essential role in understanding entrepreneurial behaviors and pursuing entrepreneurial opportunities (Carsrud & Brännback, 2011). Researchers assume that human motivation influences decisions and that peoples' variance in motivation will influence who pursues entrepreneurial opportunities and how people undertake the entrepreneurial process (Shane et al., 2003). The literature highlights the importance of understanding the factors that motivate people to act entrepreneurially to better understand the entrepreneurial process and its influencing factors (Naffziger et al., 1994; Støren, 2014).

Consequently, if EE is intended to increase students' entrepreneurial activity, it should motivate them to act entrepreneurially and pursue entrepreneurial opportunities (Farhangmehr et al., 2016). Therefore, numerous studies have focused on the outcomes and effects of EE (Hägg & Gabrielsson, 2020). However, previous studies have produced contradictory empirical results regarding the effects of EE on students' EM. On the one hand, some studies have found an increase in students' EM after attending entrepreneurship courses (Hsu et al., 2014; Solesvik, 2013). On the other hand, other studies have failed to prove a significant effect of EE on EM (Sui et al., 2017; Farhangmehr et al., 2016). Some studies even found negative effects of EE on students' EM due

to an EE developed realistic perspective of themselves and what it takes to be an entrepreneur (Oosterbeck et al., 2010).

During the scientific discussion on the contradictory results, researchers emphasize the complexity of the phenomena and the importance of external factors and contextual differences (Farhangmehr et al., 2016; Hutagalung et al., 2017; Solesvik, 2013). Consequently, several studies have examined various influencing factors on the relationship between EE and students' EM, such as students' background (Sui et al., 2017), attitudes, subjective norms, perceived behavior control (Solesvik, 2013), and family environment (Hutagalung et al., 2017). However, there is still a lack of possible explanations for the contradictory results regarding the effects of EE on students' EM. Despite this lack, there is surprisingly less qualitative research on the phenomena as most studies applied quantitative research methods.

2.2 Students' Intrinsic and Extrinsic Motivation in Entrepreneurship Education Courses

The classification of intrinsic and extrinsic motivation is a well-established concept in motivational research. For a long time, researchers from different fields have emphasized the essential role intrinsic and extrinsic motivation play in many social and economic interactions (Bénabou & Tirole, 2003). Intrinsic motivation is the motivation to do something for its own sake and the pure pleasure of the task (Hennessey et al., 2015).

On the one hand, this can involve the motivation for a task. A feeling of satisfaction arises through the engagement with the task itself and the challenge it implies. On the other hand, a person can have intrinsic motivation for collaboration and community, including interest and enjoyment with the contributors, without receiving any reward (Hennessey et al., 2015). Extrinsic motivation is an external reward that follows a particular behavior, such as power, status, social acceptance, or monetary rewards (Carsrud & Brännback, 2011; Freiling & Harima, 2019b). However, due to the complexity of the construct, researchers have indicated that more research is needed to understand the structure of intrinsic and extrinsic motivation in more detail (Hennessey et al., 2015). Moreover, intrinsic and extrinsic motivations are

not mutually exclusive, as both can motivate a person to take action (Carsrud & Brännback, 2011). Researchers emphasize the dynamic relationships and the interplay between extrinsic and intrinsic motivation (Hennessey et al., 2015). For instance, extrinsic and intrinsic motivators can cooperate or compete depending on certain factors. Moreover, extrinsic motivation can undermine intrinsic motivation under certain circumstances (Bénabou & Tirole, 2003). Furthermore, an explicit distinction is not always possible. Some goal- or constraint-oriented motivators can become so internalized over time that they no longer feel as if they come from outside the person but become part of a person's identity and sense of self. Moreover, intrinsic and extrinsic motivational states can vary depending on the social environment (Hennessey et al., 2015).

Researchers in the field of EM also use the concept of intrinsic and extrinsic motivation to examine EM in more detail. EM can be intrinsic, extrinsic, or both, as an entrepreneur may be internally motivated by the entrepreneurial task and externally motivated to achieve wealth and status (Carsrud & Brännback, 2011). To gain a more complex perspective on what types of motivation promote optimal learning and performance in EE, examining and understanding the relationships between students' intrinsic and extrinsic motivation and their effects is crucial (Lemos & Veríssimo, 2014). However, there is only a limited number of studies investigating students' intrinsic and extrinsic motivation in the context of EE. For instance, in a quantitative study, Hytti et al. (2015) examined how a person's motivation for studying entrepreneurship and working in teams affects later levels of performance related to business idea development and found that intrinsic motivation has a negative effect.

In contrast, extrinsic motivation has a positive effect on learning outcomes. However, team-seeking positively affects the relationship between intrinsic motivation and outcomes. Nevertheless, due to the importance of intrinsic and extrinsic motivation, research must examine its interplay and its effects on students' entrepreneurial motivation in EE. In particular, qualitative research is necessary to investigate the phenomena's dynamics.

Overall, the current literature has produced contradictory results on the effects of EE on

students' EM (Farhangmehr et al., 2016; Hsu et al., 2014; Oosterbeck et al., 2010; Solesvik, 2013; Sui et al., 2017). Moreover, even though researchers highlighted the importance of understanding the underlying dimensionality of both students' intrinsic and extrinsic motivation (Lemos & Veríssimo, 2014), the existing research is limited. Furthermore, the current literature on the relation between EE and students' EM is limited to quantitative studies examining the phenomena' dynamics.

3 Methodology

3.1 Research Design

When dealing with qualitative research, the focus is on constructing theories from emerging data. In this context, social constructivism, also associated with interpretivism, represents the central paradigm and is also referred to as the philosophical foundation of qualitative research. Constructivism is a research paradigm that denies the existence of objective reality (Mills et al., 2006). Individuals create their knowledge based on interactions with their environment, including with others (Dr. Md. Mahmood Alam, 2016). Honebein (1996) claims that constructivism is a philosophical paradigm based on the experiences of people and the reflection of those experiences. This approach leads to constructing an understanding and knowledge of the world (Honebein, 1996). This approach emphasizes the meaningful nature of people's character and participation in social and cultural life. It assumes that people's knowledge of reality is a social construction by human actors (Chowdhury, 2014).

Social constructivism is also significant in grounded theory, another crucial methodology relevant to this study. Traditional grounded theory asks researchers to enter the field of inquiry with as few predetermined thoughts as possible. Recording events and detecting happenings are required to be unfiltered and not linked to prior existing hypotheses and biases (Mills et al., 2006). Therefore, the grounded theory methodology is a widely used mode of qualitative research when generating theories (Strauss & Corbin, 1997). It is characterized by the iterative process and interrelatedness of planning, data collection, data analysis, and theory development. The method of continuously gathering data is called theoretical

sampling. It is continued until a contribution of new data does not lead to substantial theory development, known as theoretical saturation (Kaiser and Presmeg, 2019). Grounded theory methods consist of systematic yet flexible guidelines for collecting and analyzing qualitative data to construct theories (Charmaz, 2014). These methods include different coding procedures based on constant comparison (Kaiser & Presmeg, 2019). It fosters the development of conceptual analyses and uses a systematic inductive, comparative, and interactive approach (Charmaz, 2008). This grounded theory methodology was especially appropriate for the present research since little is known about the interplay between intrinsic and extrinsic motivation in the entrepreneurial education context.

3.2 Data Selection

To generate data for the present qualitative research, a selection of interview partners was required. Hence, criteria were identified to find appropriate interviewees. As the main emphasis of the Business Administration Master's program at the University of Bremen, Entrepreneurship and SME Management is one suitable entrepreneurial education program. Students who attended three or more courses offered by Entrepreneurship and SME Management were reached via the university's internal platform designated for course registration purposes, among other things, and the online social network LinkedIn. These students offered first-hand experience and in-depth detailed information to contribute to the research topic since they had long-term participation in the courses. To gain information on different views, choosing students who decided to found after the courses and those who did not was significant. In order to broaden the perspectives, employees of the Chair for SMEs, startups, and entrepreneurship (LEMEX) at the university were selected as well. After the selection, the suitable interview partners were interviewed. The statements and information generated through the interviews were then compared to the existing literature, which was managed using Zotero as a literature management tool.

3.3 Data Collection

Before conducting interviews, the creation of an interview guide was significant. Open questions

were prepared in advance to obtain the necessary information. When needed, follow-up questions were posed as well. The data collection was then accomplished through semi-structured interviews via Zoom-Meetings from November 2021 to January 2022, representing the primary data. As mentioned before, students who attended three or more courses at the University of Bremen were interviewed. The number of conducted interviews was 15 in total, of which three students started businesses after the course, and two were employees at LEMEX at the university. Furthermore, the interviews had a duration of approximately 40 to 70 minutes. The permission to record the interviews was obtained using a consent form to be signed by each interviewee. The interviews were transcribed, and initial coding was conducted using MAXQDA. Afterward, focused coding was applied. In addition, the underpinning literature and additional lecture material served as the secondary data in the present research.

3.4 Data Analysis

After the transcription, the data generated from the interviews was evaluated after the data structure, according to Gioia et al. (2012). Based on the steps of the Gioia method, the coded data was transformed into a data structure. In the first step, all the codes that emerged from the initial coding of the interviews were collected. The data could be broken into parts or properties to crystalize significant points through the initial coding process. At first sight, it is usual that the number of categories seems overwhelming. In the 1st-order analysis, the researchers attempt to adhere faithfully to informant terms, leading to a high number of categories. Afterward, focused coding was conducted to create the 1st-order categories. During this process, concentration was put on the most useful initial codes with the most logical sense, which helped categorize the data. Thereby, similarities and differences in the categories were seeking to reduce the categories to a more manageable number. The categories were labeled and described in the next step, which required simultaneous multiple-level thinking, i.e., at the informant terms and codes, the 2nd-order theoretical level of themes, and the dimensions or formulation of further questions (Gioia et al., 2012). This process is also termed theoretical sampling (Glaser & Strauss, 1967). The second step was the combination of 1st-order categories

with 2nd-order themes. In this 2nd-order analysis, the researchers were in the theoretical realm. Here, the focus was on finding out which concepts might describe and explain the observed phenomena to form themes, especially to pay attention to nascent concepts or existing concepts that leap out because of their relevance to a new domain. The so-called theoretical saturation was reached when a workable set of themes and concepts was in hand. The final step of the analysis was investigating the possibility of distilling the 2nd-order themes into overarching aggregate dimensions. The complete set of 1st-order terms and 2nd-order themes and aggregate dimensions form the basis for building a data structure that visualizes the data and provides a graphic representation of the progress from raw data to terms and themes in conducting the analyses. This is crucial to demonstrating rigor in qualitative research (Gioia et al., 2012). Furthermore, the data structure was used to construct a framework.

Throughout the entire research, literature had a significant role. Literature needed to be analyzed thoroughly to identify an area of entrepreneurial education that had not been explored or researched sufficiently yet. By searching through several databases, attention was paid to surprising and nascent fields of study. In further investigation, literature was used when creating the data structure and the grounded model after conducting interviews. All observations, including the examined 2nd-order themes and aggregated dimensions and the linkages between observations, were continuously mirrored in the literature to serve evidence. Moreover, the statements and findings were validated and compared to the existing literature. It is noticeable that literature iteratively served as a source of evidence from the beginning of the research until the writing of the present paper.

3.5 Validity and Reliability

Interviews were selected as a suitable method to ensure validity and reliability, increase transparency, and enhance the assessment and evaluation of this research. Through the interviews, consistent results could be adequately gained to provide findings relevant to the research topic. All interviews were conducted under the same conditions, and the questions were asked using the same interview guide. Moreover, the interviewees were protected by signing a consent form to keep

all statements confidential. The selection of different interview partners enabled access to a wide range of perspectives to contribute to the research question. In addition, the findings were constantly compared with the literature to ensure their truthfulness. Furthermore, the detailed information of the present research results indicates replicability and a scientific underpinning.

4 Case Description

The authors of this study draw on data collected in the winter semester 2021/2022 from students, graduates, and teachers from the Entrepreneurship and SME Management course. This course takes place at the University of Bremen in Germany. This study aims to determine to what extent the participants' motivation to start a business as a result of entrepreneurial education and to show what role intrinsic and extrinsic motivation plays in this context.

This study was carried out as a project module at the University of Bremen as part of the Master's program in Business Administration. The project module aims to prepare for the master's thesis at the university. Building on the other modules, the participants learn to research independently and write a high-quality scientific article. A methodology adapted to the research type is used. The students can freely choose the topic of the project module within different research fields within entrepreneurship. The research question is: What drives or hinders the intrinsic and extrinsic motivation of entrepreneur students? Furthermore, how does the interplay of intrinsic and extrinsic motivational factors influence the development of the entrepreneurial motivation of students over the course of the entrepreneurial education program? In the following weeks, an introduction to the essentials for writing a scientific study took place during a series of workshops. These workshops covered research methods, data analysis methods, test interviews, observations in the field, and formulating and explaining research propositions. Through several ongoing presentations, several feedback loops could be conducted within the module, and the teachers were informed about the current status.

Interviews were conducted with students, graduates, and teachers who were in direct contact with the course.

5 Findings

5.1 Conceptual Framework

This section presents a synthetization of the interrelated components identified during the research. To understand the results, the conceptual framework illustrates how the critical components of the model come together to explain the phenomena of entrepreneurial motivation. As mentioned, the study was divided into three periods (the EM before, during, and after the course) to emphasize the change in motivation over time.

The interviews uncovered many exciting aspects. As assumed, students enter the course carrying a pre-course, initial EM, encouraging participants to choose the class. This includes the different proportions of intrinsic as well as extrinsic motivation sources. Participants often associate the course with an adventurous and pleasurable experience because they enjoy learning and working independently. Then, several interviewees seemed to have subjective values and particular character traits that led to their interest and, eventually, the selection of the study focus. Such features include curiosity and profound aspects like the desire to achieve self-realization by becoming independent through new venture creation. These are the two factors that embody intrinsic motivation. On the other hand, extrinsic motivation sources primarily consist of expected rewards by external entities to acquire good grades, for example. Collectively, these two components serve as the basis of EM throughout time.

Depending on the pre-course motivation, students then experience profound changes set out by perceived extrinsic drivers and barriers to EM during the course period (Freiling & Harima, 2019b; Freiling & Harima, 2019c). Therefore, the second stage is called the "EM change context", as seen in the model. In the interviews, it quickly became evident that students' EM is driven by several reasons, which can be divided into four categories. The first one deals with the sense of belonging through external support and appreciation. The majority of students described how external recognition in terms of the help of the chair left a positive feeling, resulting in an enhancement of the EM. Interviewees also expressed an eagerness to drive change, which was developed throughout the course. Students felt the

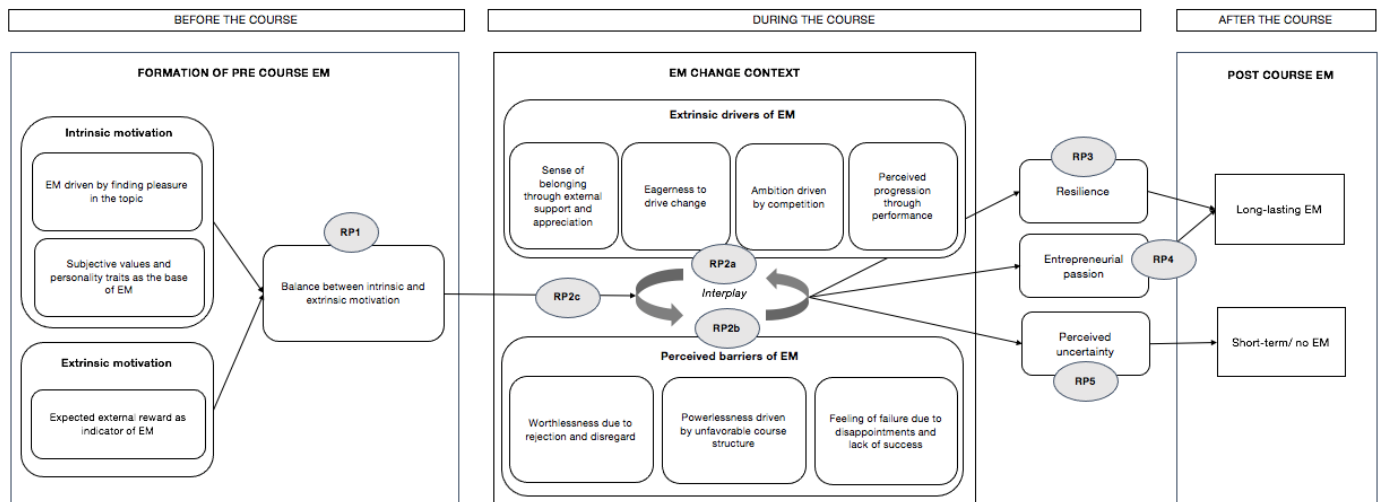


Figure 1: Visual representation of the conceptual framework

need to have a potentially positive impact on society, increasing their willingness to take action. Not only that but also the competition among the students fostered motivation because comparing the work with the progress of other groups increased the incentive to proceed. Similarly, students' progression and success experiences also boosted ambition toward new venture creation. Students also identified that being enrolled in such venture-creation activities meant barriers to entrepreneurial motivation. Several themes emerged that caused the loss of motivation, mainly due to negative feedback and little support received from lecturers and fellow students. The entrepreneurial motivation was highly dependent on either praise or criticism and the quality of feedback. Sometimes, the feedback was claimed to be contradictory, vague, or even counterproductive. Sometimes, the unfavorable course structure acted as a hurdle to entrepreneurial motivation, which was repeatedly attributed to practical versus theoretical modules, the latter having less applicability when starting a business. The course structure's high time and work pressure gave realistic insights and led to discouragement and antipathy regarding new venture creation. Another reason for an adverse change in entrepreneurial motivation disclosed by interviewees is the feeling of failure due to disappointments and lack of success. Not meeting its own expectations or not correctly implementing the idea raised self-doubts and eventually dropped the motivation. Students experienced several factors mentioned above and even addressed an overlapping effect, classified as the "interplay" between drivers and barriers to EM.

The balance between the initial sources of motivation and the interplay between drivers and barriers shape specific outcomes of EM after the course, the first one being the emergence of resilience, the development of entrepreneurial passion, and lastly, the perceived uncertainty felt by the students. These outcomes imply a stable and long-lasting EM or a somewhat fragile EM. Figure 1 presents the conceptual framework.

5.2 Data Structure

The following section describes the data structure that merged after the transcription and coding procedure. Figure 2 presents the data structure.

After sampling the 1st-order categories and forming the 2nd-order themes, it was noticeable that students had intrinsic or extrinsic entrepreneurial motivation before attending the Entrepreneurship and SME Management courses. Moreover, these motivations occur in different intensities and, thus, determine their initial entrepreneurial motivation. These antecedent factors could be classified as sources of entrepreneurial motivation. When constructing the 2nd-order themes, it became clear that multiple external factors occurring over time affect the further development of entrepreneurial motivation. Here, students' EM vary depending on how intense their initial motivation before the course was. The dimension crystallizing out of these factors was described as extrinsic drivers of entrepreneurial motivation. Furthermore, the third and last aggregated dimension results from the students' perceived barriers during the course of time.

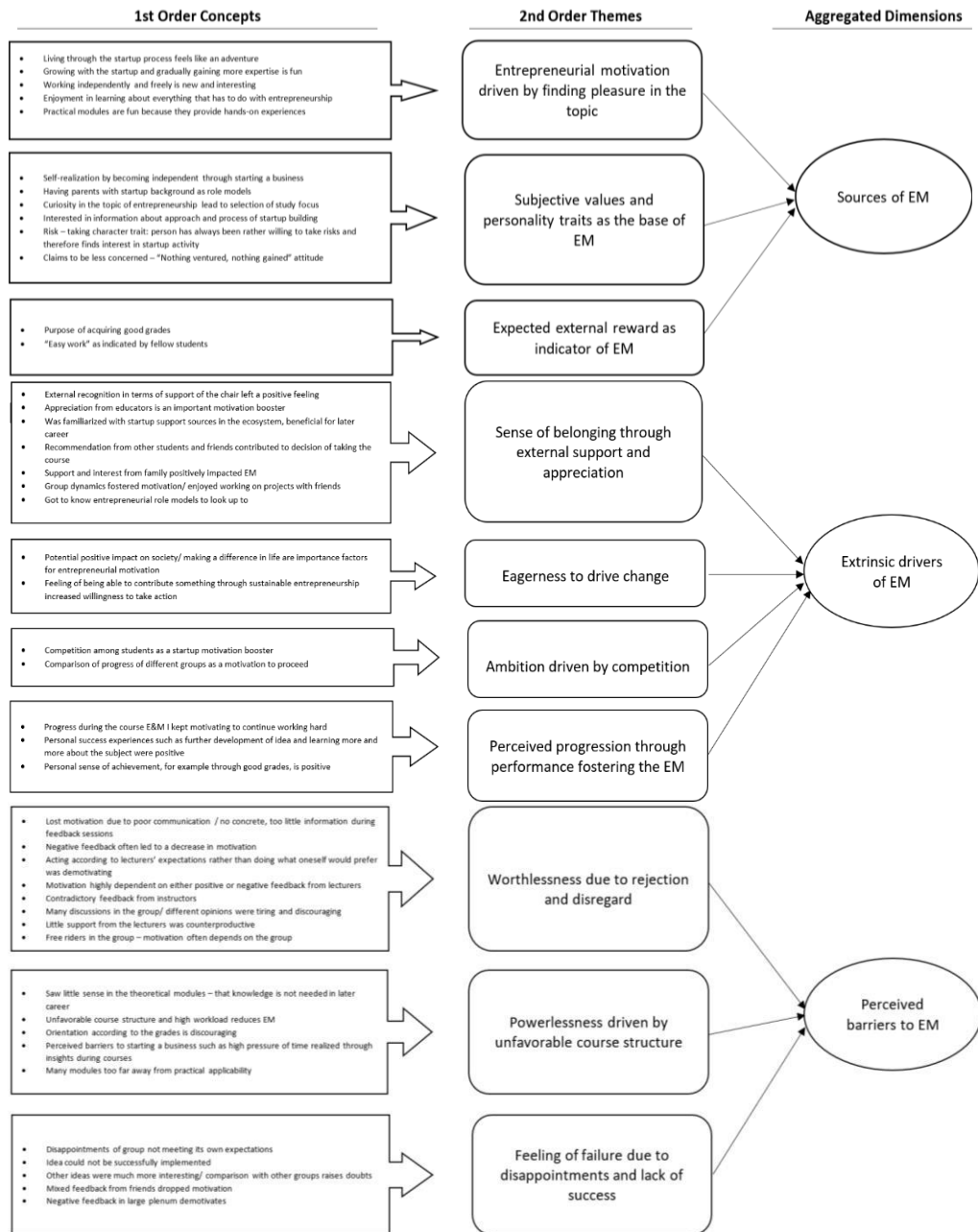


Figure 2: Data Structure

Students state that encountering several barriers influences their entrepreneurial motivation and determines the outcome of the intensity of their final EM after the course.

The description above implies that the aggregated dimensions were assigned to the course of time and represent the process of the development and influencing factors of students' entrepreneurial motivation in Entrepreneurship and SME Management courses. A detailed explanation of each factor and dimension will be given in the next section of this paper.

5.3 Research Propositions

5.3.1 Balance between Intrinsic and Extrinsic Motivation Sources

During the interviews, students shared their motivation sources, each of which unveiled a unique balance between intrinsic and extrinsic motivation, creating individualism among participants of EE courses. This peculiarity was undoubtedly reflected by each of the course participants, having their own values and suitable or unsuitable character traits for entrepreneurship activity:

“I have had a risk- challenge-taking personality ever since I can think. My desire to be independent and to run a business enhance my low fear of failure, I guess.”
(Anonymous 5)

“I did not really have [an entrepreneurial] background for me to say that I had a specific idea and wanted to start [a business]. [I chose this study focus because] I found it very interesting, and I could imagine helping out in new venture creation programs at some point but not really starting a business myself. I am not the kind of person who has a solution to a particular problem to sell it on the market. I am not like that.”(Anonymous 2)

Aside from their individual characteristics, some students revealed a personal entrepreneurial background, contributing to the uniqueness of each course participant:

“My background got me in touch with the topic and since I was a child I liked solving certain problems and taking challenges. I think the benefits of my parents' entrepreneurial activities, such as independence and focusing on an idea, made me think the same way they did.”
(Anonymous 5)

As observed in the interviews, this initial blend of motivation factors plays a central role in the development of the entrepreneurial motivation of students and has only been indicated partially by researchers, claiming that both entrepreneurial intention and motivation are shaped by personal and environmental factors (Bagheri, 2015; Hou et al., 2019; Malebana, 2014). Entrepreneurial motivation is determined by entrepreneurs' perceptions of their environment and their own abilities, personal characteristics, the personal environment, the appropriate business environment, the specific business idea, and the entrepreneur's goals (Malebana, 2014). Carsrud and Brännback (2011) underline this statement by saying that motivators can be intrinsic, extrinsic, or both. However, less evidence has been found on the importance of intrinsic and extrinsic motivation balance and proportion.

After evaluation and to contribute to the field of study, the following research proposition has been derived:

RP1: The balance between intrinsic and extrinsic motivational factors is determined by each student's individuality, demonstrating the uniqueness of the pre-course entrepreneurial motivation.

5.3.2 Extrinsic Drivers and Perceived Barriers of Students/ EM and Its Interplay

Clear structures emerge within the framework of positive external influences on students' entrepreneurial motivation during the course. Overall, four significant drivers that positively influence the students' EM during the course could be identified. These external drivers include the sense of belonging through external support and appreciation, the eagerness to drive change, and the ambition driven by competition and progression through performance.

The first positive pattern identified as having an extrinsic influence on EM was the so-called “sense of belonging through external support and appreciation”. This is evidenced from various sources. Dustin, for example, reports:

“One factor that spurred me on the most and also definitely contributed to my interest in founding was positive feedback from the chair, which also gave me a feeling of being able to exist in the start-up scene and also belong to it yourself.”(Dustin)

Numerous other students support this statement. Other interviewees felt they could always turn to the teachers and receive positive feedback and recognition for their efforts. This has strengthened many of them in their motivation to found a company. The literature also supports this. For example, it has been found that positive feedback can increase performance and boost motivation among students (Shambare, 2013). Stamboulis and Barlas (2014) support this statement with observations in the field of EE showing that positive feedback correlates with performance improvements.

Another external factor we could assign to this cluster is the support of the family and the interest

from the social and family environment. Felix stated:

"Since I already have self-employed family members who have founded businesses, my motivation was even higher because my family was behind my studies and welcomed my own start-up plans. The interest in the topics of my studies was also always there, and if my family hadn't been so supportive, I would have had less motivation to start up on my own." (Felix)

The role of friends and group dynamics can also be an extrinsic driver in the EM context. This can be seen, for example, in Celine's statement:

"A lot of my friends think my study content is cool and are interested in it. The positive feedback somehow ensures that I myself am more interested and motivated in the topics. I also needed to feel comfortable in the group because we did a lot of group work. I liked that we had a good group dynamic, and it was fun to work together with the people. In the process, we motivated each other to be better." (Celine)

This indicates the relevance of extrinsic drivers in terms of a sense of belonging through external support and appreciation. Rembiesz (2017) and Hutagalung et al. (2017) found a positive influence of the family environment on EM in general. Farmer et al. (2011) determined the positive effects of the recommendation of friends and their effects on decision motivation and were also able to establish a positive relationship. Our established influence of group dynamics on motivation and willingness to perform was also observed in the general university context by Shirokova et al. (2017). Another cluster that has positively impacted students' EM is called "eagerness to drive change". This refers to extrinsic drivers such as social recognition through one's own possible contribution to shaping society. These students typically want to do something beneficial for society, which they would not be able to do in this way without having their own business. These drivers can be found in Felix's case:

"I was extremely motivated by the idea of theoretically being able to make a big difference in society. Within the course, we

developed a startup that deals with sustainability. As an entrepreneur, you can really change a lot if you dedicate yourself to the right topics. That feeling has been the most motivating." (Felix)

The literature supports this statement. For example, Timmons and Spinelli (2009) investigated the reasons for starting a business and found that the possibility to change society positively plays a relevant role. In addition, the number of sustainable start-ups that benefit the earth and society has risen significantly in recent years, and universities are a perfect place to transfer these innovations into society (Frank & Schröder, 2018).

We found a third extrinsic cluster related to ambition driven by student competition. Many students, such as Celine, enjoyed competing their ideas with those of the other groups and motivating each other to be better.

"For me, the competition was always very motivating and pushed our group to do better and better, so my EM definitely increased as well." (Celine)

The self-confidence of entrepreneurship students like Celine increases through competition and direct comparison (Engle et al., 2010). Overall, competition is also a good driver in the free economy and an essential factor in motivating the founder to improve his performance (Rembiesz, 2017). In the university context, group dynamics have been studied by Pittaway and Cope (2007), among others. They were able to emphasize in their study that group work significantly impacts the effectiveness of learning and that negative group dynamics also harm motivation.

The fourth extrinsic cluster with positive effects on EM relates to perceived progression through performance. Thus, visible progress in studies, positive perception of success, good grades, and the feeling of understanding more and more about the world of entrepreneurship positively affect EM for many students interviewed.

"The fact that one could always see a certain progress and dive deeper and deeper into the subject matter, and also good grades, gave me a feeling of security, made me more

courageous and also motivated me to set up my own business later on.” (Lukas)

Thus, motivation and euphoria can arise from performance progress and success and generally increase the likelihood that the person in question will start a business (Cardon et al., 2009; Rembiasz, 2017). The progress, newly developed skills, and increased independence can lead to a passion for the subject, positively impacting the EM (Jones & Englisch, 2004; Shah et al., 2020).

From this argumentation, follows:

RP2a: During the course, entrepreneurship students experience an increase in motivation through extrinsic drivers such as the sense of belonging through external support and appreciation, the eagerness to drive change, the ambition driven by competition, and progression through performance.

In contrast to the factors described above that increase EM there are also perceived barriers that have a contrary effect on EM. During the course, entrepreneurship students experience a decrease in motivation through perceived barriers such as worthlessness due to rejection and disregard, powerlessness driven by an unfavorable course structure, and the feeling of failure due to disappointments and lack of success.

A barrier that reduces EM for some students is the feeling of worthlessness due to rejection and disregard. In this case, the interviewees feel rejected, excluded, or even left alone. A reason for these feelings can be negative group dynamics. For example, Lukas describes that he had the feeling that his ideas were not taken seriously. Another factor that reinforces the feeling of worthlessness and thus negatively impacts the EM is negative feedback from outside. As Celine indicated in her interview, this can refer to negative feedback from family and friends. Nevertheless, it can also result in negative or incomprehensible feedback to the students. Lukas, among others, mentioned the same problem.

The literature supports these observations. For example, many students feel a sense of worthlessness in the course of their studies (Foo, 2011), which can be caused and reinforced by

negative feedback from outside (Kirkwood, 2009). In addition, negative attitudes from friends or family toward a career as an entrepreneur create additional doubt and reinforce the feeling of being left alone (Liu et al., 2020; Smith & Beasley, 2011). Researchers found that constant negative feedback in pursuing challenging goals can cause entrepreneurs to abandon their original goals (Brockhaus, 1980; Cardon et al., 2009).

The second barrier perceived by the course participants can be described as “powerlessness driven by unfavorable course structure”. Here, the interviewed course participants often felt powerless or lost control and dependence. For example, Lukas describes:

“During the course, group work was a big problem for me. I didn't have a single group where there were no problems. Besides, everyone always got the same grade, although some did much more than others. There were always free riders, and the groups were simply too big. That demotivated me. The course structure alone was not well solved.” (Lukas)

Celine, among others, saw another problem in connection with the unfavorable course structure. She believes that some modules are too far from reality, that one would not need the knowledge later as a founder in business, and that the workload was too high compared to other modules. The literature underlines these observations, stating that familiarity and a similar level of performance are important success factors in the composition of a start-up team (Ruef et al., 2003). Unfamiliar group members can slow down group dynamics and motivation (Arpiainen & Tynjälä, 2017; Reeves et al., 2019). Poor course structures can reduce students' motivation (Nawaser et al., 2011). Negative group dynamics also negatively impact students' output (Forsyth, 2019; Gifford et al., 1979).

The third perceived barrier to EM relates to feelings of failure through disappointment and lack of success. This is accompanied by feeling like a failure, weak, incapable, or useless, and thus inhibited in motivation. Reasons given for this are, for example, that the group failed to meet its expectations by not being able to implement ideas successfully or to structure them. Negative

feedback in the form of subjectively perceived bad grades is also a reason for the feeling of failure. In particular, Celine mentioned that negative feedback in a large group is particularly demotivating. Comparing oneself with other groups can also lead to a subjectively worse performance, which reduces EM (Cohen & Bailey, 1997).

Researchers are dealing with this issue and suggest that fear of failure plays a vital role in entrepreneurship and can significantly increase perceived uncertainty (Sandhu et al., 2011; McKelvie et al., 2011; Milliken, 1987). Furthermore, the feeling of failure also affects self-confidence (Liu et al., 2020; Baumeister & Tice, 1985), and low self-confidence reduces the willingness to take risks, which is a central factor for startups (Sandhu et al., 2011). Since starting a business is associated with exceptionally high risks (McMullen & Shepherd, 2006), a higher willingness to take risks would be necessary for EM (Iakovleva et al., 2014; Matos & Hall, 2020; Su et al., 2020). Therefore, we state the following research proposition:

RP2b: During the course, entrepreneurship students experience a decrease in motivation through perceived barriers such as worthlessness due to rejection and disregard, powerlessness driven by an unfavorable course structure, and the feeling of failure due to disappointments and lack of success.

Another important aspect that came to our attention during the interviews was the interplay between the initial pre-course motivation and the drivers and barriers during the course. The impact of the two EM change context factors depends on the composition of the pre-course motivation. Those drivers and barriers also influence each other. Therefore, effects may vary from student to student. In other words, a course participant who initially indicated high intrinsic motivation later portrayed a far more positive interpretation of the course program than someone who initially approached the study focus with a rather unstable motivation. Interestingly, this was also visible in some statements made by the students:

“Well, of course, [...] [new venture creation] is fun because I think the guys are great and we get along great with each other. [...] And

I am someone who can get really stuck into such things and want to push them forward. It is just so much fun to work on something that belongs to me and generate a job for myself. [...] We were able to take another module in the second semester where we could create something ourselves, and that lit a fire in me again. It made me want to get involved in a field I did not know at all. The challenges motivated me.” (Anonymous 5)

Despite that, we also noticed cases in which the interplay between drivers and barriers affected the students' original motives, meaning a change in the character traits of the person who had entered the course. Thus, there is somewhat of an occasionally occurring interdependence between the initial motivation and the motivation built throughout the course that seems to influence each other. For clarification purposes, the following quote gives an example of how components of motivation drivers led to a change in the overall attitude and mindset toward entrepreneurial activities.

“Positive feedback has led me to be more courageous and to dare to come up with ideas that I would not have thought of before. Overall, the course was more fun, and because we supported each other in the group, I was less afraid of the tasks than of the course.” (Dustin)

Felix describes another example of the interdependencies of the drivers of EM, the perceived barriers of EM, and the initial intrinsic motivation. He had a low intrinsic motivation before the course, but positive extrinsic influences such as feedback and good grades have increased his EM. He even states that he has become more risk-averse due to the environment and that his character traits are now more similar to those of an entrepreneur than before the course. This example shows how the environment can influence a person's values (Rahmawati et al., 2012). Hennessey et al. (2015) have expressed similar notions in their work, claiming that feedback received from engagement in a task and feedback from relevant others can either enhance or inhibit self-confidence. For example, extrinsic and intrinsic motivators may interact or compete depending on certain factors. In addition, extrinsic motivation can undermine intrinsic motivation in certain circumstances (Bénabou & Tirole, 2003).

However, this rather complex finding is another aspect that has not been advocated enough in the current state of research, which we want to give importance to by drawing on the following research propositions.

RP2c: Depending on the balance between intrinsic and extrinsic EM before the course, the perceived drivers and perceived barriers of EM have different effects. This is also due to interactions between these aspects.

5.3.3 Resilience

In our interviews, we observed three different patterns regarding the interplay of our participants' initial entrepreneurial motivation, extrinsic driver, and perceived barriers influencing the development of their' EM. The following three research propositions were formed based on this and by contrasting it with the literature. In the first pattern, the interplay of students' initial motivation, perceived barriers, and extrinsic drivers during the course emerges in resilience and, finally, a long-lasting post-course entrepreneurial motivation.

Our observations showed that students with initially predominantly intrinsic motivation develop resilience, which is evidenced by the fact that they overcome the perceived barriers they face during the course. As a result, barriers can still lead to disappointments and decreased motivation. However, only temporarily, due to the resilience, do the students perceive the barriers, and the barriers' negative effects are mitigated. This becomes especially evident in Celine's interview, where she explains how she experienced a decrease in motivation due to the high workload and the related stress and time pressure:

“That is why my motivation went down a bit, but then went up again. Because of course you have ups and downs when you develop a business idea like that, and sometimes you also have setbacks. But at some point, things start to look up again once you've been able to sort everything out. [...] In fact, at the very end of the course, my group and I also considered starting this business.” (Celine)

Elif tells us about similar developments in her interview, experiencing a temporary decrease of

motivation from time to time, which, however, she overcomes finally:

“As a group, we were sometimes very surprised by the criticism, I would say, we couldn't always understand it, because it seemed contradictory. To be honest, that was demotivating at times.” (Elif)

The quotes well illustrate the dynamics in the development of students' EM due to the perceived barriers. However, it also indicates that students develop resilience mainly caused by their initial intrinsic EM, which helps them overcome barriers and short-term declines in motivation. The literature confirms these observations. For example, researchers found that individuals with strong enthusiasm for an activity are more likely to continue to pursue and participate in the activity (Su et al., 2020). Moreover, when facing barriers and problems that stand in the way of their goals, these people will focus their attention and motivation on solutions and try to find solutions to overcome the barriers (Cardon et al., 2009).

Second, our interviews revealed that students draw additional motivation from experiencing extrinsic drivers during the course, which strengthens their resilience. This interplay becomes in particular evident in Elif's interview:

“So I was very lucky with my group. At the beginning of course, it was demotivating for all of us because of the criticism or these confusing things or expectations. [...] But the fact that we got along so well in the group, even on a private level, really showed how important that is. We also motivated each other to continue after something like that.” (Elif)

Other students also emphasize the influence of extrinsic drivers over the course:

“I also particularly liked that I felt that all ideas were valued and taken seriously by the lecturers. So I felt that everyone was supported, every team and individually through personal coaching and so on.” (Celine)

“The knowledge gained through the process of creating and implementing the idea and

following the further development and progress of the idea was a special driving factor of my motivation.” (Anonymous 4)

The quotes reveal a second aspect in the interplay, the extrinsic drivers, and indicate that students' initial intrinsic motivation cooperates with extrinsic drivers arising during the course. Despite positive group dynamics, lecturers' support, and the perceived progression of the project, our participants report further extrinsic drivers reinforcing their motivation, such as the competition between different groups and the positive feedback received from friends and family. The cooperation of intrinsic and extrinsic motivational factors aligns with the literature (Hennessey et al., 2015). Furthermore, researchers describe the development of resilience as a dynamic process that is enabled by an interplay of intrapersonal factors such as personal traits, motivation and values, and beliefs, interpersonal factors such as relationships and team, but also contextual factors such as resources availability or culture (Lee & Wang, 2017). Moreover, the extent of resilience is determined by both internal characteristics and external factors (Hedner et al., 2011). Therefore, an interplay of initial intrinsic dominated motivation and experienced extrinsic drivers enables resilience and helps students overcome faced barriers during the entrepreneurship course. In turn, we suggest the following research proposition:

RP3: The dominance of intrinsic motivation in the balance of initial EM and its interplay with the experienced extrinsic drivers during the course creates resilience, which makes students less vulnerable to the perceived barriers they face during the EE course.

5.3.4 Entrepreneurial Passion

The second observed pattern describes students with initial low entrepreneurial motivation developing an intrinsic entrepreneurial motivation over the course, caused by finding their entrepreneurial passion through the experience of extrinsic drivers.

Our interviews revealed that, in particular, the first course, in which students work in groups on their startup ideas, attracts many students. We have observed that students develop a passion for their

projects when they experience numerous extrinsic drivers in this short period. For instance, Isabel reports an increase in her entrepreneurial motivation, although she has initially chosen the major only as a complementation to her core major:

“When we were given the task of choosing an idea, I was suddenly very motivated [...] I found the task relatively exciting because they told us to develop or choose an idea that doesn't really exist yet, i.e. to create something innovative. [...] And then I suddenly had so many ideas and talked to other people about them and wanted to realize all of them.” (Isabel)

LEMEX staff member Anonymous 1 also notices this transformation in many students with initially low motivation:

“This often changes in the first semester when people somehow feel like dealing with it more and also through the combination of E&M 1 practical but also what topics are there within the proseminar, so what else does the foundation include and which facets are there? That people think, oh, that is not so uninteresting.” (Anonymous 1)

Both quotations underline the experience of extrinsic drivers having a significant impact on students' entrepreneurial motivation, leading to the fact that students identify themselves with their start-up project and develop an entrepreneurial passion. In the literature, entrepreneurial passion is considered a consciously accessible, intense positive feeling and results from engagement in activities with identity-forming meaning and importance to the entrepreneur (Cardon et al., 2009).

Furthermore, our observations reveal that over the entire duration of the course, the initially extrinsic drivers transform into intrinsic motivation, which leads to the students being sustainably motivated to continue their entrepreneurial activities and to overcome faced barriers:

“At the beginning, I would never have thought that we would get this far in such a short time. But I think that was also due to the fact that we had an idea that I was personally very, very interested in and I was

very interested in pursuing it, and then we also had the support of the lecturers.” (Felix)

“One lecturer just didn't believe in our idea from the beginning on, that definitely demotivated us, but we as a group were convinced of it, and our coach also always encouraged us and said that this is a cool idea, this is an idea that is fun and he really motivated us to stay with it[...] I would say that this outweighed” (Isabel)

The quotes emphasize the development of sustainable intrinsic entrepreneurial motivation, helping the participants pursue and overcome perceived barriers. The transformation from initial extrinsic drivers to intrinsic motivation is in line with the literature. Over time, goal- or constraints-oriented motivators can become so internalized that they no longer feel as if they come from outside of the person; instead, they become part of a person's identity (Hennessey et al., 2015). Due to the experience of extrinsic drivers, students with initial low EM discover their entrepreneurial passion and develop a personal interest in the task. Simultaneously, the initial extrinsic drivers transform over time into intrinsic motivation. Therefore, we propose the following research proposition:

RP4: By experiencing extrinsic drivers at the beginning of the course, students can discover their entrepreneurial passion and develop intrinsic motivation over the course, which helps them overcome the perceived barriers they face during the course.

5.3.5 Perceived Uncertainty

The last research proposition is derived from the third identified pattern, the uncertainty perceived by the students during the course period. Depending on the dominance of extrinsic motivation at the beginning of the course, the vulnerability to perceived barriers varies. It could be identified that extrinsic motivation can be affected by the expected external reward, which leads to a change in the entrepreneurial motivation of students. One of the interviewees stated:

“Sometimes it seemed like some coaches did not really like or appreciate the idea so that

I felt uncomfortable and demotivated.”(Anonymous 4)

One of the LEMEX staff members explains the development of this pattern by stating the following:

“There are students - and this happens quite frequently - who enter the course [...] and realize how much work is behind such a foundation, what things can go wrong, that self-employment is not that easy, and how many bureaucratic hurdles stand behind it, even in Germany. Then they decide for themselves: My idea is quite cool, but I don't feel like putting up with all that and would rather be an employee.” (Anonymous 3)

The evidence illustrates that students become more vulnerable to perceived barriers when extrinsic motivation dominates at the beginning of the courses. Therefore, the perceived uncertainty increases and predominates the extrinsic drivers of entrepreneurial motivation. An interviewee pointed out:

“When, in the end, we realized that our idea was not realizable in practice and was actually only developed for the course, it was demotivating.”(Anonymous 7)

Thus, the predominant perceived uncertainty negatively influences the student's desire to start a business and leads to short-term or no entrepreneurial motivation.

The literature also emphasizes the observation above. Researchers state that constant negative feedback in pursuing challenging goals may cause entrepreneurs to discard their original goals (Cardon et al., 2009). Fear of failure diminishes the willingness to pursue and participate in an activity, while individuals with solid enthusiasm for an activity are more likely to continue (Su et al., 2020). Moreover, students' motivation and satisfaction can be negatively affected when realizing they cannot achieve the desired outcome (Hytti et al., 2010). In addition, Stipek (1993) claims that rewards significantly impact human behavior. Extrinsic and intrinsic rewards differ in their duration. While extrinsic rewards are often of relatively short duration, intrinsic rewards have a more lasting effect.

Based on the observations, the final research proposition is:

RP 5: The dominance of extrinsic motivation at the beginning of the course results in students being vulnerable to the perceived barriers and leads to perceived uncertainty that predominates the extrinsic drivers of EM and negatively affects students' EM.

6 Discussions and Conclusion

This study examines which factors influence students' entrepreneurial motivation during entrepreneurial education. The research question could be answered, and the existing addressed research gaps in this area could be filled. A theoretical framework based on numerous interviews was designed to close the research gaps. Based on this model, seven research propositions were developed that refer to the factors influencing intrinsic and extrinsic EM during EE.

6.1 Research Contributions

Our study makes several theoretical contributions. First, our research expands the understanding of which factors influence students' EM in the context of EE and how we distinguish between direct influences of intrinsic and extrinsic motivation and consider their dependencies. This has not been examined before in research.

Second, this study applied a qualitative research approach to gain a deeper understanding of students' EM in entrepreneurship courses and the dynamics of the phenomena. So far, there has been surprisingly less research on this issue applying qualitative research methods. Moreover, our studies' inductive approach reveals new relationships between EE, students' EM, and other contextual factors such as drivers and barriers. Based on this, a new and intuitive framework was developed that illustrates the complex phenomena and the interplay of factors influencing EM. Currently, no comparable framework exists that deals with the topic of EM in the field of EE in this depth. Therefore, our model helps researchers better understand the dynamics and differences in students' responses to EE and its implications on their EM. Furthermore, it highlights students'

complex and dynamic development and creation of EM over the entrepreneurship course while interacting with barriers and drivers.

Third, despite the emphasized importance of understanding the dimensions of students' intrinsic and extrinsic motivation in EE (Lemos & Veríssimo, 2014), there was a lack of studies examining students' intrinsic and extrinsic EM in the context of EE. Our research responds to this gap by examining students' intrinsic and extrinsic EM in entrepreneurship courses, thus gaining a deeper understanding of differences in students' EM. Therefore, our study contributes to the literature on EE by emphasizing the importance of understanding students' composition of initial EM and its interplay with contextual factors.

Fourth, numerous studies have examined the effect of EE on students' EM (Hägg & Gabrielsson, 2020). However, previous studies have produced contradictory and poorly explained results regarding the effects of EE on students' EM (Farhangmehr et al., 2016; Hsu et al., 2014; Oosterbeck et al., 2010; Solesvik, 2013; Sui et al., 2017). By identifying the initial and individual balance of students' intrinsic and extrinsic EM as a crucial factor in determining how students react to drivers and barriers and explaining how students' EM develops during the entrepreneurship course, our research explains the contradictory effects of EE on students' EM.

Finally, our study contributes to the scientific conversation about intrinsic and extrinsic motivation by understanding the interplay between intrinsic and extrinsic motivation as well as extrinsic drivers and barriers. Moreover, the findings highlight the importance of the initial balance of students' intrinsic and extrinsic motivation.

6.2 Practical Implications

In addition to numerous theoretical contributions, our study offers several practical implications. First, our findings make several practical contributions to universities, entrepreneurship educators, and program organizers. The results provide a better understanding of the drivers increasing students' EM and the perceived barriers decreasing students' EM during the course. Moreover, our study implies that it is essential for

these stakeholders not to take it for granted that EE increases students' EM. Instead, they need to be aware of differences in students' intrinsic and extrinsic balance as it determines how students react to drivers and perceived barriers and how their EM develops during the course. By understanding this interplay, entrepreneurship educators can specifically address the influencing factors, counteract the factors that students perceive as barriers, and enhance drivers to affect students' EM positively.

Furthermore, our findings help to understand the individualities in students' reactions to faced drivers and barriers during EE. This can help educators target students more effectively during the EE course to enhance their EM. For instance, our results revealed that educators can act as a driver for increasing students' EM and even help students decrease or overcome perceived barriers. Second, the study offers practical implications for students taking entrepreneurship courses. Our study suggests that students should deal with the influencing factors before attending entrepreneurship courses and take time to evaluate their balance of intrinsic and extrinsic entrepreneurial motivation. This will provide them an initial indication of how passionate and persistent they may be about the courses and starting a business.

6.3 Limitations

Our study has several limitations. First, the number of conducted interviews is limited to a number of 15. Furthermore, we conducted our study with students attending an EE course at the University of Bremen in Germany. Therefore, our findings are highly geographically focused and context-specific and offer limited comparability. Since the interviews only took place over two months, the study was also limited in time. Moreover, the length of the interviews was also limited. More extended interviews could provide more in-depth information, for instance, on intrinsic motivation and its associated values. It should also be noted that the interviewees' experiences date back to different periods of time. In addition, the interview partners have different levels of experience in EE. For instance, some have only completed a few modules, others just completed the courses, and others completed the module a long time ago. Furthermore, selection bias could not be eliminated

from this study as the study pays little attention to students' personal backgrounds and attitudes. Furthermore, our interviewees only include business students. Therefore, the findings could differ among students from other study programs, for instance, students with a technical background. Finally, our study is limited to the fact that it only focuses on the development of students' EM during the course and thus excludes the further development of the students' entrepreneurial actions after the entrepreneurship course.

6.4 Outlook

In order to overcome the limitations of this study, several opportunities for future research arise. Future researchers should conduct several studies in different regions with similar programs to further empirically validate the findings and make the results more generalizable. Moreover, we suggest that future researchers conduct further studies that also consider contextual differences to examine the role of contextual factors affecting students' entrepreneurial motivation in entrepreneurial education. Furthermore, future research should conduct more interviews and consider students' backgrounds and attitudes. These insights will help to better understand the origin of students' initial EM and their response to drivers and barriers. Hence, the developed framework could be further explored by examining the origin of the initial intrinsic motivation and how values and character traits essential to EM were developed in advance. Finally, future research could expand our study by exploring students' entrepreneurial activities after finishing the EE course in order to better understand how students' intrinsic and extrinsic motivation is related to later entrepreneurial actions. Therefore, a longitudinal case study could reveal new insights.

References

- Alberti, F., Sciascia, S., & Poli, A. (2004). Entrepreneurship Education: Notes on an Ongoing Debate. 14th Annual IntEnt Conference, July, 4–7.
- Bagheri, A., & Pihie, Z. A. L. (2015). Factors influencing students' entrepreneurial intentions: The critical roles of personal attraction and perceived control over behavior. *The International Journal of Management Science and Information Technology (IJMSIT)*, (16), 16-28.
- Baumeister, R. F., Tice, D. M. (1985). Self-esteem and responses to success and failure: Subsequent

- performance and intrinsic motivation. *Journal of Personality*, 53(3), 407-515.
- Bénabou, R., & Tirole, J. (2003). Intrinsic and extrinsic motivation. *The review of economic studies*, 70(3), 489-520.
- Brockhaus, R. H. (1980). Risk taking propensity of entrepreneurs. *Academy of Management Journal*, 23(3), 509-520.
- Brown, L. V. (2007). *Psychology of motivation*. Nova Publishers. Buzdar, M. A., Mohsin, M. N., Akbar, R., & Mohammad, N. (2017). Students' Academic Performance and its Relationship with their Intrinsic and Extrinsic Motivation. *Journal of Educational Research (1027-9776)*, 20(1).
- Cardon, M. S., Wincent, J., Singh, J., & Drnovsek, M. (2009). The nature and experience of entrepreneurial passion. *Academy of management Review*, 34(3), 511-532.
- Carsrud, A. Brännback, M., (2011). Entrepreneurial Motivations: What Do We Still Need to Know?. *Journal of Small Business Management*, 49(1), 9-26.
- Charmaz, K. (2008). „Grounded Theory as an Emergent Method“. *Handbook of Emergent Methods*, 155-172.
- Charmaz, K. (2014). *Constructing Grounded Theory*. SAGE.
- Charmaz, K., & Smith, J. (2003). Grounded theory. *Qualitative psychology: A practical guide to research methods*, 2, 81-110.
- Chowdhury, M. F. (2014). Interpretivism in Aiding Our Understanding of the Contemporary Social World. *Open Journal of Philosophy*, 04(03), 432-438.
- Cohen, S.G. and Bailey, D.E. (1997), “What makes teams work: group effectiveness research from the shop floor to the executive suite”, *Journal of Management*, 23 (3), 239-290.
- Dr. Md. Mahmood Alam. (2016). Constructivism: Paradigm Shift from Teacher Centered To Student Centered Approach. *International Journal of Indian Psychology*, 4(1). El Hussein, M., Hirst, S., Salyers, V., & Osuji, J. (2014). Using grounded theory as a method of inquiry: Advantages and disadvantages. *Qualitative Report*, 19(27).
- Engle, R. L., Dimitriadi, N., Gavidia, J. V., Schlaegel, C., Delanoe, S., Alvarado, I., He, X., Buame, S., & Wolff, B. (2010). Entrepreneurial intent: A twelve-country evaluation of Ajzen's model of planned behavior. *Team Performance Management*, 16(1-2), 35-57.
- Farhangmehr, M., Gonçalves, P., & Sarmento, M. (2016). Predicting entrepreneurial motivation among university students: The role of entrepreneurship education. *Education+ Training*, 58(7-8), 861-881.
- Farmer, S. M., Yao, X., & Kung-Mcintyre, K. (2011). The Behavioral Impact of Entrepreneur Identity Aspiration and Prior Entrepreneurial Experience. *Entrepreneurship: Theory and Practice*, 35(2), 245-273.
- Foo, M. Der. (2011). Emotions and Entrepreneurial Opportunity Evaluation. *Entrepreneurship: Theory and Practice*, 35(2), 375-393.
- Forsyth, D. R. (2019). *Group dynamics (7th Edition)*. Wadsworth Cengage Learning.
- Frank, A., & Schröder, E. (2018). *Gründungsradar 2018*. 60.
- Freiling, J., & Harima, J. (2019a). *Entrepreneurship: Gründung und Skalierung von Startups*. Springer Gabler.
- Freiling, J., & Harima, J. (2019b). Entrepreneurial Finance. In Freiling, J., & Harima, J. (Eds.), *Entrepreneurship: Gründung und Skalierung von Startups*. (pp. 295-340). Springer Gabler.
- Freiling, J., & Harima, J. (2019c). Entrepreneurial Marketing. In Freiling, J., & Harima, J. (Eds.), *Entrepreneurship: Gründung und Skalierung von Startups* (pp. 237-293). Springer Gabler.
- Gifford, W. E., Bobbitt, H. R., & Slocum, J. W. (1979). Message Characteristics and Perceptions of Uncertainty by Organizational Decision Makers. *Academy of Management Journal*, 22(3), 458-481.
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2012). Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology. *Organizational Research Methods*, 16(1), 15-31.
- Glaser, B., & Strauss, A. (1967). *The Discovery of Grounded Theory*. Aldine. Greene, F. J., & Saridakis, G. (2008). The role of higher education skills and support in graduate self-employment. *Studies in Higher Education*, 33(6), 653-672.
- Hägg, G., & Gabrielsson, J. (2020). A systematic literature review of the evolution of pedagogy in entrepreneurial education research. *International Journal of Entrepreneurial Behavior & Research*. 26(5), 829-861.
- Hasan, S. M., Khan, E. A., & Nabi, M. N. U. (2017). Entrepreneurial education at university level and entrepreneurship development. *Education+ Training*. 59(7-8), 888-906.
- Hedner, T., Abouzeedan, A., & Klofsten, M. (2011). Entrepreneurial resilience. *Annals of Innovation & Entrepreneurship*, 2(1), 7986-7990.
- Hennessey, B., Moran, S., Altringer, B., & Amabile, T. M. (2015). Extrinsic and intrinsic motivation. *Wiley encyclopedia of management*, 1-4.
- Honebein, P. C. (1996). Seven Goals for the Design of Constructivist Learning Environments. 9. Hou, F., Su, Y., Lu, M., & Qi, M. (2019). Model of the entrepreneurial intention of university students in the Pearl River Delta of China. *Frontiers in Psychology*, 10, 916.
- Hsu, D. K., Shinnar, R. S., & Powell, B. C. (2014). Expectancy theory and entrepreneurial motivation: A longitudinal examination of the role of entrepreneurship education. *Journal of Business and Entrepreneurship*, 26(1), 121-140.
- Hutagalung, B., Dalimunthe, D. M., Pambudi, R.,

- Hutagalung, A. Q., & Muda, I. (2017). The effect of entrepreneurship education and family environment towards students' entrepreneurial motivation. *International Journal of Economic Research*, 14(20), 331-348.
- Hytty, U., Stenholm, P., Heinonen, J., & Seikkula-Leino, J. (2010). Perceived learning outcomes in entrepreneurship education: The impact of student motivation and team behaviour. *Education+ Training*, 52(8), 587-606.
- Iakovleva, T. A., Kolvereid, L., Gorgievski, M. J., & Sørhaug, Ø. (2014). Comparison of perceived barriers to entrepreneurship in Eastern and Western European countries. *Int. J. Entrepreneurship and Innovation Management*, 18(2/3), 115-133.
- Jones, C., & English, J. (2004). A Contemporary Approach to Entrepreneurship Education and Training. *Education + Training*, 46(8/9), 416-423.
- Kaiser, G., & Presmeg, N. (Hrsg.). (2019). *Compendium for Early Career Researchers in Mathematics Education*. Springer International Publishing.
- Katz, J. A. (2003). The chronology and intellectual trajectory of American entrepreneurship education 1876-1999. *Journal of Business Venturing*, 18(2), 283-300.
- Kirkwood, J. (2009). Motivational factors in a push-pull theory of entrepreneurship. *Gender in Management*, 24(5), 346-364.
- Kuratko, D. F. (2005). The emergence of entrepreneurship education: Development, trends, and challenges. *Entrepreneurship theory and practice*, 29(5), 577-597.
- Lee, J., & Wang, J. (2017). Developing entrepreneurial resilience: Implications for human resource development. *European Journal of Training and Development*, 14(6), 519-539.
- Lemos, M. S., & Veríssimo, L. (2014). The relationships between intrinsic motivation, extrinsic motivation, and achievement, along elementary school. *Procedia-Social and Behavioral Sciences*, 112, 930-938.
- Liu, H., Kulturel-Konak, S., & Konak, A. (2020). Measuring the Effectiveness of Entrepreneurship Education. *Proceedings of the 53rd Hawaii International Conference on System Sciences*, 3, 4705-4714.
- Malebana, J. (2014). Entrepreneurial intentions of South African rural university students: A test of the theory of planned behavior. *Journal of Economics and behavioral studies*, 6(2), 130-143.
- McKelvie, A., Haynie, J. M., & Gustavsson, V. (2011). Unpacking the uncertainty construct: Implications for entrepreneurial action. *Journal of Business Venturing*, 26(3), 273-292.
- McMullen, J. S., & Shepherd, D. A. (2006). Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur. *Academy of Management Review*, 31(1), 132-152.
- Milliken, F. J. (1987). *Uncertainty*. Published by : Academy of Management. Linked references are available on JSTOR for this article : Three Types of Perceived Uncertainty About the Environment : State , Effect , and Response Uncertainty. *Academy of Management Review*, 12(1), 133-143.
- Mills, J., Bonner, A., & Francis, K. (2006). The Development of Constructivist Grounded Theory. *International Journal of Qualitative Methods*, 5(1), 25-35.
- Naffziger, D. W., Hornsby, J. S., & Kuratko, D. F. (1994). A proposed research model of entrepreneurial motivation. *Entrepreneurship theory and practice*, 18(3), 29-42.
- Nawaser, K., Khaksar, S. M. S., Shaksian, F., & Afshar Jahanshahi, A. (2011). Motivational and Legal Barriers of Entrepreneurship Development. *International Journal of Business and Management*, 6(11), 112-118.
- Neck, H. M., & Corbett, A. C. (2018). The scholarship of teaching and learning entrepreneurship. *Entrepreneurship Education and Pedagogy*, 1(1), 8-41.
- Oosterbeek, H., Van Praag, M., & Ijsselstein, A. (2010). The impact of entrepreneurship education on entrepreneurship skills and motivation. *European economic review*, 54(3), 442-454.
- Pittaway, L., & Cope, J. (2007). Entrepreneurship education: A systematic review of the evidence. *International Small Business Journal*, 25(5), 479-510.
- Rahmawati, F., Hasyiyati, A., & Yusran, H. L. (2012). The obstacles to be Young Entrepreneur. *The 2012 International Conference on Business and Management*, 6-7.
- Reeves, P. M., Zappe, S. E., & Follmer, D. J. (2019). A Comparison of the Types of Problems Encountered by Entrepreneurial Students and Successful Professional Entrepreneurs. In *Entrepreneurship Education and Pedagogy* (Vol. 2, Issue 3).
- Rembiasz, M. (2017). Student entrepreneurship – research on development. *MATEC Web of Conferences*, 12015, 1-8.
- Ruef, M., Aldrich, H. E., & Carter, N. M. (2003). The Structure of Founding Teams: Homophily, Strong Ties, and Isolation among U.S. Entrepreneurs. *American Sociological Review*, 69(2), 195-222.
- Sandhu, M. S., Sidique, S. F., & Riaz, S. (2011). Entrepreneurship barriers and entrepreneurial inclination among Malaysian postgraduate students. *International Journal of Entrepreneurial Behaviour and Research*, 17(4), 428-449.
- Shah, I. A., Amjed, S., & Jaboob, S. (2020). The moderating role of entrepreneurship education in shaping entrepreneurial intentions. *Journal of Economic Structures*, 9(1).
- Shambare, R. (2013). Barriers to Student Entrepreneurship in South Africa. *Journal of*

- Economics and Behavioral Studies, 5(7), 449–459.
- Shane, S., Locke, E., Collins, C., (2003). Entrepreneurial Motivation. *Human Resource Management Review*, 13(2), 257-279.
- Shirokova, G., Osiyevskyy, O., Morris, M. H., & Bogatyreva, K. (2017). Expertise, university infrastructure and approaches to new venture creation: assessing students who start businesses. *Entrepreneurship and Regional Development*, 29(9–10), 912–944.
- Smith, K., & Beasley, M. (2011). Graduate entrepreneurs: Intentions, barriers and solutions. *Education and Training*, 53(8), 722–740.
- Solesvik, M. Z. (2013). Entrepreneurial motivations and intentions: investigating the role of education major. *Education+ Training*, 55(3), 253-271.
- Stamboulis, Y., & Barlas, A. (2014). Entrepreneurship education impact on student attitudes. *International Journal of Management Education*, 12(3), 365–373.
- Stipek, D. J. (1993). *Motivation to learn: From theory to practice*.
- Støren, L. A. (2014). Entrepreneurship in higher education: Impacts on graduates' entrepreneurial intentions, activity and learning outcome. *Education+ Training*, 56(8-9), 795-813.
- Strauss, A., & Corbin, J. M. (1997). *Grounded Theory in Practice*. SAGE.
- Su, X., Liu, S., Zhang, S., & Liu, L. (2020). To be happy: a case study of entrepreneurial motivation and entrepreneurial process from the perspective of positive psychology. *Sustainability*, 12(2), 584-611.
- Sui, F. M., Chang, J. C., Hsiao, H. C., & Su, S. C. (2017). A study on entrepreneurial education regarding college students' creative tendency, entrepreneurship self-efficacy and entrepreneurial motivation. In 2017 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM) (pp. 850-854). IEEE.
- Timmons, J. A., & Spinelli, S. (2009). *New Venture Creation, Entrepreneurship for the 21st Century* (8th editio). McGraw-Hill Higher Education.
- Varamäki, E., Joensuu, S., Tornikoski, E., & Viljamaa, A. (2015). The development of entrepreneurial potential among higher education students. *Journal of small business and enterprise development*.