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**Influence of Academic, Socioeconomic, Psychological, Technological and
Entrepreneurial Factors in the Entrepreneurship Culture of International College
Students in Canada**

Authors

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INFLUENCE OF ACADEMIC, SOCIOECONOMIC, PSYCHOLOGICAL, TECHNOLOGICAL AND ENTREPRENEURIAL FACTORS IN THE ENTREPRENEURSHIP CULTURE OF INTERNATIONAL COLLEGE STUDENTS IN CANADA

Abstract

This study aims to explore the influence of academic, socioeconomic, psychological, and technological and entrepreneurial factors that influence the entrepreneurial culture factors of Confederation College students at the Thunder Bay Campus, Canada. The study was applied through the qualitative method through in-depth interviews with students selected at convenience for this study. The data collected through this research was processed through the NVIVO software version 14.23.1. The evidence indicates the advantages and limitations that international students have regarding their possibilities of starting their own businesses and starting in the world of entrepreneurship. This empirical study allows us to know in an updated way the conditions of the students considering their condition as local and international students, in addition to the post-covid economic situation that countries are facing.

Keywords: college students, culture, entrepreneurship, undergraduate, motivation, higher education, Canada

Introduction

Canada is considered one of the first world countries according to their socioeconomic development and life quality. Studies carried out previously conducted in this country explained how at the level of university student entrepreneurship there a large workforce is implemented, this allows to increase the level of entrepreneurship and the economic activation of the country (Graham & Pottie, 2022).

Dawson et al. (2013) were the first group of professionals who studied the entrepreneurial spirit in Canada through the Global University Entrepreneurial Spirit Students Survey or GUESSS study at Concordia University and John Molson School of Business. Their results suggest that males are most likely to start a business, the students are looking to get exciting jobs and get involved with environmental commitment in their entrepreneurial journey.

Also, entrepreneurial activities in Canada are based in basic research with objectives as entrepreneurial consulting, group research and academic publications (Yu et al., 2022). Mentioned that, if students have entrepreneurial ideas involving commercial or social value, they will put their effort to get innovations in their ideas to collaborate with society.

However, it is important to highlight that some of the entrepreneurship studies developed previously showed how training and knowledge regarding entrepreneurship is vital for students to find the motivation to start their own businesses (Al et al., 2020). Other important factors to consider when it comes to entrepreneurship is that during the academic training students have received courses related to entrepreneurship and business (Abalala, 2018).

As part of training college students in entrepreneurship is to provide them with equal opportunities (Zhang et al., 2014; Maya & Tigselema, 2017) such as making them live experiences and attitudes (Diaz Bretones & Radrigán, 2018) with the objective of providing them with an environment with entrepreneurial potential (Wennberg et al., 2016). There are also other important individual and general environmental factors that need to be incorporated into each of the university ventures (Bergmann et al., 2016).

So, the involvement of universities lies in developing the intentions, skills and entrepreneurial spirit of students in order to encourage them to become entrepreneurs (Franke & Lüthje, 2004). The recommendation by Fetters et al. (2010) is that elements of entrepreneurship should be implemented as part of the academic training of students in order to have a positive impact on society.

For example, Quispe et al. (2022) studied with 290 college students, the 65,2% highlight the importance that college students consider about creating an entrepreneurship culture, developing skills for it and recognizing the abilities and characteristics of each student.

On the other hand, Belás et al. (2017) studied 568 students at 8 different universities in Slovakia, of which the majority stated that they agreed that student enterprises should be supported by the government with the aim of making them grow. However, they also discovered that the desire to undertake will vary considerably from one institution to another.

To finish, understanding the university environment by (Herrera -Valverde et al., 2020) who expresses it as a potential business ecosystem where important characteristics that are part of the system related to academic programs, curricular and extracurricular activities, responsibilities can be found, administration of financial resources, incorporation into global social connections, interaction with both organizational and technological infrastructures. Business environments create direct spaces for the development of knowledge and skills that enhance student performance during their development (Robinson & Sexton, 1994; Zhao et al., 2005).

In addition, Ferreira et al. (2017) concluded that students are potential entrepreneurs due their high motivation because they will be able to apply the knowledge and skills acquired during their careers. So, Belás et al. (2017) remarks that it is important to analyze the global environment of the students to understand institution and state support, propensity for entrepreneurship, family environment, financial plans, positive and negative impacts during their process.

If students have any business idea, they might prepare in fields related to business (Wang et al., 2022) as well as Gedeon (2017) which emphasizes that in Canada are entrepreneurial courses to students funded by the Ontario Ministry of Education oriented to develop personal entrepreneurship in knowledge, skills, and attitudes.

As well as Graham & Pottie (2022) who remarked that international students are an important category in Canadian universities of potential entrepreneurs due to the campus that provides entrepreneur education, training, encouragement, and emotional support.

All of the above lead us to analyze how academic, socioeconomic, psychological, and technological factors influence the entrepreneurial culture of Canadian college students,

which means that it is relevant for college actors and the academic sector that promote entrepreneurship. With the purpose of exploring the influence of academic, socioeconomic, psychological, and technological factors that influence the entrepreneurship culture factors of Canadian college students. So, the research question that we ask ourselves is: how do academic, socioeconomic, psychological, and technological factors influence the entrepreneurial culture factors of international students?

The following study is structured in the following sections. Section 1 provides an introduction to the study and the main details that are going to be studied. Section 2 presents the arguments that support the proposals of the study with Knowledge Gaps, research question, theoretical background and hypothesis, Section 3 includes a description of the empirical method and how the study was developed. Section 4 presents the results of the study, and the final section synthesizes and discusses the main findings and describes their practical implications and future lines of research.

Theoretical Background

The literature has confirmed that there are different factors related to universities that can motivate, influence and trigger actions for the creation of entrepreneurship by college students (Bergmann et al., 2016; Holienka et al., 2017). Which in turn Miller & Acs (2017) define it as a present ecosystem. The common purpose according to Moraes et al. (2018) focuses on encouraging entrepreneurship in which students are characterized by having attitudes and skills related to planning, leadership, and innovation.

Some of the studies conducted previously indicate that based on the results obtained, the intentions of college students, the experience they have, and their interests can be identified. They also mention that these studies contribute to knowing what is currently happening in the institutions and knowing if students are really being stimulated at the level of entrepreneurial culture (Ferreira et al., 2017).

Likewise, Çolakoğlu & Gözükara (2016) indicated in their study in the city of Istanbul in Turkey that one of their results in the study was to know that students who are willing to undertake are also more attentive to details, new business trends and they seek innovation. Next, we will focus on the key constructs for this research.

Academic Factors

Academic factors can be defined by McKenzie & Schweitzer (2001) who get involved with the study as factors such as: university entry score, study skills, satisfaction with their institution and career orientation. The real importance of these factors before the phenomenon of entrepreneurship is because Gómez et al. (2011) said that a good educational

process improves the student performance to increase the development of learning including satisfaction and keep students active in their educational process.

One of the clear examples was given by Vargas (2007) who said that investigating students allows us to know their individual performance and to know the quality they are having in their higher education institutions. It was mentioned that these factors can determine the success factors in students, Vargas (2007) considers that it is necessary to study the personal, social, and institutional variables that are part of the students' training.

As well as Bruner (2003) who mentioned by Casillas et al. (2016) and highlights the generational change present in education where to generate knowledge, create digital content, instruct, and disseminate drastically changed compared to traditional methods.

Additionally, another study said that teachers must have the necessary knowledge related to entrepreneurship to guide students in an integral way, adding value to their experience as entrepreneurs, encouraging them in the process. According to Sanchez et al. (2017) this business education must be based on contemporary pedagogies such as learning where problems are solved, projects are created where methodologies must be implemented, and teamwork is carried out.

The foregoing indicates that one must be clear when studying the academic environment as they are key to discovering what are the triggers for the behavior and entrepreneurial intention of college students (Pinheiro et al., 2022). The concept of multidisciplinary knowledge was decisive during their study since it allows entrepreneurs to have the ability to develop capital and at the same time be guided to acquire better financing and be investors themselves Parekh & Attuel (2022).

All the above allows us to make the following proposition:

PI: Academic factors positively affect the entrepreneurship culture of international college students.

Socioeconomic factors

To define the socioeconomic factors, Garbanzo (2014) must be considered because he indicates that the demographic variable of a person's socioeconomic level is considered different in each country. The importance marked in this context is because in previous studies Armenta et al. (2008) and Tarapuez et al. (2018) mentioned socioeconomic factors as the economic dependence of college students from parents, partners or if they are totally independent. This includes factors like job experience, friends and family influence, social stratum, parental schooling, and motivations (Tarapuez et al., 2018).

Armenta et al. (2008) mentioned that it is important to know if students are living with their parents, partners or alone, economic dependence, individual monthly income, if they are currently working and their personal motivations to starting a business.

While social groups are part of the social environment and motivate entrepreneurship (Autio & Wennberg, 2010). The entrepreneur also seeks to be approved in his social environment as this will constantly develop his entrepreneurial intention (Caro et al., 2017), encourage him to explore new experiences (Do & Dadvari, 2017) and strive for his aspirations (Holienska et al., 2017). With this, Liñán & Chen (2009) exposed that the social environment is indispensable for entrepreneurship creation, as well as each entrepreneur's own personal networks.

In fact, the educational context is fundamental for social environment and entrepreneurship (Cho & Lee, 2018), where innovation and problem-solving agility are key characteristics that a leader must have (Pittino et al., 2017). Also, models of entrepreneurial behavior influence venture creation (Abbasiachavari & Moritz, 2020), specifically models that relate to social, environmental, and stereotypical environments within each model.

Thus, college students will be directly affected by the social context during the creation of their enterprises. The example of Diaz & Radrigán (2018) who in their study saw how Spanish students were more affected by social and family factors compared to other students. As well as Pruett et al. (2009) who studied American, Spanish, and Chinese college students demonstrating the great participation of social factors in entrepreneurship.

The aforementioned allows us to make the following proposition:

P2: Socioeconomic factors positively affect the entrepreneurship culture of international college students.

Psychological factors

The psychological factors are defined McKenzie & Schweitzer (2001) and Iglesias & Vera (2010) remarked in their studies as their studies about psychological factors: Integration, commitment, depression, anxiety, stress, self-efficacy, listed self-esteem, emotional intelligence, family cohesion, Study habits, academic performance as important psychological factors for college students.

The literature has mentioned, for example, how planned behavior consists of motivating people to perform certain actions (Ajzen, 1991). For example, the experience of the person as well as their exposure to certain situations and environmental effects are factors that will develop and influence the entrepreneurial attitude of each person (Krueger & Kickul,

2006). In addition, the entrepreneurial attitude is closely related to the desire to improve by being afraid of failing or failing to undertake in turn, the purpose is to seek opportunities, develop skills and generate knowledge for personal growth (Bosma & Schutjens, 2011).

This leads to the following proposition:

P3: Psychological factors positively affect the entrepreneurship culture of international college students.

Technological factors

Both Jiménez et al. (2020) and Casillas et al. (2016) consider technological factors as the abilities to devices like tablets, cellphones, computers, laptops as well as the digital platforms as digital system management, digital content management, communication and socialization in digital environments, and information management.

Within context it is clear due to previous studies by Casillas et al. (2016) that part of the performance will also depend on education and technological resources to create a better learning process and increase the academic performance of students. Taking into consideration De Silva (2020) who identified factors as technology access, innovation, entrepreneurship education and institutions support as part of the most positive factors related to college students.

For instance, Rua (2015) deduced that the analysis of technological capabilities allows opening the way for the development of innovation through the exploitation of available technological resources.

Additionally, Siegel (2005) reviewed the literature on university technology transfer to suggest institutions to address skill deficiencies in technology offices having reward systems, and education/training for faculty members, post-docs, and graduate students relating to interactions with entrepreneurs to enhanced entrepreneurial activity.

To conclude, as well as Morales et al. (2021) who indicates that an in-depth analysis must be carried out regarding the terms that are associated with technological education in educational institutions since there are always new findings regarding the subject without forgetting that the three most important terms are appropriation, competence and digital skills.

An extra study showed that some of the business skills that students can be related with are ICT information technologies, languages, entrepreneurial culture, and interrelationship in society are mentioned in Alemany & Álvarez 2011 by Rodriguez & Chávez (2015).

Due to the information previously analyzed the following proposition is presented:

P4: Technological factors positively affect the entrepreneurship culture of international college students.

Entrepreneurial factors

First, entrepreneurial culture is defined by Borrayo, Zepeda & Melgarejo (2019) and Briasco (2016) as all those actions and facts that make individuals or groups be part of an individual, social or business change in the environment with entrepreneurial mentality, values, and willingness to take risks to carry out goals. Entrepreneurial culture has subfactors related to entrepreneurship education with entrepreneurial factors like mindset, motives, orientation, proactiveness and risk taking (Afriyie & Boohene, 2014).

In addition, Vican & Luketie (2013) mentioned by Ornelas et al. (2015) demonstrated how the entrepreneurial culture depends too on the childhood received and the perception that they have from their parents because if the parents are entrepreneurs, they will try to do the same creating their own companies. Self-confidence, emotional self-efficacy, innovative behavior, leadership, achievement motivation, proactivity and tolerance to uncertainty are indispensable entrepreneurial factors (Ornelas et al., 2015).

In addition, Ronstandt (1985) mentioned by Rodríguez (2011) and Briasco (2016) are agree that entrepreneurship is related with entrepreneurial competencies that make an individual capable of developing a business with success facing the difficulties that may be present during the process and always looking for opportunities with analytical capabilities. In fact, this is important because university institutions find a way to incorporate entrepreneurship as a significant method during the learning process (Jones et al., 2021).

To conclude Bilbao & Pachano (2002), has reinforced that the development and implementation of strategies and capacities in people to create better entrepreneurs represents a great challenge. It is necessary to implement courses related to finance, management and motivation to strengthen entrepreneurship by creating ideas through acts (Hinojoza et al. 2009).

The previous theory allows to set up this proposition:

P5: The factors of the entrepreneurial culture directly influence the desire to undertake in college students.

Methodology

This was a qualitative study defined by Martínez (2018) who explained that the qualitative study arises from subjectivism and the main purpose in this type of research was to understand how humans interpret and face everyday situations. Hernández-Sampieri et al. (2014) defined the qualitative study as the analysis of data to answer and create new questions about different situations according to factual factors and interpretations.

This study was carried out based on the qualitative method (Creswell, 2014), where the collection was carried out using the technique. The scope of the research, which would be descriptive, is also used in which Sousa et al. (2007) indicated that for this type of research it is necessary to observe, describe and substantiate through different factors or determinants of the subject. Henderson et al. (2015) indicated that the correlation between the cause and the effect of the phenomenon should be sought.

The study was related to academic, psychological, socioeconomic, and technological factors about entrepreneurial culture in university and post-secondary students in Canada. The main interest is to know the entrepreneurial culture and environment that students might be facing in the desire to start a business in Thunder Bay, Ontario, Canada. The research took place during the first semester of 2023.

To motivate the international students to participate in the study, the sponsorship was received from Northwestern Ontario and includes 17 gift cards to use in different stores. The gift card assignment was given through the Northwestern Ontario Innovation Center and in turn each of the depth interviews sessions were recorded for purposes of transcription, clarity, backup, and support during the study.

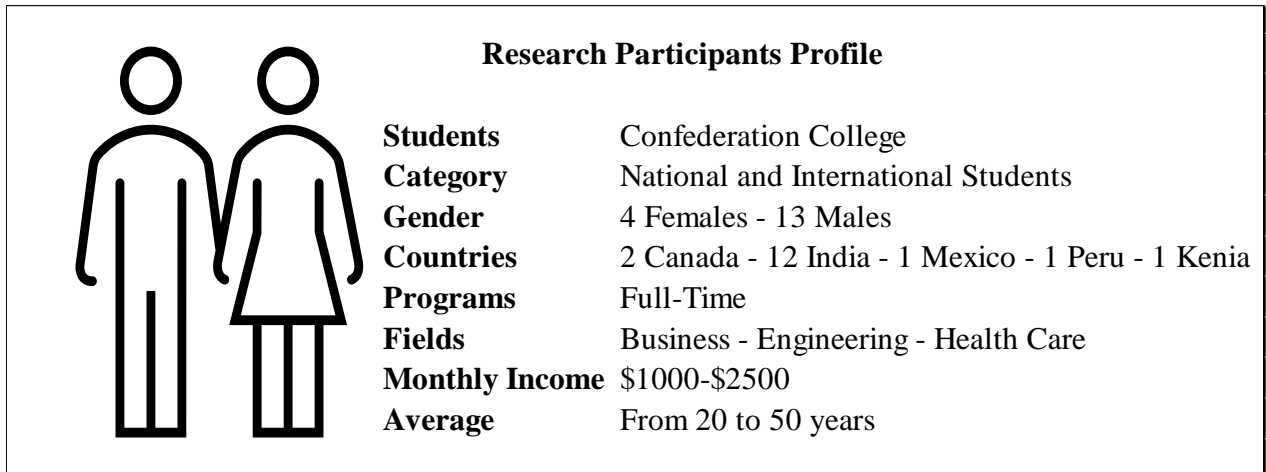
Participants and sample

The research was focused on students who are studying their 1-2 years programs at Confederation College, and they might will be entering into the Canadian labor market. The details of the participants were analyzed by nationality, age, gender, programs, among other characteristics. The selected sample was a total of 17 students divided into in- depth interviews sessions in person at the Landing Room in the Northwestern Innovation Center.

Participants self-selected as a sample was used with the aim of achieving high performance throughout the development of the study. The sample in this study allowed for meaningful and equal participation level and student level. The participants, being college students, are between 20 and 40 years old and belong to careers in different areas such as business, health care, technology, and engineering. Through interviews it was possible to get a better exposition about students' opinions and all the experiences that they had in the past as well as their future goals and perceptions. Also, it is important to notice in the following figure 1 details the profile of the sample for this study.

Figure 1

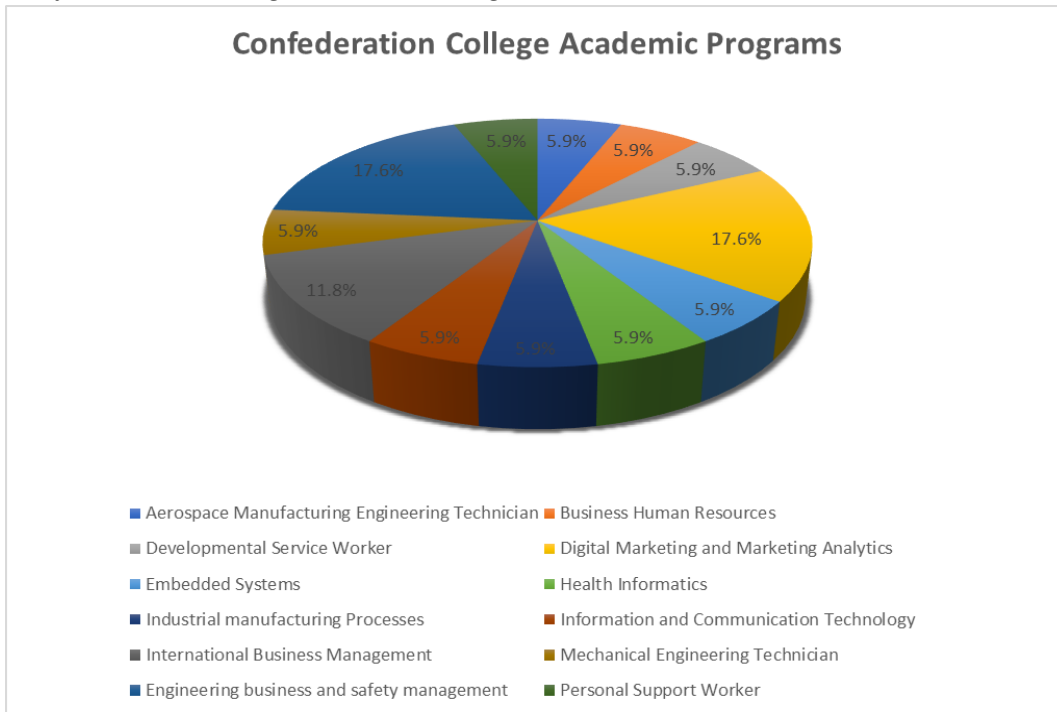
Profile of the participants



Additionally, the following figure 2 Confederation College Academic Programs shows the majors that were chosen by the Confederation College students who participated in the study.

Figure 2

Confederation College Academic Programs



Note: The chart shows the elements selected for the recruiting and selection process of the participants to develop the study.

Constructs

Regarding the constructs, "Entrepreneurial Culture" was investigated through the following questions:

At first, Academic Factors constructs were measured through the following open questions: 1) What program are you in, and why did you choose that program? and 2) Do you think that the entrepreneurship resources offered on your campus would give you any advantages as a graduate of this program?

Secondly, the Psychological Factors constructs were measured with the following open questions: Are there any factors in your social group that might influence you to choose entrepreneurship as a career? If so, what are they?

The third construct Socioeconomic Factors were measured with the following open questions: Do you undertake any entrepreneurial work to support yourself as a student? If so, what?

After that the construct Technological Factors were measured with the following open questions: Do you think that your skill level with respect to using technology and the technology resource that you have available to you would be enough to help you if you were to choose entrepreneurship as a career? If so, in what ways? If not, what would the gaps be?

The construct Entrepreneurial Factors were measured with the following open questions: 1) When you think of entrepreneurship, what comes to mind? 2) Is it appealing as a career choice? Why or why not? If so, what would motivate you? 3) If not, what are the barriers that you perceive? 4) What resources on your campus are you aware of that could help prepare students for a career as entrepreneurs? What are your perceptions of these resources?

All constructs following the purpose and method proposed in this study. Additionally, as control constructs, the country, age, career were used. The selection of control constructs responds to the relevant relationships between independent and dependent constructs as described in the literature on entrepreneurship.

Data collection process

The data collection process took place through in-depth interviews in English language at Northwestern Ontario Innovation Center in which different questions were raised with the factors established for this study. The participants have voluntarily and freely accepted to participate in the study and signed informed consent documents. As well as the data privacy was explained, and they received a guide used for the interview that will be presented in the appendix section of this document (Appendix - Interview Guide -Exploring factors which

influence post-secondary students to Engage in Campus Based Entrepreneurship Offerings: A Qualitative Study). In addition, having the condition of measuring the incidence of the different factors, no answer was considered correct or incorrect so that the students had the freedom to answer. The participation of the subjects of information was coded with the sequence of the alphabet, using capital letters according to the number of participations.

The conclusions are presented in a generalized and anonymous way and protect the identity of the participants to respect their participation, ethical regulations and in turn be precise with the measurement objectives of this study. Mentioning as an important part the respect during the interactions of each of the individuals and their opinions and personal experiences for one of the sections.

The collected data was processed through a software called NVivo. This software is a qualitative and mixed methods data analysis tool used to get insights of the data information and find a way to get as many details as possible to provide clear evidence of results and get to the most important details about the data collection. Using this tool, the found results were defensible and backed with real information and perceptions in the study.

After the data collection it was necessary to get proper transcripts about each session to get all the necessary details from the participants. At this point all the material was imported to the software NVivo 14.23.1 to be explored and analyzed. The next process was to code the data of each transcript in an appropriate way according to the study querying and reflecting the objectives and accuracy of the project.

The result was to visualize an overview about the study and was coded according to the studied factors and the most important points of the discussions. This methodology has been used in previous studies (Bolaños & Viquez, 2021; Medal, 2020; Mora et al., 2018).

Data Analysis

Thematic analysis (Braun & Clarke, 2006) was adapted for this study, employing the following procedures. Firstly, interviews were transcribed using Zoom transcription features, and the researchers downloaded and familiarize themselves with the transcripts. Secondly, an initial set of inductive codes was generated. Thirdly, the inductive codes were compared with the themes outlined in the initial coding framework, generated from the themes discussed in the theoretical review. Fourthly, the themes were developed and subjected to analysis. A directed approach was employed for content analysis (Hsieh & Shannon, 2005) to expand upon existing theory and gain a better understanding of each factor. The coding process was carried out using NVivo 14. The authors name in the transcripts as (AAA) refers to Allison Arias Alvarado and (MD) which means Michael Doha conducted the coding and resolved any conflicts through discussion. Finally, the participants were invited to provide

feedback on the final report to enhance the credibility of the findings, and only minor issues were addressed.

Results

The results obtained in this investigation are detailed below, the tables of results show the prevalence of the themes throughout the group of participants. These themes are described below, and the absolute frequency shows the number of times that each factor were mentioned during the study and the relative frequency shows the percentage accuracy according to the factors of each category.

Table 1.

Prevalence of themes during the data collection

Studied Factors	A1	B2	C3	D4	E5	F6	G7	H8	I9	J10	K11	L12	M13	N14	O15	P16	Q17	TOTAL
Academic Factors																		
Innovation Office	x	x	x	x	x	x	x	x	x	x	x	x					x	13
Programs	x		x	x	x	x	x	x	x	x	x	x		x		x	x	14
Student Support				x	x	x	x			x		x				x	x	8
Socioeconomic Factors																		
Political Influence	x			x			x					x	x					5
Professional and Personal Influence	x			x				x	x		x	x				x	x	8
Social Network	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17
Psychological Factors																		
Fear	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17
Motivation	x				x	x						1						3
Technological Factors																		
Gaps	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	16
Resources																x		1
Skills	x		x				x		x		x	x	x	x		x		9
Entrepreneurial Factors																		
Autonomy	x	x	x	x	x	x	x	x	x	x	x	x	x			x	x	15
Financial Resources					x	x		x								x	x	5
Risk in Barriers	x	x		x		x	x		x	x	x	x				x	x	11
Success		x	x		x		x	x	x	x	x	x	x			x	x	12

Academic Factors

The following themes were identified pertaining to academic factors: *Innovation Office*, *Programs*, and *Student Support*. This includes topics like satisfaction with the institutions and professional orientations Table 2 shows the prevalence of these themes throughout the dataset.

Innovation Office

Most of the students mentioned that as international students they didn't know anything about the Innovation Centre or about the resources that they have available for the different careers and students' interests. One of the main concerns was that they don't know about most of the resources available for them. They did not know how to get the access to them or if they were eligible to apply for it. Also, students mentioned that sometimes they don't have enough time to explore these places and that makes it more difficult to get the knowledge and resources.

Programs

Students provided their answers expressing that they got enrolled at the college to get a diploma or postgraduate certificates, get studies and experience and be part of the Canadian labor force market receiving better employment offers, improve their professional careers, and create a path for their personal interests and fields. Some of the students mentioned that they chose their programs according to the opportunities and resources that they had at that time to reduce their gaps, increase their skills, get experience in real cases scenarios as well as follow their passions and support their previous undergraduates' programs. Currently, students are focused on their studies before deciding to start with a business idea to be able to get all the skills and experience required.

However, students expressed that there is not a specific program for entrepreneurship. The most similar programs are business programs, but they have their specific field and might have courses to influence entrepreneurship but not focus on it. Undoubtedly students are waiting to complete their academic programs to have a point of view and evaluate the knowledge that they got.

Students Support

Initially participants mentioned that Co-Ops experience let them get experience in different fields and aspects that make them grow professionally, these opportunities can be through the college or contacts by the Innovation Centre. Similarly, both institutions provide similar resources about entrepreneurial events, career opportunities, and meeting rooms.

Students added that their lives include handling schools, regular jobs, start ups if they have, families and their personal life. So, their time limitations are significant, but they know that

if they look for help, they will get support. In addition, it is more profitable for students to get updates, advertisement, and activities from these institutions on their official courses and campus and they expressed that they might need to receive help directly from consultants and mentors to allow students to create their businesses with the resources that they required

Table 2.

Prevalence of themes related to Academic Factors

Construct	Sub-Construct	Construct Definition	Absolute Frequency	Relative Frequency	Representative Quote
<i>Academic Factors</i>	Innovation Office	For the opinions from the students related to the different resources at the Confederation College and the Northwestern Ontario Innovation Centre as those are the places where students spent most of their time due to academic responsibilities.	51	52%	<p>“We have the student success for career choices, we don’t have any knowledge about that, but we have resources at this site that we have in the student campus are like in the main building we have student success...” (K)</p> <p>“I’ve seen the sign for the Innovation Center, but advertising, that’s about it. I had to use Google Maps, so I knew where to come, but other than that, I never even knew that the Innovation Center was open or where exactly it was located. (K)</p>
	Programs	Participants belong to different study fields at Confederation College such as business, engineering, and health care.	33	34%	<p>“... So, I’m currently enrolled in information and communication technology solutions for business ... is the entire infrastructure to deploy and use that software in a company ... I could work in a better position in multinational companies ... enhance my employability on certain levels...” (C)</p> <p>“I’m in digital marketing at Confederation college. I choose that because it’s something that ... I have experience, and I think that having these lessons or this program will help me to open doors will help me to open doors in this Canadian market ...” (I)</p>
	Student Support	This included the student support or resources that they can reach out from the Confederation College and the Innovation Centre in case they need any help in academic, socioeconomic, and entrepreneurial aspects.	14	14%	<p>“We have been fortunate to have an Ontario innovation center where we always come up with an idea and talk to people, and they can tell me whether this is going to work out or not, or if they have past experiences with this idea, and they can give me a real-life example...” (P)</p>
	Total			98	100%

Socioeconomic Factors

The following themes were identified pertaining to Socioeconomic Factors: Political influence, Professional and Personal Influence and Social Network. Table 3 shows the prevalence of these themes according to the data analysis.

Political Influence

Participants were honest saying that as students and future entrepreneurs they don't know anything about Canadian laws, regulation, or correct processes to follow to set up a business. This problem might result in problems for the students with governmental institutions or failure in their projects. In the same way, students have their personal reasons and interest to create businesses in Canada, mentioning the idea of impacting society providing employment and economic growth using their business ideas and small businesses to provide opportunities in small towns and communities in different fields.

Professional and Personal Influence

First the study shows that if they create a business, it might not be related to their families' businesses, and they would look to create new businesses with new ideas. Students recognize that they look for social groups when they are afraid of taking actions or important decisions as they do not want to make any wrong decisions. Also, students are looking to network with people with the same mindset, people willing to meet, collaborate, create, and work with. Platforms for networking might not be the best one as the contacts of the emotional connection might be difficult to establish business connections with relevant people as they are in apps and not in person.

Social Network.

Students mentioned the high influence that they got from their families as they grew up with their members and they got positive and negative influence and experience from them related to entrepreneurship. Some families preferred to work in the regular labor force, some of them do not like how entrepreneurs' life works, some families tried to have businesses and they got a huge loss, and some families were successful enough to live from their business and make it grow. Friends are another important group where students spend most of their time and get different opinions and some friends already have their own business. They also have the academic social group where professors, classmates and faculty staff inspire students to become entrepreneurs as soon as they feel ready for it.

Table 3.

Prevalence of themes related to Socioeconomic Factors

Construct	Sub-Construct	Construct Definition	Absolute Frequency	Relative Frequency	Representative Quote
Socio-economic Factors	Political Influence	Political Influence refers to the position of the students related to political and social position as part of Canadian society. Both international and local students must follow and abide by the laws of the country, taxes, regulations, and duties as citizens and residents.	3	5%	<p>“I feel I am not familiar with Canadian laws and rules and regulations, but I hope it is a little more transparent for everybody when it comes to, you know, opening a business, whether it's international or it's a local person”. (P)</p> <p>“...Entrepreneurship is like, owning something myself, creating employment for people, creating a business, and you know, creating an impact on the society about the burning problems like I'm into the health implements”. (P)</p>
	Professional and Personal Influence	Professional and personal influence are focused on the influence of different external social groups looking to get more connections as social beings and future entrepreneurs and an overview about what students need from other social groups.	15	25%	<p>“I truly hope that I can get support from the group that I interact with... If I offer a service, maybe those people can buy my service. So, I hope, I really hope things work out and I could get support”. (G)</p> <p>“Yeah, it's up to you because It's the only way of making more money ... you also have a certain family background ... So, you need to rise from that... get a good amount of money that can help you in your family”. (N)</p>
	Social Network	In the Social construct it includes the influence that students receive from their closest social groups in their daily routines. So, it's focused on the professional groups of the student that includes work team, Academic team and personal groups as families, partners, friends	41	69%	<p>“I started working as an entrepreneur as my boss and I observed him like he's working so hard, and I'll also get by his skills, his talent, so he motivates me to do entrepreneurship”. (K)</p> <p>“No family, as not my family doesn't talk a lot about entrepreneurship. However, they do give in a little bit of ideas ... like if you have this, how would you go about it? It wouldn't be in terms of entrepreneurship specifically”. (Q)</p>
	Total			59	100%

Psychological Factors

Psychological Factors themes like: Fear and Motivation are explained in Table 4 which shows the prevalence of these themes after the data collection. These categories are divided into big fields according students' perceptions about integration, commitment, emotional self-efficacy, emotional intelligence, family influence, study habits, academic performance as important psychological factors for university students.

Fear

Students said that they are afraid of failure and face to face risk and losses by the end as they don't have a lot of resources or capital to cover any inconvenience. They also mentioned that entrepreneurship is overwhelming for any beginner. Some other students don't consider them as creators as they might feel insecure for lack of understanding how business works in real life. Students handle negative perceptions and experiences from the past.

Motivation

Students' opinions were different, taking some aspects as the objective to grow a business and generate revenue helping themselves and the environment. Some students are looking to get money, success, and power. Other students are motivated to undertake and have businesses in Canada or in different countries. Students get their motivation by their technological skills and resources as well as their desire to be independent and autonomy to establish relationships with people that already have a person. Other motivations that students have are the examples of their bosses as entrepreneurs.

Table 4.
Psychological Factors Construct

Construct	Sub-Construct	Construct Definition	Absolute Frequency	Relative Frequency	Representative Quote
Psychological Factors	Fear	People can feel insecure when they are betting on a proposal or if they are just starting a new project as they don't know how to set their expectations and that was the fear analyzed during the study to know the student perspective about fear feelings.	8	19%	<p>".... It's too hard and risky, and I'm not that confident going into that... It's like my whole perception on business is like it's all about luck. That's how I think about it. I'm not sure if it's 100% guaranteed success or not". (E)</p> <p>"So, I never had any positive things about business going on My family right now, especially my dad and everything. I only have a negative perception of starting a business because of that". (E)</p>
	Motivation	What inspires them to undertake and get actions to their projects to make them happen and keep them pushing to achieve no matter what.	35	81%	<p>"... But the motivation might be that it is more feasible to create a business here because of all the support that the government has for these entrepreneurs, which is different in my country, we don't have this kind of support from the Government, that's a relief". (I)</p> <p>Yeah. And entrepreneurship is like, you know, owning something myself, creating employment for people, creating a business, creating an impact on the society about the burning problems like I'm into the health implemetics". (P)</p>
	Total			43	100%

Technological Factors

The following themes were identified as Technological Factors: Gaps, Skills, and resources. The construct analysis was based on their capabilities in the use of devices such as tablets, cell phones, computers, laptops, and digital platforms such as digital systems management, digital communication and socialization in digital environments and information management. Table 5 explained below shows the prevalence of these themes in the study.

Gaps

According to students' opinion they share that in the current edge technology have had a huge impact on society being part of their daily lives. Related to technology people must be aware of the latest changes and keep themselves updated and they are willing to improve their technological gaps in specific and different platforms that they will need depending on their fields and kind of businesses. Participants mentioned that they really have a gap in all the marketing and advertising environments as most of them are in programs that are not related with this marketing and the exposure to technologies such as Artificial Intelligence, Metaverse, Industry 4.0.

Resources

Students assure that most of the technological platforms are user friendly platforms that can be different or specific for each person, so need to be sure that the platforms that they are getting are according to what they need. Supplying technological needs requires equipment such as computers, cellphones, iPad, printers, etc.... Some students feel comfortable using technological devices and social media such as Instagram, Facebook, LinkedIn, digital academic portals of the college and some e-commerce platforms that allow entrepreneurs and students. In addition, students require software skills and training or get the access to a software specialist to get things done. Some of the tools students use are Excel, CRM, Facebook, Instagram, and Google tools. These platforms and tools let students make easier entrepreneurial work, have access to markets and spread information.

Skills

Participants mentioned that they are willing to learn skills in new platforms. Also, they mentioned that there should not be any limitation in getting these new skills as they have full access to the internet which means that they have not experienced any technological limitation yet. They also recognize that their skills improve with years of experience in their fields and works. As well as they can be part of social groups focused on technological development. It is important to mention that they are aware about the probability to need more in small businesses if they decide to undertake. Beside that technological skills in students will depend on their career choices.

Influence of internal and external factors in the entrepreneurship culture of Canadian College Students at
Confederation College in Thunder Bay, Ontario Canada
By Allison Arias Alvarado

Table 5.
Prevalence of themes related to Technological Factors

Construct	Sub-Construct	Construct Definition	Absolute Frequency	Relative Frequency	Representative Quote
Technological Factors	Gaps	The gaps in technological factors are associated with limitations that students could have during their learning processes.	7	14%	<p>“I wouldn't say there are gaps, because right now, with the technology we have it is possible and various stuff ... It's like a lot of apps ... and AI is like mind growing. So, I think that's something which can help us let it go ". (H)</p> <p>“...here the technology is very different. So, I need to learn some of the technological perspectives, especially when it comes to North America, which is like, you know, the top niche skills I need to gain...”. (P)</p>
	Resources	Resources involve all the technological devices, materials, and training that participants can have, need, or get to be able to develop their skills in their academic programs or small businesses.	27	53%	<p>“Not all the platforms are friendly enough to be used by regular users, so they were smart enough to create these platforms as user friendly with a user-friendly experience. You just need to follow the prompts, you'll just need to follow the tutorials...” (I)</p> <p>“Yeah, when it comes to technology, I feel there is always something to learn, and when it comes to entrepreneurship. I think there is a little lack, and technology where you know, you need to have a brainstorming idea. So, to encourage the students in the class...” (P)</p>
	Skills	Skills we studied specifically in the domain that students have using technological devices and platforms in general.	17	33%	<p>“...the technology I believe could help me do an entrepreneurial business especially because I've moved to a different country. Now. I think I'm familiar with most of the technology, and even if it's equipment or anything I'm learning...” (B)</p> <p>“... if I were to start my own business, I have the like of 50, 60% of the idea, like what exactly is needed but the amount of labor like the skills and the gap if you want to stay as is not something I will invest a time in...” (C)</p>
	Total			43	100%

Entrepreneurial Factors

The following themes were identified pertaining to Entrepreneurial factors: Autonomy, Financial Resources, resources risk in barriers and success. Factors such as mindset, motives, orientation, proactivity, and risk-taking were considered as sub-factors. Table 6 detailed below gives all the necessary information in order to understand the prevalence of these themes in the participants.

Autonomy

Students are looking to get autonomy when they think about entrepreneurship and creating small businesses to be part of society. Also, they want to be independent from their families, partners or any other person or fund that needs to cover their lifestyle. Besides that, their desire is focused on getting freedom in aspects like personal life, financially, economically, managing their own time and creations by expressing themselves with their business's ideas. Autonomy provides the opportunity to achieve goals, get new ideas, get out of comfort zones working for themselves as they face the hard work that entrepreneurship requires.

Financial Resources

Students are always looking to get financial resources checking the availability of this one. If they want to become entrepreneurs, they must start creating budgets, checking their personal funds, look for financial support available on campus or in other institutions such as the innovation center, and get regular jobs to support themselves. Also, students might need to get extra help hiring outsourcing services or use their revenues in the businesses to grow their own projects. Students are aware that they must pay for logistics and legal processes if they get a business. As a result, students find value in pitching competitions and entrepreneurial activities where they receive advertisement including the activities details, prizes, loans offers and partnerships that they can get with their own business ideas.

Risk in Barriers

The main and most mentioned barrier was the capital as it has the highest cost for them as the money must be liquid and ready to be paid. Students face a huge challenge competing in the real market and facing big companies that are already positioned in the market as customers have their fidelity to this companies and they will not give a chance to new products including that most of the time new customers request a proof from entrepreneurs to be sure that they can get the work done.

At the same time if students create a new company, they are increasing the market, attracting new customers and developing new industry sectors with their multicultural skills. Students can be entrepreneurs and at the same time they do not have enough knowledge or experience about how businesses in the market work and that is the point where entrepreneurship can be a gamble and a huge loss for people including investments in capital, time, and resources.

Students also mentioned that Thunder Bay is a good place to undertake due the low entrepreneurial level so that brings them more opportunities to succeed.

Success

In this study participants had the opportunity to express their opinion about their strategies to be successful in their ideas, projects, and lives. Some participants mentioned that growing a business can let them be successful, allowing them to have as many businesses as they can being part of the learning process that involves getting experience from their own and other people's mistakes. Sometimes entrepreneurship might be difficult having it as a full-time job, face economic challenges or require partnership to run the business but after the pandemic a lot of new projects an idea can be developed.

Table 6.
Prevalence of themes related to Entrepreneurial Factors

Construct	Sub-Construct	Construct Definition	Absolute Frequency	Relative Frequency	Representative Quote
Entrepreneurial Factors	Autonomy	Autonomy refers to the independence and capacity of everyone to be owners of their lives and trace the paths with their knowledge, studies, experiences, interests, and expectations of the future that they want to be part of.	11	5%	“Definitely. It means that you are the boss. It means that you set your own pace for everything you need. At the same time ... it's something amazing and it's not for everyone. I think somehow, it's kind of like a dream for everyone to be your own boss...” (G)
	Financial Resources	Financial Resources involve all the funds that students currently count with, the one that they are trying to get and the capital resources that they will need in the future if they decide entrepreneurship as a career choice.	11	5%	“... initial funds, I would be with that, Of course, that's only if the budget is starting in that area. But if it's in the middle of that, I mean they should have funds”. (H) “I think it's. You know it's worth my time. It's effective like you have. You see, posters of different business-related stuff here in the college like "need a loan or need a loan for a business”. (L)
	Risk in Barriers	Barriers are all related to the limitations that students can face during the entrepreneurial experience.	80	34%	“... I want to make a decision by myself. and it's only possible in the entrepreneurs, like in a job or in employment there is some kind of restriction out there always. If you are in whatever the position, you are holding”. (D)
	Success	Success means for people the satisfaction of getting what they want in their lives, which includes interests, goals and achievements, social status, family, academic degrees, economic success, freedom, independence and any other individual perception.	136	57%	“Regarding entrepreneurship. I will get independence... I don't want to do a job as my career option in future, because I want independence. I want to take charge. I want to take action...” (D)
	Total			238	100%

Discussion and Conclusions

First, we can say that, in the academic factors, students need to get a closer relationship with institutions to improve their learning processes. They are also willing to start a business and their own ideas, interests, and fields to make it possible mentioned that is highly comparable with Bruner (2003) who mentioned by Casillas et al. (2016) who mentioned the generational change in the educational field where students are open to exploring marketing ideas, social media tools, and getting new skills due to the drastic change in technology leaving aside the traditional or regular methods.

This research provided the information to know the perception of the students according to their institution and supportive institutions. This means that the results showed how satisfied the students are with the programs, resources a support from this institution is supported by Vargas (2007) these studies allow to know variables such as individual performance and quality in their higher education institutions.

In relation to socioeconomic factors students do not have enough capital to undertake, and they are afraid of facing risk and possible losses if the ideas do not work as they are also having academic responsibilities. Students might have different economic supports as Armenta et al. (2008) mentioned. It is good to know if students are economically dependent on their parents, partners or if they get individual monthly income, if they are currently working and their personal motivations to starting a business.

Also the study collaborated to know the influence level that students perceive from their different social groups like families, friends, work team and academic teams which is a determining part in students' processes when they are getting into entrepreneurship. As it was cited in the literature review Autio & Wennberg (2010) explained that social groups are part of the social environment and motivate entrepreneurship. Besides that, students get encouraged to try new experiences (Do & Dadvari, 2017).

In addition related with Psychological factors, the entrepreneurial attitude is related to improving by being afraid of failing to get opportunities, get new skills and knowledge for personal growth (Bosma & Schutjens, 2011).

In relation to Technological factors students are aware of the technological change and the ways that they can get the access, knowledge, and skills to it that according to Rua (2015) it opens a path development of innovation through technological resources. Both Jiménez et al. (2020) and Casillas et al. (2016) consider that technological factors are devices, digital platforms and communication and socialization in digital environments.

It is necessary to establish close relationships between students and institutions to maintain the same purposes. Creating different students' unions in the institutions can provide a

supportive network to all students ensuring that they will not have negative experiences. According to Borrayo, Zepeda & Melgarejo (2019) and Briasco (2016) if students get involved with the institutions the entrepreneurial culture will create an entrepreneurial environment with values, willingness to achieve their goals.

Furthermore, the study proved the different kinds of characteristics that are essential for students if they want to be entrepreneurs. This characteristic as self-confidence, innovative behavior, leadership, achievement, motivation, proactivity and tolerance fitted perfectly with Ornelas et al. (2015).

This research provided an updated vision post-covid of what students are facing in their current processes taking in count international factors that might influence and change the reality of each student. Graham & Pottie (2022), exposed that students at the university level have a huge workforce to create and implement with the ability to create businesses and reactivate the economy. The interviews allowed students to express their opinions and be honest as all the answers were accepted without any positive or negative classification in the study. Besides it was possible to know all the possible barriers, gaps, or limitations that students are facing day to day. Dawson et al. (2013) studied the entrepreneurial spirit at Concordia University and John Molson School of Business throughout Canada through the Global University Entrepreneurial Spirit Students Survey or GUESSS where they found that students are looking to get exciting jobs and get involved with environmental commitment in their entrepreneurial journey. This research helps to increase the knowledge about international students in different parts of the country and their expectations related to entrepreneurship.

Limitations

The first limitation for the study was the sample size as the highest number of samples was 17 people. The reason for the sample size was that during data collection, Confederation College was ending its winter semester, resulting in low response rates as most students were on vacation. The second limitation was the one site study as the study was completed just with Confederation just one institution which limited the research just to one place without taking in count other regional institutions.

For future research it is necessary to study the position of the different institutions to know how they can have a close relation with students and at the same create associations with them to improve the relationships. Also, it is important to make research at a regional level including communities, students, and institutions to have an overview and set up a critical point where all of them can work and contribute together to the development of the region according to the needs of each part. The last suggestion is to do research to find the best way to attract support to the region and create new supporting relationships with other institutions.

Ethics Statement

The studies involving human participants were reviewed and approved by Lakehead University Research Ethics Board with the file no. 1469727. The research was approved by the Confederation College Research Ethics Board (REB) with the reference number 0112. The participants supplied their written informed consent to take part in this study. The datasets analyzed in this article are not publicly available because they belong to an ongoing University research team project. Requests to access the datasets should be directed to the corresponding author.

Author Contributions

Michael Dohan, Gabriela Viquez and Allison Arias authors of this research did all the related research by themselves including background research, method, data collection, analysis, investigation, data curation, writing original draft preparation, writing – review and editing, visualization, and has read and agreed to the published version of the manuscript.

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Appendix - Interview Guide



Interview Guide: "Exploring Factors which Influence Post-Secondary Students to Engage in Campus-Based Entrepreneurship Offerings: A Qualitative Study".

Instructions

Welcome participants

Offer gift card and sign up for draw

Provide cover sheet, give overview of study from cover sheet, ask if they have any questions.

Collect signed sheets

Ask if anybody objects to recording, record if ok

Focus Group Questions

1. When you think of entrepreneurship, what comes to mind?
 - a. PROBE: Is it appealing as a career choice? Why or why not?
 - b. PROBE: If so, what would motivate you?
 - c. PROBE: If not, what are the barriers that you perceive?
2. Do you undertake any entrepreneurial work to support yourself as a student?
 - a. PROBE: If so, what?
3. Are there any factors in your social group that might influence you to choose entrepreneurship as a career?
 - a. PROBE: If so, what are they?
4. Do you think that your skill level with respect to using technology and the technology resource that you have available to you would be enough to help you if you were to choose entrepreneurship as a career?
 - a. PROBE: If so, in what ways?
 - b. PROBE: If not, what would the gaps be?
5. What resources on your campus are you aware of that could help prepare students for a career as entrepreneurs?
 - a. PROBE: What are your perceptions of these resources?
6. What program are you in, and why did you choose that program?
 - a. PROBE: Do you think that the entrepreneurship resources offered on your campus would give you any advantages as a graduate of this program?
7. Do you have any other thoughts regarding either the entrepreneurship related resource on campus or choosing entrepreneurship as a career?
- 8.

Thank participants

End session

Source: Screenshot from Michael's Dohan interview instrument

Note: The chart shows the interview guide used to complete the deep interviews with all the participants.