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Entrepreneurship
New Insights

Edited by Muhammad Mohiuddin,
Mohammad Nurul Hasan Reza,
Elahe Hosseini and Slimane Ed-Dafali

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Contributors
Nguyen Xuan Truong, Dang Van My, Anissa Lestari Kadiyono, Indri Yuliafitri, Azucena De María Arredondo Perez, Sheyla Verónica Morales Palma, Somnoma Edouard Kaboré, Seydou Sané, Moindi Meroka Rose Meroka, Alison Theaker, Altanchimeg Zanabazar, Sarantuya Jigjiddorj, Victor Mignenan, Gabriela Prelipcean, Alexandra Ungureanu, Aslican Kalfa Topates, Pritpal Singh, Teuku Shadiq, Hani Hasanah, Pfano Mashau, Andrisha Beharry, Sameera Henri, Darma Rika Swaramarinda, Badrul Isa, Norhayati Mohd. Yusof, Mohd. Ali Bahari Abdul Kadir

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Business, Management and Economics

Volume 8

Aims and Scope of the Series

This series will provide a comprehensive overview of recent research trends in business and management, economics, and marketing. Topics will include asset liability management, financial consequences of the financial crisis and covid-19, financial accounting, mergers and acquisitions, management accounting, SMEs, financial markets, corporate finance and governance, managerial technology and innovation, resource management and sustainable development, social entrepreneurship, corporate responsibility, ethics and accountability, microeconomics, labour economics, macroeconomics, public economics, financial economics, econometrics, direct marketing, creative marketing, internet marketing, market planning and forecasting, brand management, market segmentation and targeting and other topics under business and management. This book series will focus on various aspects of business and management whose in-depth understanding is critical for business and company management to function effectively during this uncertain time of financial crisis, Covid-19 pandemic, and military activity in Europe.

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Prof. Choudhry holds a BSc degree in Economics from the University of Iowa, as well as a Masters and Ph.D. in Applied Economics from Clemson University, USA. In January 2006, he became a Professor of Finance at the University of Southampton Business School. He was previously a Professor of Finance at the University of Bradford Management School. He has over 80 articles published in international finance and economics journals. His research interests and specialties include financial econometrics, financial economics, international economics and finance, housing markets, financial markets, among others.

Meet the Volume Editors

Dr. Muhammad Mohiuddin is an Associate Professor of International Business at Laval University, Canada. He has taught at Thompson Rivers University, Canada; University of Paris-Est, France; Osnabruck University of Applied Science, Germany; Shanghai Institute of Technology and Tianjin University of Technology, China. He has published research in *Research Policy*, *Applied Economics*, *Review of Economic Philosophy*, *Strategic Change*, *International Journal of Logistics Research and Applications*, *Sustainability*, *Journal of Environmental Management*, *Journal of Global Information Management*, *Journal of Cleaner Production*, *M@N@GEMENT*, and more. He is currently the director of the Research and Study Group on Contemporary Asia (GERAC) at Laval University. He is also the co-managing editor of *Transnational Corporations Review*.

Mohammad Nurul Hassan Reza, Ph.D., is a postdoctoral researcher at the Graduate School of Business, Universiti Kebangsaan Malaysia (UKM). He holds a Ph.D. from the Faculty of Management, Multimedia University, Malaysia. During his PhD, he completed two research projects funded by the Ministry of Higher Education, Malaysia, and Multimedia University, where he worked as a graduate research assistant. He holds an MBA with a specialization in human resource management from Daffodil International University, Bangladesh. Dr. Hassan Reza has authored articles in several journals, including *Sustainable Production and Consumption*, *Journal of Cleaner Production*, *Environmental Science and Pollution Research*, *Sustainability*, *Heliyon*, *Journal of Global Information Management*, and *IEEE Xplore*. His research interests include operations management, technology management, supply chain management, circular economy, and sustainable development studies.

Elahe Hosseini received a Ph.D. in Organizational Behavior and Human Resource Management from Yazd University, Iran, where she is a lecturer. She is also a lecturer at Shiraz University, Iran. Her research interests include employee voice, human resource management and social and entrepreneurship activities to encourage entrepreneurship in developing countries. She has several publications in international journals to her credit and has participated in several conferences. Dr. Hosseini serves as an editor and editorial board member for journals such as the *Iranian Journal of Management Studies* and *International Journal of Management and Enterprise Development*. She is also a reviewer for journals such as *Sustainability*, *Transnational Corporations Review*, and *SAGE Open*, among others.

Dr. Slimane Ed-Dafali is an Associate Professor of Management (HDR) at the National School of Commerce and Management (ENCG), Chouaib Doukkali University, Morocco, where he conducts teaching and research activities. His current research is focused on entrepreneurial finance, innovation, knowledge management strategy, family business, and corporate governance. He has contributed to different research projects with various scholars and universities. He has conducted applied research studies for institutional associations like the Moroccan Private Equity Association (AMIC). He is also a member of the International Academic Association of Governance (AAIG) and the Family Business Center. Dr. Ed-Dafali also serves as a referee for several international journals.

Contents

Preface

Entrepreneurship is an evolving and expanding multidisciplinary field of study. Research on entrepreneurship is being conducted from various perspectives and realities of markets and participants. Some of the principal areas of entrepreneurship research are technopreneurship, immigrant entrepreneurship, social entrepreneurship, women entrepreneurship, entrepreneurship in emerging markets, and start-up ventures.

This book is a collection of reviewed and relevant research chapters concerning developments within the field of entrepreneurship. It includes scholarly contributions by various authors and is edited by a group of experts in business, management, and economics.

The book includes the following chapters:

Chapter 1: "New Perspectives for Technological Entrepreneurship in the Age of Change: Between Success and Resilience"

Chapter 2: "Innovation and Entrepreneurship to Address the UN Sustainable Development Goals"

Chapter 3: "Entrepreneurship in Emerging Economies: The Role of Innovation and Institutions"

Chapter 4: "Project Coordinator Competence and the Success of International Development (ID) Projects: Standard Models Tested in Practice"

Chapter 5: "Entrepreneurship and Factors Affecting Entrepreneurial Decisions"

Chapter 6: "Start-up Business Investment: The Case of Mongolia"

Chapter 7: "Ultra-Micro Business Algorithm: Village Economic Metabolism in the Coastal Area"

Chapter 8: "Women Entrepreneurship Psychology in Managing Micro, Small, and Medium Enterprises (MSMEs): A Case Study in Indonesia"

Chapter 9: "Women Entrepreneurs as Vloggers: Turkish Beauty YouTubers in the Context of Simulative Labor"

Chapter 10: "Role of Mentoring for Women Entrepreneurs"

Chapter 11: "A Review of the Impact of Covid-19 Pandemic on Women Entrepreneurs"

Chapter 12: "Role of the Family in Fostering Student's Entrepreneurial Intention"

Chapter 13: “Entrepreneurial Intention, Life Satisfaction, and Impulsivity in University Students”

Chapter 14: “Digital Entrepreneurship in Vocational High School Student Level”

The target audience comprises scholars and specialists in the field.

Dr. Muhammad Mohiuddin
Université Laval,
Quebec City, Canada

Dr. Mohammad Nurul Hasan Reza
Postdoctoral researcher,
UKM - Graduate School of Business,
Universiti Kebangsaan Malaysia (UKM),
Selangor Darul Ehsan, Malaysia

Dr. Elahe Hosseini
Yazd University,
Yazd, Iran

Dr. Slimane Ed-Dafali
Université Chouaib Doukkali,
El Jadida, Morocco

Chapter 1

New Perspectives for Technological Entrepreneurship in the Age of Change: Between Success and Resilience

Victor Mignenan

Abstract

Problem: why are some technology entrepreneurship projects successfully, resilient and others not when they are executed in the same ecosystem? Research objectives: to revise conceptual and theoretical portraits of the process of technological entrepreneurship; propose a model that incorporates multidimensional factors that can effectively contribute to the success and resilience of technology entrepreneurship. *Methodology*: we used the inductive approach and a qualitative exploratory strategy. Private and public companies are our sample for convenience. *Results*: at the *design* stage, human capital and relationship capital identify market issues and opportunities. At the *implementation and development* stage, human capital, relational capital, structural capital, and technological capital are effective levers to generate performance and resilience. Finally, at the marketing and *consolidation* stage, human capital, structural capital, relational capital, financial capital, and technological capital have an undeniable contribution. But it is above all the integration of all these factors that generates success and resilience. *Implications and limitations*: the chapter is useful for researchers, entrepreneurs, and governments who will find strategies to enhance the success and resilience of technological entrepreneurship. This research is part of the theory of artificial science. The adoption of an inductive approach and a qualitative strategy is one of its limitations. Future research could use the mixed strategy to extrapolate results.

Keywords: entrepreneurship, technology, success, resilience, intellectual capital

1. Introduction

Technological entrepreneurship plays a crucial role in economic development in the twenty-first century. It contributes to the creation of industries and the safeguarding of those in decline [1]. For several years, research on entrepreneurship has been interested in the discovery and exploitation of advantageous opportunities [2]. The know-how and creativity of individuals who are called entrepreneurs make it possible to exploit these opportunities. Among the latter, some require the mastery

of advanced technologies. However, more and more entrepreneurs are developing technological innovations [3]. Thus, technological entrepreneurship represents a new trend within the entrepreneurial ecosystem. It is distinguished by the importance of technological and scientific knowledge, but also by its less linear and predictable aspect [3, 4]. Indeed, this type of entrepreneurship is often poorly planned and emerges in an unpredictable way. It is often the result of exchanges between several stakeholders. It plays a key role in competitiveness and socioeconomic growth. Despite its importance, technological entrepreneurship is not foolproof. Several technology projects are successful, and others are not, even though they were implemented in the same environment [5, 6].

Unfortunately, the literature review revealed that few authors have studied the success and resilience of technology entrepreneurship. In this sense, given its novelty, technological entrepreneurship requires a better understanding, particularly about its success and resilience.

Thus, this research will answer the following question: why are some technology entrepreneurship projects successfully and resilient and others are not, when they are executed in the same ecosystem?

This chapter has two objectives:

- devise conceptual and theoretical portraits of technological entrepreneurship.
- Propose a model integrating multidimensional factors that can effectively contribute to the success and resilience of the different phases of technological entrepreneurship.

As a first step, the theoretical framework, including new perspectives, will be addressed. Second, the conceptual model will be presented through the different success and resilience factors, followed by discussion and implications.

2. Theoretical context

In the context, it will shed light on the notions of entrepreneurship, technology, and technological entrepreneurship. Next, we will analyze the paradigm of artificial sciences as a new perspective of technological entrepreneurship, we will develop the model of success and resilience of technological entrepreneurship.

2.1 Definitional elements: entrepreneurship, technology, and technology entrepreneurship

2.1.1 Entrepreneurship

From the outset, entrepreneurship is a fragmented discipline approached from different angles, including economic, sociological, psychological, and managerial [2, 7]. From an economic point of view, entrepreneurship is part of a functional posture. From the perspective of the culture and sociology, entrepreneurship is based on a list of individual posture. From the manager's perspective, entrepreneurship is part of a process approach. **Figure 1**, developed for synthesis purposes, presents the interaction of entrepreneurship with other disciplines.

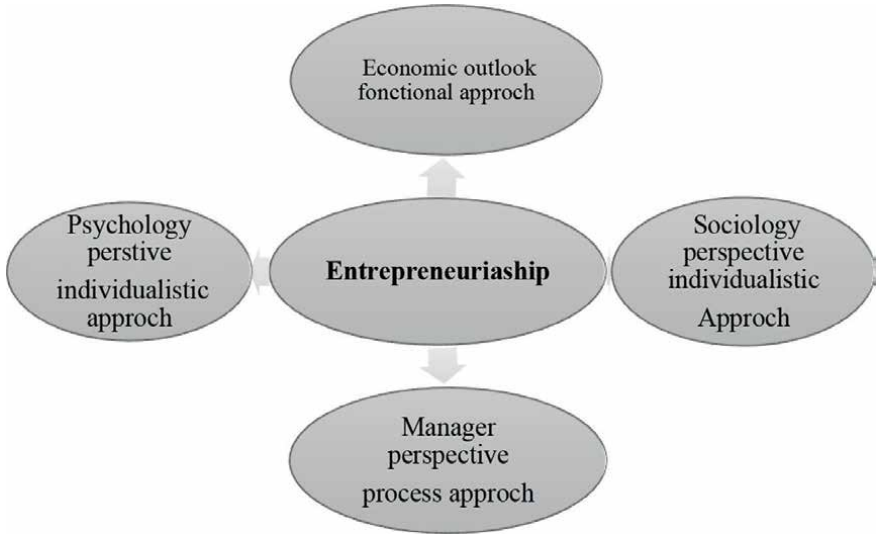

Figure 1.
Entrepreneurship and other disciplines. Source: Author, November 2022.

For researchers in the field [3, 8–10], entrepreneurship is a concept including several types of activities: identification of opportunities, creation or takeover, implementation of a project, etc.

In light of the above, it is accepted that the entrepreneurial is a polysemic concept: different meanings have been associated with it [1–3, 5–9, 11, 12]. Several terms such as value creation, innovation, continuity, recovery, and solvability have been used to designate this phenomenon [13, 14]. Some authors [8, 15] judge it from the continuity of the new company. Others assess it on the basis of the performance, success, and economic resilience of the emerging firm [1, 8, 16]. Despite the conceptual diversity, the most widespread meaning in both theory and practice is that which equates entrepreneurship with the new creation of social and economic value [1, 8, 16]. In this perspective, the success of the entrepreneur is assessed on the basis of economic success criteria, thus favoring a multidimensional analysis of the phenomenon. **Figure 2** is developed for summary purposes.

2.1.2 Technology

"Technology" is a captivating but confusing concept. It favors a variety of acceptances and is ready to be equivocal. Many definitions have been proposed by theorists and practitioners [17]. Indeed, according to theorists, technology is a body of knowledge with concrete applications. It is based on the results of basic and applied sciences and the cumulative process of experiential learning [18–22]. According to these authors, technology is a multidimensional whole. It consists of equipment, methods and techniques, skills, and knowledge. It concerns basic and applied science outcomes and the experiential learning process [17–19, 21–23]. This definition, relevant, neglects the stakeholders and therefore the network of actors involved in the production of said technology. In contrast, practitioners view technology as the skill needed to identify, create new knowledge in a collaborative and cooperative process, and improve techniques [21–25].

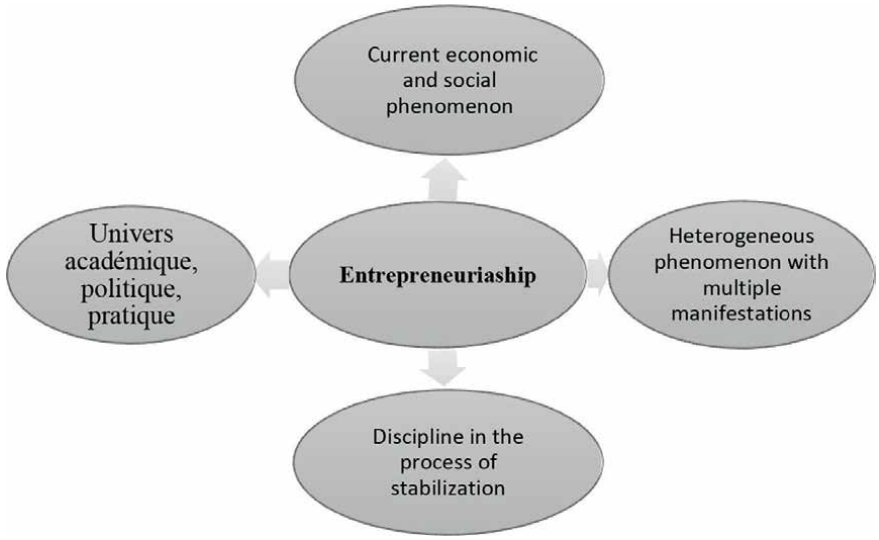

Figure 2.
Different dimensions of entrepreneurship. Source: Author, 2022.

The difficulty of explicitly defining the concept of technology stems from the very historical evolution of the term because it is intimately linked to human activities. Thus, among the ancient Greeks, "technè" understood "technology" has been metamorphosed several times to designate respectively (i) "manufacture and production", (ii) "all transformative activities carried out by men" [21–24, 26]. Moreover, still in Greek antiquity, technology or "technè" was divided into two parts, namely "praxi," which refers to purely utilitarian activities, but also "poiesis," which means activities requiring creative talent in the use of instruments. Finally, "technè" consists of these two dimensions and means both "art and craftsman" [8, 17, 21, 24, 27, 28].

The diversity of definitions often leads to confusion and does not allow the technology to be accurately located in relation with other scientific disciplines. It is sometimes located in the "science" sector, "computer science" the field of programming language, software, or simply in the technical description of computers. These are the limiting apprehensions of the concept [4, 17, 21, 27–29], because it goes beyond the technical field in the strict sense of the expression. In the context of this chapter, it is at the same time science, technology, and art, as shown in **Figure 3**.

In the light of **Figure 3**, technology is defined, in chapter frameworks, as:

> *"a body of scientific, technical, know-how and actionable knowledge, necessary guidelines, generated by the individual, group of individuals, interacting according to an elaborate approach that can be used to meet a specific need of a given organization or community."*

This definition highlights four dimensions of technology: science, art, technology, and society. It is a springboard for understanding technological entrepreneurship in its new perspectives. This is the subject of the sequence below.

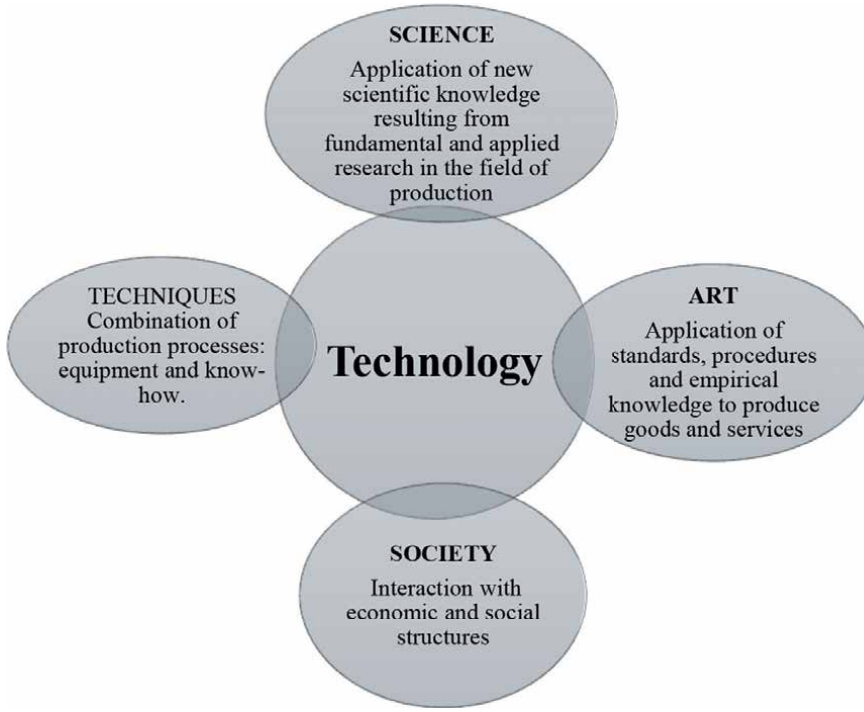

Figure 3.
Technology components. Source: Inspired by November, 1990.

2.1.3 Technology entrepreneurship

Several authors [2, 13] define technological entrepreneurship as the mechanism for translating technical and artistic knowledge and knowledge into marketable products. The entrepreneurial opportunity is characterized by this conversion and the search for new relationships between the means offered by technology, and the end, characterized by the satisfaction of needs in the market [8, 16]. However, the function of transforming technology into a commodity is central to its success and resilience [8, 16]. The inherent value of a technology remains latent until the technology is commercialized.

According to several authors [11], entrepreneurship is the creation of a new technological company. For some authors [1, 30], these are the coordination efforts needed to achieve technological change. In any case, most of the work [1, 11, 13, 16, 30, 31] reveals that technology entrepreneurship is the search for solutions to problems often related with technology.

Based on the above definitions, technology entrepreneurship is defined as:

> *"the design and deployment of a project that brings together and deploys specialized individuals and heterogeneous assets closely linked to advances in scientific knowledge, artistic techniques with the aim of creating and generating sustainable and resilient value for a company whose mission is to satisfy the needs of society."*

This definition highlights art, science, and technology. It thus projects the new perspective of technological entrepreneurship. This is the subject of the sequence below.

2.2 New perspective technological entrepreneurship: artificial sciences

The science of the artificial is concerned with theories dealing with "artificial" or "synthetic" phenomena. These are phenomena that are located at the meeting point of nature and culture, including technical culture [32]. These artificial phenomena range from tools and machines to languages and the arts. Thus, artificial sciences offer new bases for analysis and interpretation in the field of technological entrepreneurship.

Indeed, the paradigm of artificial sciences highlights the process of technological entrepreneurship as an object to be conceived (*Conception* stage). This paradigm offers an interesting crucible for the operationalization of this stage [33]. It symbolizes an entrepreneurial situation shaped by man. In other words, it is the fruit of a relationship that the buyer maintains with the world through his acts of design. The entrepreneur, like any person, cannot dissociate himself from the situation or from his action. This could be called to act located and finalized [32, 33]. The design brings out, at the same time, the subject and the artifact by a focus on the development of the action of the entrepreneur. In this respect, Simon points out that "*design* is *a process which is concerned with how phenomena might achieve goals*" [34]. In addition, artificial science also provides a theoretical foundation for *implementing* entrepreneurship as contingent rules. These are linked to the objectives that have been assigned to the design phase. They also enable the implementation phase to achieve its goal and to develop. Second, they promote understanding of *how, when,* and *why* implementation should be carried out. Moreover, the paradigm of artificial sciences considers that technological entrepreneurship is not designed to be static, but dynamic through recursive adaptation. Finally, the paradigm of artificial sciences considers the *consolidation* phase *(Marketing),* as the ability of a project leader to acquire all the skills and to implement the actions that guarantee the strategic, economic viability and sustainable development of the product.

Considering the above, the new perspectives of technology entrepreneurship are akin to a process, consisting of the design, implementation, and consolidation (marketing) phase as shown in **Figure 4**. They are based on the foundations of artificial science. Consequently, in the rest of this chapter, technological entrepreneurship is the design and implementation of an evolving situation, adapting, recursively, to its ecosystem.

2.3 Technology entrepreneurship success and resilience model

The success of technological entrepreneurship is manifested by the acquisition of artistic and technical advantages, the level of user satisfaction, and the use of new knowledge [5, 7, 8]. It also addresses the added value that manifests itself through new products, processes, and organizational behavior. It is usually broken down

Figure 4.
Technology entrepreneurship process. Source: Author, 2022.

into management success and investment/organizational success [5, 16]. In contrast, entrepreneurial resilience manifests itself in overcoming adversities and adapting to uncertainty [8]. Similarly, it involves the ability to bounce back from an adverse event; the ability to cope with major disruptive events; the ability to adapt to a challenging environment; the tenacity to survive and succeed [5, 8].

In the light of the above, several authors [2, 8, 12, 16] reveal that the success and resilience of entrepreneurship are the result of intellectual capital [35, 36].

Specifically, several authors [35–37] find a direct relationship between human capital (business experience, training, and motivation) and positive outcomes of technology firms. For structural capital (adaptability to change and the implementation of correct strategies), the author suggests that this factor is associated with the growth and survival of the firm. Other authors point out that the development of business networks, the creation of contacts and knowledge of customers promote marketing operations and resistance to competitive shocks and therefore to the success and resilience of an entrepreneurial project.

Several authors [36–39] argue that the strategic positioning of the technology company in a competitive environment results from its intellectual capital, as it is a better lever for innovation. In their study of several companies in the Turkish automotive industry, a large number of authors found that technological innovation has a positive relationship with human, technological, financial, structural, and relational capital [35–39]. According to the results of some studies [35, 36, 38–40], accumulated knowledge from customers, suppliers, other stakeholders, processes, etc., increases the success and resilience of the business. This knowledge is part of a company's intellectual capital, including financial capital, that it must exploit and explore to improve its performance.

Considering the above analysis, **Figure 5**, developed for synthesis purposes, serves as a model for the success and resilience of technological entrepreneurship.

3. Methodology

Technological entrepreneurship is a phenomenon less well known to researchers. We have deployed a qualitative exploratory approach. Inductive in nature, it has made it possible to grasp technological entrepreneurship in its finest manifestation. The field of maneuver is for private and public companies. Sampling by convenience was adopted because the goal is not to generalize the results to all contractors. The objective pursued in this research is to construct theoretically, to guarantee internal validity [41]. With the use of a small sample (12 technology entrepreneurs), too large biases would emerge. Data production began with the validation of the interview guide following a pre-test and the consultation of three experts. Then, we sent a letter explaining the research project to each of the 12 identified entrepreneurs. Similarly, a telephone call was made in the same week. A total of 12 semistructured interviews were conducted by a four-member team between September and November 20 22. Interviews average 1 hour in length. They were recorded on a digital medium and then transcribed. The *verbatims* were then codified and analyzed thematically [42] via the NVivo software version 14 by the author of the chapter.

Portrait of companies that responded to interviews.

In this research project, several technology companies of different ages, sizes, and sectors were studied, as shown in **Table 1**.

An examination of **Table 1** reveals that five companies work in the sectors in which they work.

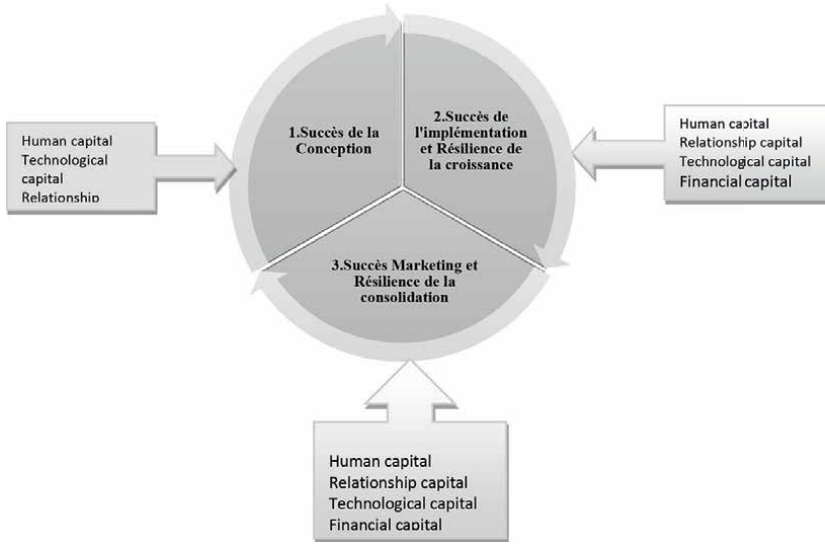

Figure 5.
Technology components. Source: Author, 2022.

Maintenance	Sector	Age	Waist	Process phase
1	Health	6	51	Implementation and growth
2	Energy	8	54	Development and Marketing
3	Water	4	23	Conception
4	Technology	3	62	Development and Marketing
5	Media	14	14	Development and Marketing
6	Bank	6	8	Implementation and growth
7	Energy	8	14	Marketing and consolidation
8	Electricity	6	24	Conception
9	Breeding	5	7	Marketing and consolidation
10	Academic and industrial research	18	90	Development and Marketing
11	Energy	14	42	Implementation and growth
12	Energy	20	34	Implementation and growth

Table 1.
Technology companies interviewed.

4. Results

4.1 Design phase of technology entrepreneurship

Eleven of the 12 companies studied have experimented with the design stage of technology entrepreneurship. The twelfth is still in this phase.

Design phase success and resilience factors.

Success factors and related barriers are classified into five dimensions: Human Capital, Technological Capital, Structural Capital, and Relationship Capital.

Contributing human capital to success and resilience.

During this phase, it is important to consider the following success factor: human capital. To develop a good business plan, the entrepreneur must have a good skill of the trade. In addition, he must know "what customers need or will want" according to interviews #1, #2, and #3. Other interviews (#4, #5, #6) illustrated understanding the evolution of the market to offer, at the right time, the product that will respond to the problem faced by the user. This is consistent with several authors [36, 37, 39], which highlight the importance of using your human capital to know the user of your product. The authors then insist on the fact that it is as much a priority to understand your customer as to know your market in a global way.

In addition, according to respondents, "the entrepreneur who has a good knowledge of his customers and who puts forward the characteristics of his product" (interviews #7, #8, #9, and #11) plays a major role in the success of the design of the innovation. Respondents also emphasized the importance of having a good team to be able to succeed in the design phase. In addition, "Having good collaborators you trust and who are more competent than you" will determine the success of the technology entrepreneurship project (interview #6). Thus, one of the success factors of R&D projects is human capital [35–37, 39] since it is necessary to "have the right people to complete the project" (interview #4).

Since the employees of the technology entrepreneur have a decisive influence on his project, it is relevant to focus on the relational capital including stakeholders and their contributions during the design phase of the technological product.

Contribution of relational capital in the success of the design phase.

This research project identified several components of the relationship capital that provide support to the technology entrepreneur in his project. Several contributions were identified: technical contributions, structuring of the project, building a network of contacts, and seeking funding.

In terms of technical contribution, several stakeholders supported the technology entrepreneur, including, among others: research firms, suppliers, and university research laboratories, etc. These different organizations have provided the necessary knowledge, information, and skills to support technological innovation. The entrepreneur in interview #8 mentions the role of investors in access to equipment and infrastructure: "Our financial partners have given us access to workspaces, facilities and other equipment, etc." Other stakeholders, such as future customers, voluntarily lent themselves to technical tests to validate the idea of technological innovation: "This company allowed us to experiment, knowing that it would regenerate energy savings for them" (Interview #11). This statement corroborates the opinion of two authors [16, 36, 37] that highlights the need to work with the client, generate the success of his entrepreneurship, and foster his resilience.

As part of the structuring of the project, the technology entrepreneur can call on an entrepreneurship advisor who can accompany him in his project (interview #4). He can use patent agents to provide him with the necessary information and feedback: "I contacted my patent agent to verify the existence of such a project" (interview #6). The technology entrepreneur can call on incubators (interview #9) or university development companies (interview #11). Finally, the protection of the technological project requires a good lawyer from the beginning of the project: "A good lawyer, from the beginning. Just because it's cheap doesn't mean it's good" (Interview #10).

Finally, many issues force entrepreneurs to call on lawyers from the beginning: intellectual property, procedures to separate from former employers, etc.

With a view to building a network of contacts to validate the idea of innovation, respondents mentioned several possible trajectories: professional organizations (interviews #3 #5 #7, and #10), trade clubs (interviews #2 and #9), incubators (interview #11), and accounting managers (interviews #4, #9, and #10). These leads corroborate the literature. Indeed, professional associations and trade groups are opportunities to identify new opportunities. They are also a source of relevant information. Accountancy managers can help the entrepreneur by giving him the benefit of their network of contacts and thus giving him access to clients. As a result, actors involved in financing can become accessible through this network of contacts.

Finally, during the design phase, the search for funding is necessary. Several respondents mentioned using bank managers, microfinance institutions (interviews #4, #8, and #9), or private investors (interview #7). The contribution of managers is also mentioned in the literature. Other opportunities identified by respondents included government grants (interviews #2, #3, #4, #5, #6, #7, #8, #9, and #11) and incubators (interviews #4 and #9). These possibilities are in line with the words of some authors [13, 16, 36]. According to this author, government grants provide funds to entrepreneurs who help them with their projects.

Contribution of technological capital to design success.

Respondents agreed that technological capital is the successor factor to technological entrepreneurship. They stress the positive correlation between the availability, quantity, and quality of technological resources and the successful design of technological innovation. This is the case for respondents #5, #6, #7, and #12. According to them, it is necessary to make "a marriage between knowledge of the market and the need, and knowledge of the technology available to meet this need." In addition, some respondents insisted that one should not "be married to technology," but rather choose technology appropriated and equated and evolve, if necessary, "technically strong people, to analyze technological choices" (interview #10), technical skills being key success factors.

Ultimately, there is general agreement that the success of the design phase of technological entrepreneurship is strongly due to the quality of human capital (level of training, experience, business/technical competence, management, trust, etc.). Then comes relational capital (business network, customer relations, technical and financial partners). Finally, technology, structure, and finances also play a significant role in the success of entrepreneurship. On the other hand, the resilience of the design phase is the subject of little comment for reasons of its limitations in time.

4.2 Implementation and development phase

This phase, considered simplified [43], includes development and was carried out by nine of the 12 companies studied. While the other companies are still in this stage.

Success factors of the implementation and development phase.

The various dimensions (Relational Capital, Human Capital, Financial Capital, Structural Capital, and Technological Capital) will be addressed in this phase.

Contributions of relational capital (market and users) to success and resilience.

According to the respondents, the mastery of relational capital (customer relationship, knowledge of the market and the user, stakeholder management) remains important in the implementation and development of technological innovation (interviews #3, #5#7, and #8). In addition, for some respondents (interviews #3,

#5#7, and #9), the goal is not to understand the need, but to find a solution (appropriate technology) to the problem detected. Understanding the market is then one of the success factors of the technological project: the relevance of the solution to the identified problem. The mobilization of the first customers to test the product is then necessary: "It takes first customers who will try. " (Interview # 9). This ties in with another success factor of this phase, which is to "be 'challenged' as quickly as possible" (interview #6).

Contributing Technology Capital to Success and Resilience.

According to the respondents, it is relevant to perform several tests and correct errors or overcome technological challenges that come your way. In addition, risks of technology implementations exist, and some respondents point out that they can become significant obstacles when they are not anticipated: "we have not seen the risk of implementation at the level of certain technologies [...] Implement them at the time and in the cost that we had anticipated, on this, we had more difficulties" (interviews #6 and #9). In addition, respondents noted the splitting of information when interacting with various collaborators, such as suppliers.

Contribution of Financial Capital to Success and Resilience.

The respondents mentioned the cost and working capital requirement, which is often higher than expected during the implementation phase: "Financing at this stage is very difficult." (Interview # 5). "There is a much greater chance of a failure in terms of funding than in terms of technology." (Interview # 8). Therefore, it is possible to solve these problems through "government grants and aid" (interview #9), for example. The literature also deals extensively with the issue of financing as a cause of success/failure and resilience of technological projects [1, 5, 6, 8, 13, 16].

Contributing Human Capital to Success and Resilience.

Many authors [1, 8, 13, 16, 39, 44] highlight that the success of technology projects is influenced by the entrepreneur's management skills. Respondents point to management obstacles, particularly related with the satisfaction of financial partners and shareholders, which makes this phase "very risky." Shareholders can leave if anything less clear happens (interview #4). In addition, it is communication management, interpersonal management, and partner relationship management that are mentioned by respondents as causes of success/failure and resilience. For example, it is necessary to keep the partners informed of the real problems going on and therefore of the real situation. This led one respondent to state that " choosing an experienced financial partner is important, as it will facilitate the management of communications with these partners" (interviews #8 and #10). While communications management was an element that emerged from the interviews, so it was interpersonal and time management. It is easy to underestimate the interpersonal conflict and the time required to complete this phase: "it put pressure on the entire organization" (interview #11).

4.3 Marketing phase and consolidation

This phase includes production, marketing, and consolidation. Eight of the 12 companies in our sample are in this stage. According to respondents, this is the phase in which entrepreneurs experience enormous cash flow difficulties.

Success and resilience factors of the marketing phase and consolidation.

The various dimensions (relationship, human/management, technology, finance) will be addressed in this phase.

Contribution of relational capital to success and resilience.

The importance of relationship capital in the success and resilience of marketing (production and marketing) and sustainability activities was highlighted by respondents: "To produce, market and withstand market shocks, you need to be able to have a good business network, to have people you can count on." (Interviews #3, #5, and #8). Two other factors of success and resilience were then identified. An SME with limited resources seems to have difficulty accessing the market: "market acceptability is never obvious" (interview #6). In addition, it seems necessary to "have a global presence with certain employees, to have this feedback from the market. I also feel the competition, what is happening, to be able to develop the right products" (interview #11). This then makes it possible to improve the product. In addition, to commercialize innovation, market data are needed to ensure product diffusion, growth, and development.

Stakeholder roles in the marketing phase.

Several roles have been identified: access resources, access services, and finally, access to a network of contacts. With respect to *Access to Resources* (interviews #4 and #9), interviewees emphasized the importance of financial, physical, and informational resources, as they play an important role in the execution of launch activities and thus promote success. For services, responses refer to government departments, standard bodies, lawyers, etc. (interviews #6 and #9). Finally, access to networks of relevant contacts promotes support, pooling and increases resilience (interviews #1 and #3).

Contribution of human capital to the success and resilience of the marketing phase and consolidation.

Having competent human capital was seen as a factor in success and resilience by many respondents. Thus, two criteria must be considered: "First criteria: someone who knows his target market very well, he must be in the target market" (interviews #2, #5, and #8). Second criterion: someone who has sufficient technical knowledge. (Interview #7). Since then, several authors [13, 16, 44]; Lacoursièr argue that the most important factor in the success of research and technology development as well as its resilience is human resources. Since the human resources of the technology entrepreneur exert a decisive influence on his project, it may then be relevant to focus on the necessary stakeholders and their roles during the marketing phase of the technological product.

Contributing Technology Capital to Success and Resilience.

This dimension was addressed by several respondents during this phase. It's necessary that the entrepreneur has state-of-the-art technology to deliver quality products. This will ensure its positioning in the competitive environment and therefore increases its resilience: "but without technology, you cannot be efficient in the process of your project." (interviews #5 and #8).

Contribution of financial capital to success and resilience.

An SME has limited financial resources, which can be a significant obstacle during the marketing phase: "Since you are an SME, you cannot make huge marketing efforts." (interview #8). They can therefore be a factor that determines the success of the commercialization of technological entrepreneurship projects. In addition, inadequate funding is the fundamental barrier to establishing technology companies. This is due to the difficulty of estimating cash flows and the volatility of this type of business (interview #1, #3, #9).

4.4 Best practices for the success and resilience of the tech entrepreneur

This section presents good practices related to the success and resilience factors identified by the 12 technology entrepreneurs. Each of these good practices covers the

different dimensions (relational capital, technological capital, financial capital, management, and people). Moreover, these good practices are different according to the three phases of the entrepreneurial innovation process which is in the following **Table 2**.

5. Implications for research

In the first place, thanks to its focus on public and private companies, our study goes against the current of the literature above focused only on private companies and very often large. Therefore, our results demonstrate interest in future research on the human and relational dimensions of an organization, including social practices to increase opportunities for success and resilience.

Second, our study sheds light on the role of intellectual and social capital in the process of success and resilience of technological entrepreneurship. Indeed, while a few previous studies have examined the role of intellectual capital in the performance of technological innovation projects, little qualitative research has been conducted to date, to our knowledge of the resilience of technological entrepreneurship projects. Our study demonstrates that social practices that include the intellectual capital of the business can be effective for the success and resilience of the design, implementation, consolidation, and marketing of technology entrepreneurship.

Finally, our results confirm that intellectual capital management practices including social and technological capital contribute effectively to the three main phases of technological entrepreneurship. Therefore, it would be relevant to take these dimensions into account in future models on the success and resilience of technological entrepreneurship. Our results shed light on how technology entrepreneurs can successfully run their projects and make them resilient.

6. Limitations and future research

Some specificities of our sample, related with the size and process of entrepreneurship, constitute limitations, but also interesting future research perspectives. We have chosen in this study to focus on small public and private organizations, as all are, by nature, more limited in resources. Similarly, we have adopted the qualitative approach. Therefore, we are not able to generalize our results and say that they apply to all organizations. Therefore, some questions deserve to be explored in future research, including the quantitative method, with a large sample size.

Finally, an ambitious research perspective would be to conduct new empirical studies in three different locations to make comparisons. We could then move closer to a consensus on the question of the contribution of intellectual capital to the success and resilience of the process of technological entrepreneurship in a changing context.

7. Conclusion

This study made it possible to identify and understand the factors of success and resilience of technological entrepreneurship in the era of change. It fostered the visibility of intellectual capital as a determining factor in the design, implementation, and marketing of the technology entrepreneur. Nevertheless, given the nature of the qualitative exploratory approach of this study, the aim was to construct theoretically,

	Conception	Implementation and development	Marketing and consolidation
Human capital	• Provide business skills • Elaborate the different tasks • Formulate a relevant solution • Ensure the quality of technology	• Provide management skills • Develop the operational plan • Manage operational aspects • Promote compliance with standards and methods	• Stimulate production and competitiveness • Prove the values of technology • Create networks of contacts • Manage the strategic side of the technology
Relationship capital	• Know the characteristics of the market • Make contacts available • Protect trade secrets • Informing stakeholders	• Provide contacts in the market • Perform tests and trials • Build partnerships • Provide networks of relationships	• Provide contacts in the market • Perform tests and trials • Build partnerships • Provide networks of relationships
Technological capital	• Use technology in operations • Distribute resources	• Digitize services • Follow-up and control of activities • Automatically manage operations • Ensure quality and productivity	• Promote agility and flexibility. • Produce automatically • Facilitate communication between actors • Improve productivity and quality
Financial capital	• Develop the cash flow plan • Control expenses • Develop the financing plan • Choose the right financial partners.	• Set up financial accounting • Manage expenses with financial partners, • Facilitate the execution of activities • Respect the constraints	• Ensure the execution of operations • Achieve sales targets • Adopt a marketing process • Support all loads

Table 2.
Best practices for success and resilience.

and therefore, the results cannot be generalized. In addition, 12 enterprises were the subject of semistructured interviews. It should also be noted that the Tiwari [43] innovation process model used was not perfect. The fact that it is simplified has made it easier to analyze the results, but an approximation is then made, since entrepreneurial innovation is not necessarily a linear process. One of the entrepreneurs started his project directly in the implementation phase, for example.

About future research, researchers have several options. It may be relevant to dwell on the different alternative strategies of human capital, relational capital, and financing of technological entrepreneurship projects. A consensus emerged that the financial, human, and relational dimensions were vital for each of the three phases of the model adopted. To seek to generalize the results, a confirmatory approach could be adopted to estimate the effects of the identified factors in the success and resilience of each phase of the innovation process. Several stakeholders and their roles as well as technological capital would also be relevant to deepen. This then makes it possible to present the results of the technological product, but also to detect new avenues for innovation. The mentoring relationship and business network identified by respondents may also be the subject of further study. Finally, the role of public and private support bodies and the relationship between a university external to the project and the latter are avenues to be explored. From a managerial point of view, future entrepreneurs can use the results of this study as guidelines to adopt good practices based on these success and resilience factors, from the beginning of their projects.

Author details

Victor Mignenan
Department of Management, University of Moundou (Chad) and Member of the Crossroads Expertise and Research Laboratory for Innovation Analysis and Business Support, University of Quebec at Chicoutimi, Canada

*Address all correspondence to: victor.mignenan1@uqac.ca

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References

[1] Mignenan V. Collective intelligence and university entrepreneurial performance: An exploratory study among teacher. Science Journal of Business and Management. 2021;**9**(2):103-118

[2] Danjou I. L'entrepreneuriat: Un champ fertile à la recherche de son Unité. Revue Française de Gestion. 2019;**2019**:109-126

[3] Mignenan V. Management of frugal innovation projects: Research approach and perspectives. International Business Research. 2022;**15**(4):121-142

[4] Zhang D, Rong Z, Ji Q. Green innovation and firm performance: Evidence from listed companies in China. Resources, Conservation & Recycling. 2019;**44**(144):48-55

[5] Mignenan V. Pratiques de management et succès de projets d'innovation. Revue Africaine de Management—African Management Review. 2021;**6**(2):1-23

[6] Mignenan V. Intelligence collective et résilience entrepreneuriale à l'ère de la Covid-19. Revue Management & Innovation. 2022;**1**(5):93-116

[7] Mignenan V, Meddeb B. Analyse des approches et perspectives en management d'innovation frugale. Revue Entrepreneuriat et Innovation. 2022;**4**(16):1-28

[8] Mignenan V. Collective intelligence and entrepreneurial resilience in the context of Covid-19. International Business Research. 2021;**14**(9):1-20

[9] Gasse Y. Les entrepreneurs des secteurs technologiques: Leur profil, leurs motivations et leurs actions. Management & Avenir. 2011;**2**(42):247-261

[10] Verstraete T, Fayolle A. Paradigmes et Entrepreneuriat Revue de l'entrepreneuriat. 2005;**4**(1):33-52

[11] Castonguay Y et al. L'entrepreneuriat technologique: ses parties prenantes et leurs implications. Revue Organisations & Territoires. 2019;**28**(3):23-30

[12] Mignenan V. Innovation management and overall business performance: Exploratory study in Chadian context in the two Logones. International Journal of Business Administration. 2022;**13**(2):18-38

[13] Bailetti T. Technology entrepreneurship: Overview, definition, and distinctive aspects. Technology Innovation Management Review. 2012;**2**(2):5-12

[14] Capdevila I. Les différentes approches entrepreneuriales dans les espaces ouverts d'innovation. Innovations. 2015;**3**(48):87-105

[15] Chabaud D, Sammut S. L'entrepreneuriat: Nouveaux champs d'analyse, nouvelles perspectives. Académie de l'Entrepreneuriat et de l'Innovation. Revue de l'Entrepreneuriat. 2016;**15**(2):7-14

[16] Astebro T. Key success factors for technological Entrepreneurs' R&D projects. IEEE Transactions on Engineering Management. 2004;**51**(3):314-321

[17] Mignenan V. Modèle de management des projets de transfert technologique et d'innovation. UQAC. 2019;**2019**:1-345

[18] Friedman RS, Roberts DM, Linton JD. Principle concepts of technology and innovation management: Critical research models. Research Directions. 2008;**2008**(2008):322

[19] Gonod PF. Aperçu théorique: Technologie, transferts, innovation technologiques notions connexes. Washington D.C.: Département des Affaires scientifiques Secrétariat Général de l'Organisation des États Américains; 1972. pp. 1-11

[20] Heinzl J et al. Technology Transfer Model for Austrian Higher Education Institutions. Journal of Technology Transfer, Springer Science+Business Media, LLC; 2012. pp. 1-34

[21] November A. Nouvelles Technologies et mutations socio-économiques: Manuel des technologies nouvelles. Institut International d'etudes Sociales, Geneve. 1990:209

[22] Prud'homme J, Doray P, Bouchard F. Sciences, technologies et sociétés de a à Z. Les Presses de l'Université de Montréal. 2015;**2015**:1-264

[23] Roy M, Guidon J-C, Fortier L. Transfert de connaissances-Revue de la littérature et proposition d'un modèle. Etudes et Recherches-IRSST-Québec. 1995;**1995**:1-67

[24] Thibaut E. Transfert de Technologie: Cas du CNRS, Structure de la Pensée Créatrice, Automne. Faculté des Sciences Economiques et de Gestion-Université de Strasbourg. 2010;**2010**:1-211

[25] Allen TJ, O'Shea RP. Building Technology Transfer within Research Universities: An Entrepreneurial Approch. Cambridge University Press; 2014. p. 391

[26] Riccio P-M, Bonnet D, Dekorsy S. Management des technologies organisationnelles. Collection Économie et Gestion/Journées d'étude MTO/ Presses des Mines, Paris-France. 2009;**2009**:1-354

[27] Bernard F, Fluckiger C. Innovation technologique, innovation pédagogique Éclairage de recherches empiriques en sciences de l'éducation. Revue de recherches en éducation. 2019;**1**(63):3-10

[28] Giones F, Brem A. Digital technology entrepreneurship: A definition and research agenda. Technology Innovation Management Review. 2017;7(5):44-51

[29] Treglia L, Mynard A. Enjeux et Défis du Transfert de Technologies aux Etats-Unis. Ambassade de France aux Etats-Unis-Mission pour la Science et la Technologie. 2013;**2013**:1-51

[30] Etzkowitz H. The triple helix: Science, technology and the entrepreneurial spirit. Journal of Knowledge-based Innovation in China. 2011;**3**(2):76-90

[31] Albert, P., La Création d'entreprises de haute technologie. In Verstraete, T. (éd.). Histoire d'entreprendre—Les réalités de l'entrepreneuriat. Paris, Éditions EMS, 2000: p. 149-160.

[32] Avenier M-J, Schmitt C. Quelles perspectives le paradigme des sciences de l'artificiel offre-t-il a la recherche en entrepreneuriat. 2008;**2008**:1-22

[33] Avenier M-J. Les Sciences de l'artificiel: Une conceptualisation révolutionnaire de sciences fondamentales à parachever. Projectics/ Proyéctica/Projectique. 2019;**3**(24):43-56

[34] Simon HA. Les Sciences de l'artificiel. Vol. 2014. Paris: Gallimard; 2015

[35] Delgado-Verde M et al. Green intellectual capital and environmental

product innovation: The mediating role of green social capital. Knowledge Management Research & Practice. 2017;**2017**:262-275

[36] Mignenan V. Proposal of a model for building human Capital in an Organizational Environment. Journal of Organizational Psychology. 2021;**27**(4):72-92

[37] Mignenan V. Proposition d'un modèle de construction du capital humain en milieu organisationnel. Ad Machina. 2020;**2020**(4):110-134

[38] Cappelletti L. Vers un modèle socio-économique de mesure du capital humain. Revue Française de Gestion. 2010;**8**(207):139-152

[39] Lacoursière R et al. Capital intellectuel, capacités stratégiques et innovation de produit Étude des configurations de PMI. Revue Française de Gestion. 2014;**1**(238):87-100

[40] Chen Y-S. The positive effect of green intellectual capital on competitive advantages of firms. Journal of Business Ethics. 2008;**2008**(77):271-286

[41] Evrard Y et al. Market—Fondements et Méthodes de Recherches en Marketing. Post-Print- HAL; 2009

[42] Igalens J, Roussel P. Méthodes de recherche en gestion des ressources humaines. Economica. 1998:207

[43] Tiwari R. The early phases of innovation: Opportunities and challenges in public-private partnership. Tech Monitor. 2007;**2007**:32-37

[44] Fossum KR et al. Success factors in global project management. International Journal of Managing Projects in Business. 2019

Chapter 2

Innovation and Entrepreneurship to Address the UN Sustainable Development Goals

Pritpal Singh

Abstract

The UN Sustainable Development Goals (UN SDGs) were developed in 2015 to address many global development challenges. Some of these goals include bringing affordable and clean energy to all (UN SDG7), provide clean water and sanitation for all (UN SDG6), providing quality education from early childhood to adults (UN SDG4), and decent work and economic growth (UN SDG 8). Technology has been advancing and can be deployed to address these challenges through entrepreneurial ways. In this chapter we will describe how technology-enabled innovative and entrepreneurial solutions are being brought to address these goals. The specific research questions to be addressed are: What types of Innovation and Entrepreneurship models are most effective in addressing the UN Sustainable Development Goals? This book chapter reviews different innovations in technologies and business models in the energy sector, particularly off-grid renewable energy, health care, water and sanitation, agriculture, and education sectors. The common themes of innovations in business models and technologies will be drawn from these case study reviews to guide researchers in developing new entrepreneurial approaches to addressing the UN SDGs.

Keywords: UN sustainable development goals, business models, information and communication technologies for development (ICT4D), electricity access, clean water and sanitation, good health and well-being

1. Introduction

The UN Sustainable Development Goals address many development challenges. The 17 UN SDGs and corresponding 169 targets cover a range of challenges including no poverty, ending hunger, quality education, access to clean and affordable energy, access to clean water and sanitation, etc. [1] **Figure 1** shows all seventeen goals.

To address these global development challenges, a variety of models have been used. These include donor aid models, development bank lending models, and entrepreneurial models. Looking at the history of success of these different approaches, the donor aid models, and development bank lending models have had some limited measure of success. However, the aid and loan models have been strongly criticized for creating a dependency on aid, particularly in African countries [2]. The entrepreneurial approach

Figure 1.
UN sustainable development goals [1].

has been promoted by several authors, primarily by Paul Polack [3] and C.K. Prahalad [4]. Entrepreneurial models require strong consideration of both sustainability and scalability which are somewhat limited in the other two approaches. In the donor aid models and bank loan models, the money donated or loaned for a specific project tends to support the development activity for a limited time or scope. This is useful for some infrastructure types of projects and certainly have their role to play. However, given the scale and urgency of the needs in this space, more entrepreneurial venture approaches are required. The entrepreneurial approaches also offer opportunities for new revenue streams, as well as long term growth and sustainability. In this chapter, we will present case study examples of entrepreneurial ventures that are addressing various UN development challenges. The original research project for finding common business models for successful ventures in emerging economies was the Monitor Group's report titled "Emerging Models, Emerging Markets" [5]. It described seven business model types that work well in emerging markets. While this report considered successful business models within the context of LMICs, it did not explicitly link the models to the UN SDGs. A more recent report that did focus on the UN SDGs is the book titled "Entrepreneurship and the UN Sustainable Development Goals" [6]. This edited volume is a collection of papers that focuses on research in this field but is focused on theoretical frameworks offering only a few case studies. The goal of this chapter is to build on these reports and describe innovations in technologies and business models that are having significant impact on addressing the UN SDGs. In particular, the common themes that appear among successful business models from research in the field will be described. By identifying these successful models, the opportunity to apply them to other UN SDGs may be explored.

2. Clean and affordable energy

The Institute of Electrical and Electronic Engineers (IEEE) is the professional body of electrical, computer and electronic engineers. It is the largest professional

organization in the world with over 450,000 members worldwide. One of the signature programs of the IEEE Foundation (the charitable arm of IEEE) is the IEEE Smart Village program. This program supports entrepreneurs to bring technology-based solutions to development challenges in the field, particularly around bringing electricity access to the approximately 800 million people worldwide who do not have access to electricity. The program starts with initial seed funding to pilot a solution and then provides matching funds to grow and scale the program with the aim of trying to bring electricity access to a million people.

One of the recipients of the IEEE Smart Village funding who has gone on to scale his entrepreneurial venture is Paras Loomba, Managing Director of Global Himalayan Expeditions (GHE). With an initial grant to light up five remote villages in Ladakh, India, the program has grown to electrify 131 villages to date [7]. Systems are being deployed by volunteers who go on trekking expeditions in the Himalayan mountains. An outgrowth of the program has been to increase impact tourism in the region of Ladakh in India. New revenue streams that have come out from GHE's initiative, in addition to providing lighting for villages, include high quality homestays for Himalayan Mountain trekkers, astronomy tourism, and cultural events produced by the residents who live in the Himalayan communities. The business model here has expanded income revenue streams for the communities in this region. As a result of this work, not only is the UN SDG goal 7 of Affordable and Clean Energy addressed, but so are goals UN SDG goal 3 Good Health and Well-Being, UN SDG goal 8 Decent Work and Economic Growth, and UN SDG goal 13 Climate Action. GHE has been recognized with many prestigious awards for its work including the G20 Sustainable Tourism award for the work that they have been doing to combine new forms of tourism with bringing electricity access in a sustainable and scalable way to the communities in this region.

A second business model approach is to use a hybrid model where renewable energy enterprises use revenues from installing solar electric systems in cities to subsidize installations in rural areas. An example of such a model is that of Ifeanyi Orajaka, Managing Director of the GVE group in Nigeria. The electric grid in Nigeria is relatively unreliable resulting in power shortages and blackouts even in the main cities in the country. The GVE group provides a range of services in the energy engineering space including commercial and industrial solar/generator set systems, energy efficiency/audit services for commercial customers, as well as rural electrification services ranging from individual solar home systems to village-level mini-grids [8]. An example of a 40 kW mini-grid project is shown in **Figure 2**. Installed in 2015, this project was financed by a combination of funding from the Bank of Industry (BOI) in Nigeria, the UN Development Program (UNDP) and the IEEE Smart Village program. The GVE group has continued to grow dramatically attracting foreign investment to further expand. Like GHE, the GVE group has received many prestigious awards for its work including being recognized by the London Stock Exchange as one of the fastest growing private companies in Africa in 2019 (see **Figure 3**).

Through major programs including the Sustainable Energy for All [11], an initiative launched by the UN Secretary General, Ban Ki-moon in 2011, and the emergence of green bank financing organizations that provide low interest loans for businesses deploying clean energy systems, there is growing financing support for enterprises working to address UN SDG 7. The Energy Sector Management Assistance Program (ESMAP), a global knowledge and technical assistance program administered by the World Bank, provides analytical and advisory services to low- and middle-income countries (LMICs) in the clean energy space. ESMAP released a technical report in

Figure 2.
40 kW Mini-grid deployed by GVE group in Bisanti Village, Nigeria [9].

Figure 3.
GVE Group being recognized by the London Stock Exchange as one of the Fastest Growing Private companies in Africa in 2019 [10].

September 2022 titled "Mini Grids for Half a Billion People" in which they outlined how investments in renewable energy could lead to significant economic growth in LMICs [12]. An Executive Summary of this report was published in 2019 and emphasizes business models using efficient appliances and productive uses of electricity to

provide increased revenue to communities. Again, this approach not only addresses the UN SDG 7 goal of Clean and Affordable Energy but also addresses the UN SDG 8 goal of Decent Work and Economic Growth.

The concept of an energy ladder is an important concept for rural electrification projects (see **Figure 4**) [13]. On the lowest rung of the ladder is very basic access to electricity. This can simply comprise electric lights. Two major companies that have been using an entrepreneurial model to manufacture and distribute solar lights in LMIC's are d.light [14] and Green Light Planet (recently rebranded as Sun King) [15]. d.light has partnered with many large companies, including Unilever, Total, Orange as well as international non-governmental organizations (NGO's) to distribute their solar lighting products. Partnering with established large companies and using those companies' existing, extensive supply chains has allowed d.light to distribute over 100 million products in 70 countries [14]. The company has been able to raise over $100 million of investment financing to support their growth.

Sun King offers a range of products starting with the entry level Sun King Pico Plus solar LED light (see **Figure 5**) [16]. This solar light provides five times the brightness of a kerosene lamp and sells for 1169 Kenyan Shillings (<$10) in Kenya [17]. In comparison to the price of kerosene and the fire hazards and toxic fumes coming from being breathed in by children using kerosene lamps, solar LED lights offer a much cleaner, affordable, and healthier lighting option.

Sun King also offers upgraded products including a solar home system that includes a larger solar panel, several lights, and the capability for recharging cell phones [15]. Sun King recently expanded its Series D investment to $330 million with additional funding of $70 million from Leap Frog Investments [18].

A product developed through the IEEE Smart Village program is called the Sunblazer unit [19]. This is a modular system where solar panels are mounted to a

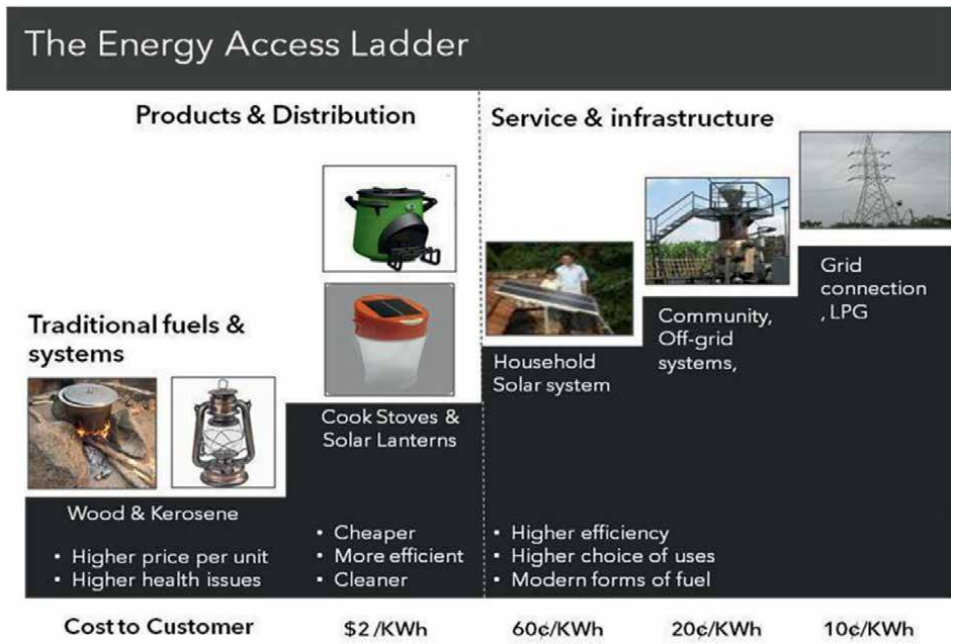

Figure 4.
Concept of an energy ladder [13].

Figure 5.
Sun King Pico Solar LED light [16].

towable trailer frame with batteries located in the base of the frame. This system can be towed to remote communities and set up into a scalable system to power a village (typically starting at 1 kW). **Figure 5** shows the second-generation unit. The most recent version, generation IV, ranges in power from 1800 to 3600 W [19]. The first such system was deployed in Haiti in 2013 (**Figure 6**). More recently Renewable Energy Innovators Cameroon (REIc) has deployed larger scale systems in villages to provide electricity for running enterprises (see **Figure 7**) [20]. REIc is also a qualified manufacturer of the Sunblazer units, the first in the African continent. These multikilowatt systems are being used to support small businesses such as barber shops, small workshops, refrigerators to provide cold drinks, etc. Again, this opens up new revenue streams for the small businesses in developing communities.

An important paradigm shift in recent years for providing access to electricity in LMICs is the pay-as-you-go (PAYG) financing approach. Similar to how cell phone credits are bought by families of low means in small chunks to provide access to mobile phone service, electricity access can be provided in chunks to families who cannot afford the upfront investment in a solar electric system. Several companies including M-Kopa in Kenya [21], d.light [14], and Sun King [15] offer such schemes. The client pays a down payment for a small solar electric system (typically ~100-200 W) that the company installs in the client's home. The company then finances the balance of the system. A box that can connect and disconnect the electricity supply to the home is located between the home and the solar electric system (see **Figure 8**). The client can pay for an increment of electricity, e.g. 5 kWh through mobile payments. The company can then unlock the box to allow access to this chunk of electricity and once it is consumed, the client can again send a mobile payment to the company for purchasing another chunk of electrical energy.

M-Kopa established the PAYG model for solar financing about 10 years ago. Since then, they have provided "over $600 million of credit that has enabled over 1 million customers to access solar lighting, energy efficient televisions and fridges, smart phones, cash loans and more" [21]. They have received several awards for their enterprise development including the Financial Times' Africa's Fastest Growing Companies in 2022 award.

Figure 6.
Sunblazer unit for powering remote communities [19].

Figure 7.
Village solar minigrid deployed by REIc in Northwest Cameroon [20].

3. Good health and well being

UN SDG 3 focuses on Good Health and Well Being and includes several subgoals/targets. Among these are reducing maternal mortality rates, infant and child mortality rates, and reducing the incidence of preventable, non-communicable diseases. In most LMIC's the health care system is a public system which is typically under-resourced both in terms of facilities and qualified medical staff. Patients in these countries are

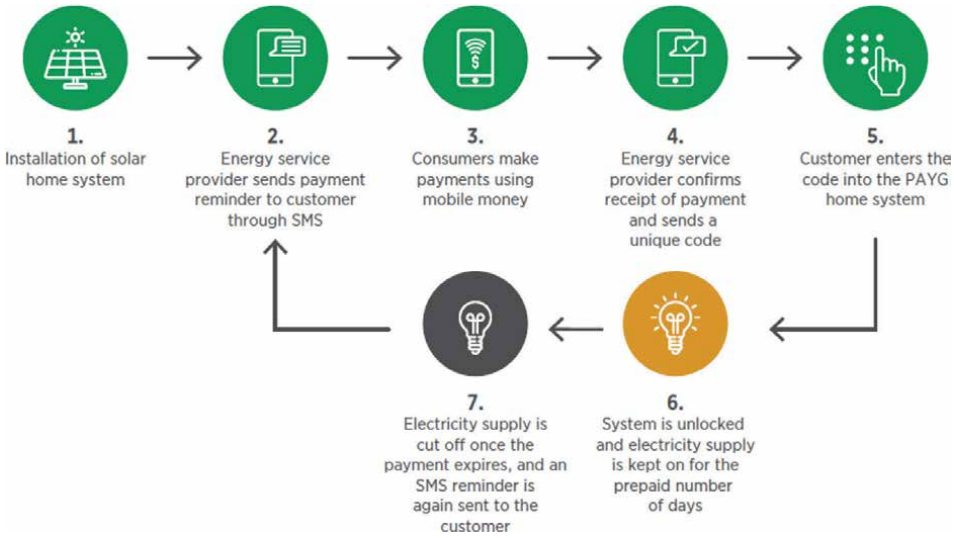

Figure 8.
Pay-as-you-go electricity access system concept [22].

often willing to pay for private health services that offer higher quality service than the public health system without the long wait times associated with the public systems.

One approach to offering higher quality of service is through telemedicine programs. These systems may be developed using low-cost communications technology and open-source software. We have implemented such a system in Nicaragua using basic feature phones using 2G connectivity and the open-source software, Rapid SMS, available through UNICEF [23]. An important element of this program was to adequately train the front-line health care workers who generally have limited education and health care training in rural communities in LMICs. In the program we developed, we trained the community health workers (CHWs) both in basic nursing skills as well as in technology. They learned not only to measure basic vital signs, such as temperature, pulse rate, respiration rate, blood pressure, etc. but also to text this information in a coded format using their cell phones to a server. The data was entered into a database on the server as a patient health record. A volunteer doctor reviewed data that was flagged to be out of a normal range and, if necessary, the patient was referred for further clinical investigation. This process could catch manageable diseases, such as diabetes and hypertension, that may be asymptomatic. This could reduce the incidence of premature deaths related to non-communicable diseases.

Also, in the training program, the CHWs were trained in how to deal with issues arising from pregnancy such as eclampsia and pre-eclampsia. We found that the CHWs were better able to handle emergency situations with pregnant women following our training programs and having access to cell phones. They were more informed of the signs of these distresses in pregnant mothers and could use the cell phones to seek professional guidance when dealing with the situation. As a result of our program, several mothers' and infants' health outcomes have been drastically improved.

Of course, during the period of severe Covid restrictions, where people were not allowed to leave their homes, telemedicine consultations grew rapidly in developed countries also. Telemedicine between consultant doctors in cities in developed countries and clinics in developing countries has also been growing as an emerging paradigm to provide a higher quality of health care in LMIC's.

Another entrepreneurial model that the author has witnessed in Managua, Nicaragua, are health kiosks located in shopping centers in the city. Representatives of a for-profit company collect patients' vital signs for free. This information is then shared with pharmaceutical companies that can then suggest appropriate medication that can address health problems uncovered by these health screenings. The pharmaceutical companies therefore provide the support to allow these screenings to be offered for free to the general public while also increasing the market for their products.

A sustainable business model was developed by Prof. Khanjan Mehta for providing medical information in rural communities in Kenya [24]. He discovered that people in the rural communities were interested enough in finding out their medical information (e.g. blood pressure) that they were willing to pay for it. By arranging for one or two nurses to serve a particular catchment area, these vital sign measurement services could be run in a sustainable way [24].

The Aravind Eye clinic in India was established to provide cataract surgeries in remote communities in South India. Using innovations in low-cost replacement lens technology and large volumes of procedures through mobile clinics going out to the field, the Aravind Eye clinic has been able to provide cataract surgeries at low cost and high quality. The surgeons conducting the operations typically perform hundreds of surgeries per day. They have optimized their operations so that patients are rotated through various stages of the operation, including pre-op preparation, surgery, and post-op recovery in a very efficient and streamlined way. This allows the operations to be performed at low cost, high volume leading to low charges for patients. In the case of very poor people who cannot pay even the low fees, their operations are offered at subsidized prices (even free) depending on the patients' financial means [25]. A picture of a nurse examining the eyes of a patient in the Aravind Eye Care system is shown in **Figure 9**.

Business models for primary health care delivery in LMIC's was presented in a paper by Lokman and Chahine [27]. In this paper, the authors studied nine social enterprises delivering primary health care in LMICs in a sustainable, profitable way. They found some common patterns in the business models of these social enterprises as follows. They were all able to purchase medicines in bulk at low cost; they offered flat rate

Figure 9.
Doctor examining a patient in the Aravind Eye Care System [26].

pricing for patients but cross-subsidizing for services; they offered high quality health care; and they generated revenue from alternative streams such as selling their in-house IT systems, subscription packages, telemedicine services, franchising, and mobile units.

4. Clean water and sanitation

UN SDG 6 is focused on ensuring availability and sustainable management of water and sanitation for all [23]. Between 2015 and 2020, the percentage of the world's population having access to safely managed drinking water increased from 70–74%. Similarly, the percentage of the world's population having access to safely managed sanitation rose from 47–54% [28]. To obtain universal coverage of these two types of services by the year 2030, the rate of expansion to these services would need to increase four-fold.

Water and sanitation utilities have been improving services to their customers over the last two decades. Such utilities have the expertise and capabilities to effectively manage the development of these systems and to attract commercial financing [29]. There are several examples of water and sanitation successes as presented in [29]. In Brazil, for example, the establishment of world class utilities has resulted in an increase in sanitation services from 73–87% in the last 20 years.

The World Bank has developed an initiative titled "Water Global Practice's Utilities of the Future" that "supports the establishment of efficient, reliable, transparent, responsive and inclusive utilities." By putting in place stronger incentives for improved policies and governance of utilities, the goal of this initiative is to "help utilities transition towards a sustainable business model that enables them to build resilient water supply and sanitation services for all" [29].

Gravity-fed water distribution systems are becoming popular in village communities in developing countries. These systems take clean water from above the animal grazing line and pipes it down to communities. These systems provide water to villagers free of contamination from animals grazing at lower levels. These systems are typically built by community members under the guidance of a water committee. This committee also needs to be organized to collect funds to be used for making repairs to the systems in the event of damage to the systems. This type of program may be considered as a social enterprise.

5. Zero Hunger

UN SDG 2 is to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture. Large agricultural corporations are turning to more automated systems for farming particularly incorporating sensors and software systems into the agricultural enterprise. This so-called *precision agriculture* is a "farming management strategy based on observing, measuring, and responding to temporal and spatial variability to improve agricultural production sustainability" [30]. The use of this technology can improve land productivity while using fewer resources. Higher productivity can lead to improved crop yield and livestock yield from a particular parcel of land. However, while this technology can benefit large farming corporations, bringing down the cost of the technology for use on small holder farms is still being researched.

Most of the world's poor rely on agriculture for their livelihoods. A significant issue that small holder farmers face is lack of water for irrigating their farms.

Figure 10.
Deployed drip irrigation system on a farm in India [34].

Depending on rainfall to water their farms can lead to food insecurity, particularly with climate change adjusting regional rainfall patterns. Being able to irrigate small holder farms can offer farmers increased crop yield, with potentially increasing the number of crop cycles from only one per year to several crop cycles per year and therefore higher income to the families. A technology that offers such an opportunity is treadle pumps. Several versions of this technology have been commercialized but one of the most popular is the Super Money Maker pump [31]. This pump comprises two pedals that a farmer can stand on and alternately move up and down. The up and down motion results in water being pumped in each cycle of the motion. Such systems have been deployed in many different African countries. Over 350,000 of these pumps have been sold and have resulted in 13 million people being fed and $230 million in new farm profits and wages being produced [32].

Another technology to irrigate and fertilize farms at low cost are drip irrigation systems. In this approach, water and nutrients can be delivered precisely to crops through a series of pipelines. The pumping system may be solar powered so that these systems may be used in remote, small farms which do not have access to grid electricity. This type of system again allows for crop irrigation without reliance on rainfall and can result in multiple crop cycles in a year from a piece of land. An example of a company manufacturing and selling such drip irrigation systems is Netafim, a company headquartered in Israel but with subsidiaries all over the world. The company is operating in 110 countries with 17 manufacturing plants worldwide. They have sold systems to over 2 million farmers [33]. A picture of a deployed Netafim drip irrigation system in India is shown in **Figure 10**.

6. Quality education

UN SDG 4 is focused on providing quality education to all. In low resource settings, providing access to quality educational materials can be a challenge. Several companies have developed entrepreneurial solutions to this challenge.

World Possible is a non-profit corporation based in the US that has developed an open-source hardware-based system with educational content that can be used in locations where the internet is not accessible. Based on the open-source Raspberry Pi microcomputer, the remote area community hotspot for education and learning (RACHEL) device stores educational content on the Raspberry Pi server and distributes it by Wi-Fi to a classroom of students in a school setting [35]. The RACHEL-Plus 4.0 sells for $500 and includes 500GB of data storage as standard. The educational materials are available in several languages including English, Spanish and French. The standard educational content includes Wikipedia, Kolibri, several mathematics packages, Great Books of the World, Moodle class management software, TED talks, KA Lite, and many more [36]. The Rachel system has been distributed throughout the world. We have also developed our own Rachel-type system by configuring and setting up a Raspberry Pi microcomputer for use in a school computer laboratory in Guatemala [37].

A communications company, Brck, based in Nairobi, Kenya is bringing free connectivity to communities without access to the Internet. They have developed a rugged WiFi router with 8 hours of battery life and an embedded SIM card for 3G Internet access [38]. Interfacing this unit to a Raspberry Pi microcomputer along with the development of ruggedized and customized tablet PCs led to the formation of

Figure 11.
Tablet PCs plus server laptop computer and router donated by the Telefonica Foundation to the Colegio Liceo in San Cristobal Island in the Galapagos Islands.

the Kio Educational kit [39]. Many of these kits have been distributed to schools in rural communities in Kenya and Uganda, improving the quality of education in these schools.

Other companies have also developed low-cost tablet PCs that are aimed at the educational market. One such company, Datawind, developed one of the first such tablet PCs initially for the Indian market. The company chose to develop a tablet PC with lower features than tablet PCs developed for the developed countries markets. The screens had to be custom made since there were none on the market that met the company's low-cost requirements. The Datawind tablet PC sells for about Rs. 3000 (about $36) in India and is widely available in schools [40]. In 2015, Datawind accounted for 24% of the 4.4 million Tablet PC sales in India, most of them sold to the Indian government for use in schools [41].

Similar tablet PCs have been deployed in schools globally. For example, in Nicaragua, the Zamora Thuran Foundation supplied the Datawind tablet PCs under the name Mochila Digital to schools. Similarly, the Telefonica Foundation has provided similar tablet PCs to schools in the Galapagos Islands. A picture of the tablet PCs, server computer and the wireless router in their carrying case donated to the Colegio Liceo school in San Cristobal Island in the Galapagos archipelago is shown in **Figure 11**.

The Telefonica foundation has also developed a complete educational program together with educational resources called ProFuturo [42]. This program has been delivered to several schools in the Galapagos Islands. This project again represents a hybrid business model where a large telecommunications company, Telefonica, is using the revenues from its primary business to fund interventions in LMIC schools to improve the quality of education offered in these schools.

7. Discussion

In this chapter, various technology and business innovation models have been considered to address UN SDGs 2, 4, 6, 7 and 8. Some common approaches emerge in the innovations developed to date. The first is hybrid business models where services to wealthier customers are used to subsidize services for poorer clients. The Aravind Eye Care example and the GVE-group solar electric systems are examples of this type of hybrid business approach. A second common theme is that quality of service and attention to customer satisfaction are very important considerations to ensure that the customer is willing to outlay money for the private services rather than relying on public services. Again, the Aravind Eye Care center offers a good example in the health care sector while the sustainable tourism work by Global Himalayan Expeditions offers another excellent example. Third, innovations to improve efficiencies in the delivery of services is common to many of the enterprise approaches described in this book chapter. Fourth, the volume and scale of the enterprise can be used to reduce costs and thereby make the business competitive against other development approaches. The examples of the solar lanterns from d.light and Sun King as well as the tablet PCs from Data Wind are good examples of these business models. Finally, the use of technology to improve services and to support additional means of revenue generation is a common theme seen in the successful enterprises addressing the UN SDGs. In this case, pay-as-you-go models for electricity provision, the low-cost water pumping systems, and the use of open-source hardware and software tools to improve the quality of education are examples of technological innovations.

Areas for further work in this field are to apply these common innovations in technology and business models to other UN SDGs and to deploy these innovations more broadly to scale enterprises to advance progress in meeting the UN SDGs.

8. Conclusions

The UN Sustainable Development Goals outline goals in various development sectors to be achieved by the year 2030. Different mechanisms may be used to address these challenges including public services provided through governments, programs supported through donor aid funded and charitable organizations, or through private enterprise solutions.

In this book chapter we have illustrated various business models that have been used to address several of the UN SDGs. The advantages of entrepreneurial solutions are that they are not reliant on donations or public funds. They are often built out more efficiently than public services and require consideration of financial sustainability in planning the business model right from the outset. Entrepreneurs also must consider growth and scaling of their enterprises to achieve their overall company objectives.

The UN SDGs are scheduled to be met by the year 2030. While significant progress has been made in addressing some of the goals to date, there is still a lot of work to be done to achieve the goals. Entrepreneurial approaches if adequately financed and scaled have the potential to achieve these goals. It is important that the entrepreneurs working to meet these goals are provided the support needed to succeed in their important enterprises.

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Conflict of interest

The author declares no conflict of interest.

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Author details

Pritpal Singh
Department of Electrical and Computer Engineering, Villanova University, Villanova, USA

*Address all correspondence to: pritpal.singh@villanova.edu

References

[1] Available from: https://sdgs.un.org/goals [Accessed January 11, 2023]

[2] Moyo D. Dead Aid. London, England: Penguin Books; 2009

[3] Polack P, Warwick M. The Business Solution to Poverty. San Francisco, California, USA: Berrett-Koehler Publishers, Inc.; 2013

[4] Prahalad CK. The Fortune at the Bottom of the Pyramid. Upper Saddle River, New Jersey, USA: Pearson Education, Inc.; 2010

[5] Karamchandini A, Kubzansky M, Frandano P. Emerging Markets, Emerging Models. Rockville, Maryland, USA: The Monitor Group; March 2009

[6] Apostolopoulos N, Al-Dajani H, Holt D, Jones P, editors. Entrepreneurship and the UN Sustainable Development Goals. R. Newbery Emerald Publishing; 2018

[7] Available from: https://www.ghe.co.in/Impact/Solar-Energy/ [Accessed January 3, 2023]

[8] Available from: https://gve-group.com/services/ [Accessed January 3, 2023]

[9] Available from: https://gve-group.com/portfolio/bisanti-village-mini-grid-project/ https://www.seforall.org/ [Accessed January 3, 2023]

[10] Available from: https://gve-group.com/ [Accessed January 3, 2023]

[11] Available from: https://www.seforall.org/ [Accessed January 3, 2023]

[12] Energy Sector Management Assistance Program. Mini grids for half a billion people: Market outlook and handbook for decision makers. In: License: Creative Commons Attribution CC BY 3.0 IGO. The full ESMAP report is available for download at the following website. Washington, DC: World Bank; 2022 [Accessed January 3, 2023] Available from: https://esmap.org/Mini_Grids_for_Half_a_Billion_People_The_Report

[13] Schnitzer D, Lounsbury DS, Carvallo JP, Deshmukh R, Apt J, Kammen D. Microgrids for rural electrification: A critical review of best practices based on seven case studies. Technical Report published by UN Foundation. February 2014. DOI: 10.13140/RG.2.1.1399.9600

[14] Available from: https://www.dlight.com/ [Accessed January 3, 2023]

[15] Available from: https://sunking.com/ [Accessed January 3, 2023]

[16] Available from: https://sunking.com/solar-lanterns/sun-king-pico-plus/ [Accessed January 3, 2023]

[17] Available from: https://www.jumia.co.ke/pico-plus-portable-solar-emergency-light-sun-king-mpg327221.html [Accessed January 3, 2023]

[18] Available from: https://sunking.com/solar-news/sun-king-expands-its-series-d-to-330m-with-additional-investment-of-70m-led-by-leapfrog-investments/ [Accessed January 3, 2023]

[19] Available from: https://smartvillage.ieee.org/tech/sunblazer-iv/ [Accessed January 3, 2023]

[20] Available from: https://rei-cameroon.com/projects-completed [Accessed January 3, 2023]

[21] Available from: https://m-kopa.com/ [Accessed January 3, 2023]

[22] IRENA. Innovation Landscape brief: Pay-as-you-go models. Abu Dhabi: International Renewable Energy Agency; 2020

[23] Singh P, McDermott-Levy R, Keech E, Mariani B, Klingler J, Moncada MV. Challenges and successes in making health care more accessible to rural communities in Waslala, Nicaragua using low-cost telecommunications. In: Procs. 2013 IEEE Global Humanitarian Technology Conf. San Jose, CA. Piscataway, New Jersey, USA: IEEE; Oct. 20-22, 2013

[24] Suffian S, Lackey J, Dzombak R, Mehta K. Demonstrating demand for preventive health services in rural Kenya. Journal of Humanitarian Engineering. 2015;**3**(1):24-35

[25] Available from: https://d3.harvard.edu/platform-rctom/submission/aravind-eye-care-system-mcdonaldization-of-eye-care/ [Accessed January 4, 2023]

[26] Available from: https://ravoof.com/aravind-eye-care-system-eye-care-for-the-poor/ [Accessed January 4, 2023]

[27] Lokman L, Chahine T. Business models for primary health care delivery in low- and middle-income countries: A scoping study of nine social entrepreneurs. BMC Health Services Research. 2021;**21**:211

[28] Available from: https://sdgs.un.org/goals/goal6 [Accessed January 4, 2023]

[29] Available from: https://blogs.worldbank.org/water/utilities-future-how-build-universal-and-resilient-water-supply-and-sanitation-systems [Accessed January 4, 2023]

[30] Available from: https://en.wikipedia.org/wiki/Precision_agriculture [Accessed January 4, 2023]

[31] Available from: http://moneymakerpumps.org/ [Accessed January 4, 2023]

[32] Available from: https://kickstart.org/impact/ [Accessed January 4, 2023]

[33] Available from: https://www.netafim.com/en/Netafim-irrigation-company-about-us/ [Accessed January 4, 2023]

[34] Available from: https://www.netafim.com/en/news-and-events/news/Netafim-Chosen-to-Deploy-Four-Large-Community-Irrigation-Projects-Across-India/ [Accessed January 4, 2023]

[35] Available from: https://store.worldpossible.org/pages/about-us [Accessed January 4, 2023]

[36] Available from: https://store.worldpossible.org/products/rachel-plus [Accessed January 4, 2023]

[37] Singh P. Collaboration between Landivar University in Guatemala and Villanova University in the US on Humanitarian Projects for Computer Scientists and Engineers. In: Procs. 2022 American Society of Engineering Education Conference. Minnesota USA: Minneapolis; June 2022

[38] Available from: https://unreasonablegroup.com/ventures/brck [Accessed January 4, 2023]

[39] Available from: https://brck.com/brck-education-kio-and-kio-kit-launch/ [Accessed January 4, 2023]

[40] Available from: https://www.indiamart.com/proddetail/datawind-7sc-tablet-18522341797.html [Accessed January 4, 2023]

[41] Available from: https://indianexpress.com/article/technology/mobile-tabs/tablet-sales-grow-to-4-4-million-in-india-datawind-on-top-cmr-study/ [Accessed January 4, 2023]

[42] Available from: https://fundaciontelefonica.com.ec/educacion/profuturo/

Chapter 3

Entrepreneurship in Emerging Economies: The Role of Innovation and Institutions

Gabriela Prelipcean and Alexandra Ungureanu

Abstract

Economists anticipate the future of the economy based on objective analysis, but for these forecasts to be taken into consideration by the economic environment, they must be founded on knowledge of the processes that drive rational expectations and opportunity decision-making. Due to these factors, the chapter we propose examines the emergence of these opportunities as a consequence of economic progress occurring primarily in innovation-based economies. Firstly, entrepreneurial opportunities are significantly influenced by innovation, as a result of both the numerous inventions produced by local entrepreneurs in developing economies and the entrepreneurial practices of those in advanced economies, where innovative concepts are generated and then exported to emerging economies to be implemented in particular local environments. Secondly, there are several different circumstances in which entrepreneurs innovate. A significant focus has been given to the SME sector over the last decade since it dominates emerging economies and contributes to development, but not to its maximum potential due to unique innovation challenges; lastly, strong institutional environments and efficient innovation systems are required to generate opportunities since they have a significant impact on entrepreneurs' innovative behavior and assist in explaining why individuals with basically similar characteristics act differently in various contexts.

Keywords: entrepreneurship, entrepreneurial ecosystem, innovation, economic growth, globalization, knowledge-based economy, learning organizations

1. Introduction

Sustainable and extensive growth in per capita income is the cornerstone of economic development, which is also preceded by changes in the structural nature of an economy that is centered on products with increased added value and more effective manufacturing processes. Entrepreneurs can assist the economy in growing by creating innovative strategies to redistribute resources, reforming consumption habits that do not generate the greatest benefit, and supporting structural reforms. Additionally, they might do this by accomplishing the activities involved in cost discovery, eliminating any gaps, and finalizing the economy's inputs. The potential role of entrepreneurs as innovators in emerging economies is still underestimated, despite

the fact that entrepreneurship operates in a globalized economy. Entrepreneurs are typically innovative, creating new markets and technology for future sustainable development along with procedures that aim to increase knowledge in the entrepreneurial environment, according to Joseph Schumpeter (1883–1950), who made this statement a century ago.

Nevertheless, it is a common misconception that low-income developing nations, in contrast to those with advanced economies, are unlikely to experience economic growth due to their entrepreneurial spirit. A significant proportion of the economic literature has been devoted to the conditions that drive entrepreneurs to innovate as well as the structure and evolution of national innovation systems. However, research in the nexus of entrepreneurship, innovation, and development is still in its inception. In general, this literature has focused on the innovation process and its dynamics in advanced economies. In this regard, analyses based on the indicators that constitute the entrepreneurial ecosystems attempt to provide answers to queries such as:

1. How does innovation affect development?

2. How and in what circumstances do entrepreneurs in emerging economies innovate?

3. What can be done to encourage entrepreneurs in developing countries to innovate?

In order to provide answers to the previous questions, it is necessary to define the concepts "entrepreneurship" and "innovation," as well as give a brief overview of the current collection of data regarding the influence of the determinants of innovation and the relevance of policies and the institutional environment for promoting innovation.

2. Entrepreneurship of the twenty-first century: Conceptual boundaries

Generally, the field of entrepreneurship analyzes the conditions under which, why, when, and how changes to produce, identify, and employ resources might lead to development. As a result, the spectrum of opportunity identification and exploitation could be used to describe a wide understanding of entrepreneurship, although not all opportunities for exploitation will automatically serve the interests of society. The intention of an entrepreneur is to engage in profitable entrepreneurial activity, which includes identifying, seizing, and using opportunities inside already-existing businesses (or by establishing new businesses) in order to foster innovation by providing innovative services or goods [1]. Before defining what is meant by this innovation, we must consider that three main conceptual approaches to entrepreneurship can be distinguished in the specialized literature. The first approach focuses on the entrepreneurial function, the second on firm performance, and the third on owner-operated firms. The functional perspective is concerned with the dynamic actors who make key decisions about investment, production, innovation, location, or research and development [2]. This definition of entrepreneurship encompasses more than just entrepreneurs running their own businesses. Additionally, it covers the various dynamic entrepreneurs operating within the organizations, whether they serve as managers of multinational corporations, state-owned firms, or non-profits.

According to this perspective, entrepreneurship relates to dynamism, innovation, and innovation as a behavioral attribute. Similar to the early Schumpeterian tradition, it is difficult to distinguish between creative activity and entrepreneurial activity since they are both forms of behavior.

The second line of research focuses on the firm as a key economic actor. These include owner-operated firms, joint-stock companies, state-owned firms, joint ventures, and subsidiaries of multinationals.

The third area of study focuses on owner-operated businesses, a significant subset of enterprises. A person who owns and actively manages his own company is referred to as an entrepreneur. Small and medium-sized enterprises (SMEs) and self-employment are frequently the subjects of this discussion. At the same time, it aims to draw attention to the difference between high-potential creative organizations that endure and flourish and stagnant enterprises that barely make it through the market or dissolve. Start-ups are a subcategory of businesses that attract special attention, particularly in the context of Global Entrepreneurship Monitor (GEM) activities, which offers global estimates of Total Early-Stage Entrepreneurial Activity (TEA) indicators. We must not overlook that occasionally extremely large organizations are also managed by their entrepreneurial owners, even if the focus of this research direction is on SMEs [3].

3. Innovation and entrepreneurship: The importance and effects of association

If one adheres to the Schumpeterian tradition of identifying the pursuit of new combinations as the primary attribute of entrepreneurship, it becomes challenging to distinguish between entrepreneurship and innovation because the entrepreneur is seen as the main protagonist of dynamic capitalism [4]. Entrepreneurs frequently combine new things, such as new markets, materials, goods, and organizational structures. These elements make the terms "entrepreneurship" and "innovation" nearly interchangeable. A difference between the two forms of competition—often referred to as Schumpeter Mark I and Schumpeter Mark II—must be established from the above standpoint, which is based on the later works of Joseph Schumpeter (1883–1950). Entrepreneurs and small enterprises are in charge of innovation in Mark I. The dominant players in the Schumpeterian Mark II competition are huge oligopolistic businesses. Innovation is a distinct component of entrepreneurship, therefore it develops in research and development facilities rather than in management bureaucracies where the entrepreneurial role is assigned [5].

The drawback of Mark's identification of innovation with entrepreneurship is that it prevents us from differentiating between inventive and non-creative entrepreneurship, stagnant and destructive entrepreneurship, high-growth entrepreneurship, and survival entrepreneurship. Additionally, it ignores the fact that many innovations take place in businesses that are supervised by managers as opposed to entrepreneurs. Therefore, it makes analytical sense from the standpoint of development to distinguish between entrepreneurship and innovation as separate important drivers in development. Entrepreneurial businesses are not the only sources of invention; some are significantly more inventive than others. An entrepreneurial spirit that is more noticeable in certain individuals than others can determine how inventive a nation is, which highlights the need of pinpointing the variables that influence innovative performance [6]. Some of the reasons may be attributed to aspects of the business or the owner, such as their background

and experience, the size and age of their company, or their organizational culture. However, there is also a concern regarding how market factors, government regulations, and the institutional setting may either encourage or inhibit creative behavior.

Schumpeter provided the essential justification for the concept that entrepreneurs are creative thinkers. However, Adam Smith also contributed with a crucial insight when he stated that, while acting in their own best interests, entrepreneurs may also help society as a whole. He considered that there was a correlation between the entrepreneur's level of technological innovation, specialization, market size, and performance. Thus, markets can be considered key development drivers as a result.

However, markets do not perform this function in the most underdeveloped emerging nations. As a result of inadequate infrastructure, low per capita income, defective policies, and institutional limitations, developing markets are frequently small, fragmented, and inefficient. Markets frequently operate without good governance, predictability, openness, as well as other institutional requirements. It is challenging for innovations to proliferate where markets are constrained by trade restrictions (natural obstacles like a lack of infrastructure or man-made barriers). Over time, new concepts and technology have been introduced to traders through international commerce. This is one of the factors that contribute to trade's effectiveness as a growth driver. There is almost no motivation for entrepreneurs to deliver breakthrough inventions to the company when markets are constrained by insufficient regulation or suffocated by oppressive monopolies and governments [7]. Entrepreneurs will not be motivated to invest in brand-new domestic or new global inventions if insufficient property rights and lax contractual enforcement impact the dangers of returning to inventive activities.

3.1 The impact of innovation on development

Modern growth and development theories are built around innovation. Innovations have replaced more conventional elements like costs, technological advancements in both products and processes, and other criteria in determining competitiveness and corporate success. The global economy has seen a rise in knowledge-based competition. Innovation and technical development are now essential components of growth, even in traditional economic sectors like the textile industry. The very same certainly applies to service industries including retail, distribution, finance, and information technology. The modernization of manufacturing processes through technology, the transition to higher value-added activities in global value chains, and changes in the structure of the economy are all linked to innovation. New generations of tools and machinery as well as younger, more educated labor generations are indicators of technological evolution [8]. As a result of formal and informal investments in research and development, as well as on-the-job learning abilities, there are also unaltered advancements in product and process technology. Consolidated technical change raises total factor productivity, explaining the variance in economic growth rates between nations. When combined with improvements in product quality and resource efficiency, this leads to a wider variety of goods and services.

Lipsey, Carlaw, and Bekar briefly summarize this significant effect of technological change as follows: "People living in the first decade of the 20th century did not know modern dental and medical equipment, penicillin, surgery, safe births, genetic disease control, personal computers, compact discs, television channels, automobiles, fast opportunities and cheap worldwide, travel, affordable universities, central heating, air conditioning ... technological change has made all of these things possible" [9].

Both the theory of endogenous growth and the theory of evolution emphasize that investments in knowledge have increasing returns because of favorable externalities and the dissemination of knowledge among economic actors, whereas traditional factors of production like labor or capital are subject to decreasing returns. According to endogenous growth theory, more developed economies gain from knowledge investment than less developed ones do due to their superior innovation processes. First, the most developed economies continue to have a significant concentration of research and development and scientific endeavors. Thus, the theory of endogenous growth aids in our understanding of the process through which rich and poor countries in the global economy experience a divergence in per capita income.

But in underdeveloped nations, creativity and technological advancements can drive fast growth. The fact that numerous poor nations have seen their economies revive at a quick pace amid an increasingly unequal global economy is something that endogenous growth theory overlooks. To accomplish fast growth, they were able to absorb in and inventively adapt foreign technological know-how. Growth and evolution theories claim that evolving economies can benefit from technological lag, gaining access to new technologies without having to face the full costs and risks of making an investment in new knowledge [10].

Clearly, the social and absorptive capacities of developing nations determine whether they can benefit from the technical delay. Therefore, innovation is vital for developing nations because it involves more than just creating new products or processes; it also involves having the ability to creatively use technology. When a nation's absorptive capacities are sufficiently advanced, extremely fast economic growth in a technologically backward nation is not exceptional.

The classic concept of macroeconomic growth is a black box that contains inputs and outputs, therefore now is the optimal time for the entrepreneur to intervene and cause change. By allowing the investigation of the traits and potentials of various business types and entrepreneurs who are in charge of capital accumulation, employee engagement, structural changes, and the creation or adoption of new technologies, the field of entrepreneurship research attempts to unlock this closed box. Entrepreneurs behave in the economic context in which they operate, responding to opportunities, challenges, uncertainties, restrictions, and incentives [11]. This quality places entrepreneurship at the core of societal advancement and economic progress.

Entrepreneurs in developing nations shape the pace of technological advancement and the structural transformation of the economy through developing, commercializing, and adopting new ideas. Technology is applied and disseminated by entrepreneurs in a way that raises the overall productivity of the components employed in the development processes, frequently through starting or growing businesses. Entrepreneurs' ingenuity, aptitude, dynamism, and inventiveness are critical elements of absorptive capacity, the defining characteristic of successful development experiences. The manner in which entrepreneurs execute this function will change depending on the stage of development a country is in [12].

The context of developing nations must be taken into consideration. Innovative entrepreneurs in less developed countries initially concentrate on making small adjustments to already-existing international projects rather than taking the risky step of developing brand-new goods and technologies. The difficulties faced by entrepreneurs will vary as the economy develops since they will gradually transition to fresh, worldwide innovations in the subsequent stages.

Even if a growing market is one of the conditions for innovation, this hypothesis will fall short given how intensely innovation is being pursued globally. Public policy

is becoming more widely acknowledged to play a vital supporting role in encouraging entrepreneurial innovation because of the beneficial externalities associated with an investment in information, technological advancement, and human capital. Entrepreneurs with a wealth of knowledge, experience, and talent are necessary, but innovation also calls for specialized labor.

The discussion of economic growth in both developed and emerging economies now regularly includes innovation policy and national innovation systems [13]. In fact, the United States, which is regarded as having one of the most entrepreneurial economies in the world, is where the idea of an innovation policy first arose. Successful entrepreneurship has relied heavily on government, investment in the knowledge base, market, and intellectual protection, and state subsidies to support business investment strategies in all advanced economies of the past several decades, particularly in the United States, where the ideology of free-market entrepreneurship is most virulent. The benefits of entrepreneur innovation in developing nations depend on the features of the innovation system in which they are engaged. A developing nation will be more capable to utilize advanced technology as knowledge enters the domestic economy faster, accelerating the rate at which the process of technological modernization takes place [14].

A greater contribution of dynamic entrepreneurship to economic growth is observed in more developed economies than in developing countries, where low levels of human and financial capital, the absence of a robust firm size distribution, and weak institutional frameworks limit the contribution of entrepreneurs. On the other hand, the weaker the innovation system, the more the efforts of individual entrepreneurs will contribute to accelerated economic development and recovery.

3.2 Innovation in the context of globalization

Converting innovations into reality is what is meant by the concept of innovation. A strictly technological approach focuses solely on technological innovation, which is defined as the outcome of technologically knowledge-intensive entrepreneurship, as opposed to product and process advancements. A larger definition of innovation includes the creation of new goods, methods, and sources of supply, as well as the exploitation of emerging markets and the creation of new business models [15]. More gradual developments and extreme inventions can be distinguished from one another. It is essential to remember that innovation also relates to the dissemination of novelty toward other economic actors and does not exclusively refer to the addition of innovation to an existing concept.

The contrast between inventions that are innovative on a global scale, innovative on the domestic market, or innovative on the company level, is critical in the literature on innovation. Globally breakthrough innovations are mostly found in developed economies. It is based on research and development at the frontiers of global knowledge. Innovations will likely be novel to the market or to the enterprise in emerging economies that are slightly farther away from the global technical horizon.

Market innovations in emerging economies are connected to global diffusion and technological adoption. The domestic company introduces new products to the domestic market after they have previously been manufactured overseas. At the corporate level, new innovations correspond to knowledge transfers from the internal economy. Although the idea is already on the market, a specific company is now employing it. What is novel for the company might not always be innovative in the strictest sense. It implies that certain forms of inventions, which are novel to small businesses in emerging nations, can coexist with weak economies and expanding

technological disparities on the global frontier [16]. Similar to entrepreneurship, creative performance has been measured using a range of secondary metrics, including publications, citations, R&D inputs, patents, trademarks, and trademark applications.

4. The new economy: theoretical framework of the knowledge-based economy

Neoclassical economics solely took into account labor and capital in recent decades, but in the modern economy, this approach is no longer regarded as useful or impartial. Like how the latter two supplanted land and labor 200 years ago, capital and energy are being replaced as the key wealth-creating assets by the sheer volume of information and new knowledge. Furthermore, technological advancements in the twenty-first century have changed the majority of wealth-generating strategies from being physical to becoming knowledge-based [17].

The main components of production are knowledge and technology. Knowledge and experience may be instantaneously disseminated around the world due to the increasing mobility of global information and labor, and any advantage a corporation acquires could be erased by overnight competition developments. The only comparative advantage a business will benefit from is its innovation process, which combines technical expertise and creative thinking to address a never-ending stream of business challenges, as well as its capacity to create value from information in the fields of knowledge-based economies and knowledge management in the new information society.

It is difficult to define the knowledge-based economy since it is impossible to specify with any degree of certainty the product that knowledge supports. Perhaps, as a result, there are few definitions that explain the knowledge-based economy in ways that could make it possible to assess and measure it. Several definitions that we thought were pertinent include:

- The knowledge economy tells the story of how modern economic growth has been fostered by the fusion of intellectual and knowledge resources with state-of-the-art technology. These intangibles include human capital, education, equity, research, design, development, and creativity [18].

- The growing knowledge intensity of economic activity and the expansion of business globalization are the two main drivers of the knowledge-based economy. The combined forces of the information technology revolution and the accelerating speed of technological change are the factors causing the increase in knowledge intensity. National and international legislation, as well as the information technology-related communication revolution, are the driving forces behind globalization [19].

It is important to keep in mind that the term *knowledge economy* actually refers to the entire global economic system, which various observers have described as a transition to an information society economy. In an interconnected, international economy where knowledge resources such as the information revolution, know-how, expertise, and intellectual property are much more important than others, the rules and practices that defined success in the industrial economy must be rewritten as part of the transition. Land, natural resources, and even labor are some examples of economic resources [20].

The regulations need to be reexamined, according to analysts in the knowledge-based economy, at the level of businesses and industries in terms of knowledge management and at the level of government policies from the perspective of a knowledge policy. Knowledge and education, also known as human capital, are fundamental concepts in this area of economic activity. Human capital can be viewed as a corporate product, as well as educational and inventive intellectual products and services, which can be exported for a high return or as a productive commodity.

Peter F. Drucker (1909–2005) first described the foundation of the knowledge economy in his book The Effective Executive (1966), where he distinguished between the conventional worker, who uses physical labor to produce goods and services, and the knowledge worker, who uses mental effort to create ideas, information, and knowledge:

> *The fifty-fold rise in the productivity of the manual worker in the manufacturing industry was the most significant and in fact unique contribution of management in the twentieth century. The most significant contribution management must make in the twenty-first century is to boost knowledge workers' and laborers' output in a similar manner. Manufacturing equipment was a company's most valuable asset in the twentieth century. Knowledge workers and their productivity will be the most important resource for any firm in the twenty-first century, whether it is for profit or not. [21]*

The transition to a knowledge-based economy is significant because it distinguishes it from the industrial economy that predominated for the previous 200 years [10]. These variations include:

The information revolution accelerated the transition to knowledge codification and raised its proportion in the knowledge stock of advanced economies. All knowledge that can be reduced to information and codified can now be distributed globally at a low cost. As a result, knowledge gains a number of physical positive qualities. Codification facilitates market transactions and accelerates the spread of knowledge. Additionally, codification reduces the significance of redundant efforts in knowledge acquisition. It minimizes knowledge dispersion by establishing connections between various topics and specializations. With these advances, the growth rate of accessible knowledge stocks is predicted to accelerate, which will be beneficial for economic progress.

Knowledge, skills, and learning—Information and communication technology have significantly decreased costs and improved organizations' capacity to codify their knowledge, process information, and distribute it. In this way, they have changed the overall inventory of knowledge's balance between codified and tacit information. Tactic knowledge in the form of the abilities required to deal with codified knowledge becomes more important than ever due to the accessibility and affordability of information access, as well as the importance of skills and competencies connected to the selection and efficient utilization of information.

The development and application of knowledge, as well as its distribution, are becoming more and more important in the knowledge-based economy. As a result, firms and entire national economies will be more successful if they are effective at gathering, assimilating, and applying knowledge as well as generating it.

4.1 The difference between the knowledge-based economy and the traditional economy

The knowledge-based economy differs from the traditional economy in several key aspects:

- The economy is defined by abundance rather than shortage. Information and knowledge, in contrast to most resources, can be shared and expanded by being used.

- When adequate technologies, methods, markets, and virtual organizations are developed, the effect of localization is significantly reduced in certain economic sectors. On the other hand, localization is consolidated in other economic fields by building business clusters around institutions of higher learning, such as universities and research institutions, that have achieved global recognition.

- Value and prices are highly context-dependent. As a result, the same knowledge or information may have quite different meanings to several individuals, or even the same individual at different points in time.

- When knowledge is embedded into systems or processes, its intrinsic value increases.

- In a knowledge-based enterprise, human capital, or skills, are a critical component of value, yet few companies report competency levels in annual reports.

- Increasingly, communication has been considered to be crucial to the flow of knowledge. Knowledge-based economies, therefore, place a high value on social structures, cultural environments, and other elements impacting social relations.

Decision-makers, managers, and knowledge experts must adopt new methods in order to address these features [22].

4.2 Determinants of the knowledge economy

Business regulations and national competitiveness are evolving as a result of at least three primary driving forces, according to economists who specialize in the knowledge-based economy [20]:

Globalization: The knowledge economy is also fostered by the swift globalization of economic activity. While there have been earlier times when the global economy has been relatively relaxed, the speed and scope of the current phase of globalization are unprecedented.

Increasing Knowledge Intensity: Over the past 20 years, the usage of information and communication technology has proliferated across all spheres of business and public life. Falling processing costs and the fast creation of apps suited to user requirements were the driving forces behind this expansion. The ability to manipulate, store, and transport massive amounts of data at extremely low cost is the economic revolution's key element.

The permeability of these technologies is an important factor as well. The application of knowledge in all sectors of the economy is substantially aided by the marginal cost of handling, storing, and transmitting information being nearly negligible, and the knowledge intensity of economic operations has significantly increased.

Computer networks and connectivity: Due to the growth generated by the flow of information, computer networks, and connectivity—part of the IT revolution—play a significant role in the development of each and every economy. This is something that developing nations have acknowledged, and they are actively working to leverage ICT as a platform for socioeconomic development.

E-commerce is a growing economic sector that will likely expand much more significantly in the years to come. According to estimations, there are currently hundreds of millions of Internet trade orders, but within a decade there will probably be billions. Because we now live in a networked environment, enterprises must undergo a significant transition. ICT has the power to reshape businesses, workplaces, and the global economy [23]. Geographical boundaries would vanish with the advent of the new economy, which would be represented by the growth of the Internet.

The growth of knowledge as a factor of production and its effects on skills, learning, organization, and innovation can be used to describe the evolution of the knowledge-based economy. There are several positive aspects of this form of economy, including [24]:

- The partial loss of tacit knowledge results from a change in the balance of the stock of information caused by an increase in the codification of knowledge.
- Codification encourages a change in the structure and organization of production.
- Information and communication technologies encourage the spread of knowledge through re-invention by lowering the financial outlays needed for a specific level of expertise.
- Since knowledge is not exhausted through consumption, the rate at which it is accumulating is good for economic progress.
- Codification leads to convergence, which overcomes diverse domains of expertise, decreases knowledge dispersion, and speeds up the transfer of knowledge.
- The accelerated rate of encoding and information gathering causes a shift in emphasis toward tacit abilities.
- Learning, which includes both formal schooling and learning via doing, utilizing, and interacting, is becoming more and more vital for both individuals and businesses.
- Initiative, inventiveness, problem-solving, and a willingness to adapt to change are becoming increasingly critical abilities.
- The conventional economic concept needs to be reexamined because the knowledge-based economy differs fundamentally from the resource-based system of the previous century.

5. The role of institutions in fostering entrepreneurship

Interactions between institutions and the business environment are also fundamental for economic and social development. The difficulties that emerge in these partnerships might inhibit entrepreneurs' desire to invest, which would be detrimental to both parties because it decreases the productivity of the businesses and consequently reduces the level of public sector funding in these circumstances, new institutional

strategies are required to address the interchange issues that stimulate economic growth and significantly affect the nature of economic development. A phenomenon that we can refer to as Institutional Economics is produced as a consequence of the role that institutions play in the development of entrepreneurship [25]. This phenomenon suggests a particular method for examining theoretical and real-world economic issues in relation to social and institutional developments. With this method, the connections between economic and non-economic processes can be better understood [26]. The functioning of phenomena including economic agent behavior, supply and demand laws, market mechanism activity, and transaction management is based on widely accepted institutions [27]. These institutions' principal purpose is to establish standards or basic rules that control behavior and influence how entrepreneurs interact with one another in the entrepreneurial ecosystem. Institutions are essentially the civic or organizational norms that facilitate interaction between entrepreneurs by helping them establish reasonable expectations that one can have toward the other.

At the same time, plays the role of controlled models of human interactions, and the term *institution* refers to both formal rules and their application characteristics as well as informal limitations. This idea also outlines a certain way that social and political connections are organized in accordance with the laws that have been developed in various domains of endeavor. Thus, it is possible to distinguish between two notions of institutions: the first refers to the idea of an institution as a set of policies guiding people's behavior and the second is the idea of an institution as a distinct entity [28]. In some circumstances, it is reasonably obvious to distinguish between institutions as a set of regulations and institutions as actual entities or organizations. This category includes businesses, labor unions, and political parties. Guidelines for how these entities should be represented are on the one hand, and the organizations that have been designated as such are on the other. The institutions that govern transactions specify whose preferences matter and how these preferences will be taken into account during the process of production, distribution, and consumption is actually the rules that govern economic interactions and relationships. By creating a solid framework for how people interact with the economy, institutions serve as a primary tool for increasing human behavior predictability and reducing uncertainty. As a result, the term institution can be defined as a system of laws that can decrease the uncertainty that is frequently linked to human conduct while initiating, launching, developing, and completing transactions [29, 30]. The analysis that tracks the linkages with various types of institutions is referred to as "the function of institutions in the impact that entrepreneurship has on economic development" [31].

The requirement for entrepreneurial education is the first aspect that stands out when considering ties with academic and research institutes. Modern civilization places higher demands on the educational system, resulting in a social structure that did not exist before. These changes are primarily brought about by the substantial developments of the last few decades and the demand for proactive, independent individuals who can integrate into society and participate in its ongoing development. In this context, educational institutions at all levels must adopt particular twenty-first-century tools and methods to provide the ideal educational environment and foster creativity, innovation, and the capacity for a global perspective [32]. The capacity to develop leadership and interpersonal skills through an entrepreneurial mindset is a significant asset that is gaining a growing amount of attention. The entrepreneurial spirit and innovation emerge in new approaches to learning, living, and working. For the incorporation of entrepreneurship and innovation [33], transdisciplinary approaches, and interactive teaching methods in education, different

models, architectures, and standards are expected. Undoubtedly, current systems must be evaluated, and the worldwide educational system needs to be fundamentally reformed. In order to provide the economic environment with a workforce that is educated and capable of fostering economic development, changes in the educational system are required at all levels [34]. These improvements should focus on the process of continuous learning as well as the essential connections and interactions between levels (secondary, high school, higher, and continuing education). On the other hand, time is critical to bear in mind this relationship's vulnerability, which is the formation of institutional commitment. Institutions of higher learning must alter their curricula to support the development of twenty-first-century competencies [35]. In this regard, institutional commitment is essential, along with clear strategies and realistic action plans. However, at moment, there is no concrete application of any discussions relating to entrepreneurship education in terms that students may use. Academic institutions must turn the debates' conclusions into practice, which involves providing students and instructors with the appropriate motivation and support. At this time, governments everywhere must act to narrow the widening competency gaps. At the highest political levels, there must be a consistent and unequivocal commitment to this. Both the strategic framework within which schools and universities can work to implement programs and activities inside their institutions, as well as a clear signal of support for entrepreneurship, should be conveyed through policies. Better action and coordination are required at the national, regional, and local levels to achieve objectives [36]. A key component of developing policies and implementing programs is including stakeholders from academia, industry, the NGO sector, and institutions.

5.1 Learning organizations and innovation systems

In a knowledge-based economy, companies search for connections to foster interactive learning among companies and outside partners and networks search for methods to offer complementary assets. Through these connections, businesses can access cutting-edge research findings, obtain vital technology components, reduce the costs and risks of innovation, and pool resources for production, marketing, and distribution [37]. Companies choose the tasks they will carry out on their own, collaboratively with other enterprises, with universities or research organizations, and with government support as they create new goods and processes. Thus, innovation is the outcome of various interactions between institutions and actors, which collectively make up an innovation system [38]. The interactions within these systems have an impact on how innovatively successful businesses perform, which in turn has an impact on the economy. These innovation systems are made up of the flows and relationships between emerging industry, government, and academia, as well as the advancement of science and technology. Therefore, one factor influencing prosperity is the system's ability for knowledge distribution, or its capacity to guarantee innovators' timely access to relevant knowledge resources.

In a knowledge-based economy, knowledge serves as the primary resource. The level of knowledge and information incorporation in economic activity is now so high that it results in rather significant structural and qualitative changes in how the economy functions, altering the foundation of competitive advantage. The value of knowledge has increased for all economic system participants as a result of the growing competitiveness of the global knowledge economy and our willingness to disseminate knowledge [39]. This has significant ramifications for company goals, governmental policies, as well as the institutions and processes in place to control economic behaviors.

A system of consumption and production based on intellectual capital is known as the new economy. It often makes up a sizable portion of all economic activity in developed nations. In the knowledge-based economy, intangible assets, such as the value of employees' knowledge or intellectual capital, can account for a sizeable portion of a company's worth [40]. However, businesses are not authorized to incorporate these assets on their balance sheets in accordance with generally accepted accounting policies. The global economy has transitioned to a knowledge-based economy in the digital era, bringing with it the best practices from each country's economic growth [41]. Additionally, knowledge-based development elements produce an interconnected global economy where information sources, such as human expertise, are critical drivers of economic growth and are regarded as significant economic assets.

6. Conclusions

Economic development benefits remarkably from entrepreneurship. The approach considered to be the most important is innovation, which includes creating new goods and procedures, finding untapped sources of supply, coming up with creative ways to manage a business, as well as leveraging on new markets. The main contribution of analyses in innovation-driven countries is a broader knowledge of the causes and effects of innovation in developing countries, as well as of the institutions and policies that promote or inhibit innovation. Three important conclusions that may be drawn from this chapter are as follows:

- In all societies and institutional frameworks, the influence of innovation is crucial. Depending on the stage of economic growth, innovation will take various forms and serve various functions. Even if they are incremental in nature, entrepreneurs in low-income developing nations provide inventions that are vital for business and development. The process through which businesses improve and put into practice the design and manufacturing of goods and services that are new to them is known as innovation in emerging countries. Numerous improvements in product quality and design, organizational changes in the manufacturing industry, innovative marketing strategies, and revolutionary production methods all assist in reducing costs, boosting productivity, adapting to fluctuating market conditions, and increasing employment. Innovation in developing nations entails modernization and an increase in technological knowledge. The assumption that innovation only matters for the most advanced economies is invalidated by these data. Innovation is essential for creating and sustaining a globalized economy. This is primarily because of the different innovations created by local entrepreneurs in emerging economies. But it also depends on business activity in developed economies, where new ideas are generated and then disseminated to emerging economies to be implemented in specific regional environments.

- Furthermore, there are several different circumstances under which entrepreneurs innovate in emerging economies. Small and medium-sized enterprises, which are prevalent in many emerging economies and contribute to growth but not ideally because of unique innovation-related challenges, have received special attention during the past 10 years. Entrepreneurial criteria including education, age, managerial experience, and access to technological infrastructure significantly drive how they respond to these challenges.

- Finally, the institutional and political environment does have a significant impact on how innovative an entrepreneur is. This aspect explains why entrepreneurs with remarkably comparable characteristics may exhibit divergent outcomes in terms of their innovative performance. To encourage innovation, a solid organizational framework and an efficient innovation infrastructure are needed.

The necessity for both direct and indirect government support for innovation is essential for sustainable development in the twenty-first-century entrepreneurial ecosystem. The business environment, grants for research and development, risk and venture capital assurance, maximizing the potential of migrant workers and the diaspora, enhancing technical and managerial education, expanding infrastructure, and active public partnerships are just a few illustrations of the several different manners this can be accomplished. By fostering competition, an adverse climate can often encourage innovative behavior, and entrepreneurs themselves can serve as catalysts for political and institutional change.

Given the current and upcoming challenges facing global development, entrepreneurial innovation is going to become increasingly important. These include ongoing socioeconomic inequalities as well as the rising susceptibility of nations to outside shocks such as financial crises, calamities, and threats like environmental issues.

Innovative entrepreneurship is fundamental to overcoming these obstacles and seizing the opportunities they offer, and the idea itself ought to be expanded. In particular, increasing roles for social entrepreneurship, public entrepreneurship, institutional entrepreneurship, and even sovereign non-state entrepreneurship are examined.

To better comprehend the innovative contributions of various business types and forms of entrepreneurship in countries with various levels of development, it is important to comprehend the current challenges:

1. Are conglomerates or SMEs the main drivers of innovation?

2. What is the innovative potential of microbusinesses in developing nations?

3. What are the contributions of SMEs and what of multinationals?

4. What part can public enterprises play in innovation?

The current chapter has improved our understanding of how different forms of entrepreneurship prosper in different environments and at different stages of development. However, we definitely must conduct additional research and analysis and look for the most appropriate patterns for different configurations and developmental stages.

It is still difficult to create institutions, groups, and regulations that successfully encourage both invention and entrepreneurship. The fact that developing nations usually lack the capacity and resources to conduct significant, evidence-based research makes this process increasingly challenging. Future research will concentrate on how to react to the junction of the fields of entrepreneurship, development economics, and innovation studies in order to support this argument.

Several dynamic influences, such technology advancement, economic fluctuations, or demographic shifts, have reshaped societies all over the world and provided new challenges as well as opportunities to business ecosystems. Governments, public and private organizations, as well as economic actors, are gradually becoming more conscious of the significance of entrepreneurship, which is seen as a multifaceted

phenomenon and one of the leading drivers of economic development on all stages, from the local to the global level.

Scientific research on entrepreneurship and economic development became more prominent in the second decade of the twenty-first century, alongside technological innovation. Both concepts have established themselves as significant research topics for economists and researchers around the world who, in the context of globalization, have worked to develop new indicators that could quantify the impacts of the two beliefs. Additionally, there is increasing interest in the nexus between entrepreneurship and economic development as a method of explaining changes in economic performance throughout time. Entrepreneurship, a common component of human activity, is critical to the growth of the economy. Today, entrepreneurship is widely recognized as an important element of economic progress on a global scale by professionals and academics everywhere.

However, entrepreneurship has both positive and negative effects on economic growth. Economic development and entrepreneurship are now closely linked in today's modern global economy, and economic progress can emerge from the creation of a critical mass of effective policies and initiatives. This transition requires the implementation of an adapted strategy and governance, which is particularly difficult for large corporations. These conglomerates will be under pressure to advocate for the establishment of a separate sector for artificial intelligence and spin-offs. To avoid the imbalance between businesses that can apply AI compared to those that cannot, it is necessary to take into consideration and leverage the fact that the overwhelming majority of AI investors are actually the leading players in the technology economy.

A significant increase in productivity results from the economic utilization of artificial intelligence. As a technical innovation, it contributes to both the inputs—consumer goods or services—and the outputs—internal processes like management, logistics, or customer service. A substantial loss of competitiveness could result from the inability to adapt to these technologies. However, it is important to consider the risks associated with economic dependency, sovereignty, and the potential for increased inequality. It is imperative to remove the possibility of turning businesses into consumers of solutions created offshore given the current structure of the digital economy. The platforming and value-capturing effects that are now characteristic of the digital economy could then be further improved by the development of artificial intelligence. Few actors in the economic arena have the data and computational resources that this development requires. The ability to interpret these technologies' significance and contents also need to be preserved due to their ability to be used as decision-supporting or even decision-making tools. This is important because the dissemination of artificial intelligence-derived technologies has the potential to cause significant social and territorial inequality, particularly because of the concentration of wealth in some areas.

The global business environment is evolving due to the digital revolution, which has changed methods and approaches for creating economic ecosystems as well as processes and systems. To be competitive in the context of global competitiveness, companies worldwide must take advantage of this new environment. The establishment of start-ups and the transformation of existing businesses through the development of new digital technologies are generally understood as examples of the digitization of entrepreneurship. These activities are perceived as a pillar of innovation, prosperity, and employment generation in many economies. As we observe a variety of global initiatives aimed at stimulating the acceleration of entrepreneurial activity, a holistic and integrated approach is required. A nation's capacity for digital entrepreneurship mainly relies on digital entrepreneurial behavior, culture, and strategies, as well as an

innovation ecosystem where governments, industries, businesses, educational institutions, and NGOs operate around each other. Entrepreneurship thrives in ecosystems where all stakeholders take an active role. Education and practice in particular should be more integrated to guarantee that future abilities meet employment prospects. Students should be given the chance to experience and practice entrepreneurship education, and the academic environment should be encouraged to connect with the solid business community to incorporate these abilities into the learning process. It is important to raise awareness and increase access to good practice models in order to motivate youngsters to reach their full potential. In this regard, it is essential to broaden partnerships among interested parties.

To ensure sustainable economic development, the strategy's actions must be focused on: fostering cooperation and relationships between institutions and the entrepreneurial ecosystem; establishing business-friendly governance by developing a dialog strategy between the factors involved (public institutions and the business environment); strengthening entrepreneurial capacities; and supporting, encouraging, and promoting local businesses by training providers. The institutions' purpose is to improve the business environment by strengthening the potential of SMEs and their role in economic growth, building confidence between the business community and the government, and overall fostering a more supportive business environment.

The qualities of the entrepreneurial ecosystem that have been emphasized in this chapter's examination of the function of institutions lead us to assume that this relationship is significant because it is a mechanism through which various participants from the public sector, the business community, and non-governmental sector cooperate to enhance the conditions for economic growth and to generate employment. In order to improve the quality of life for everyone in the community, dynamic entrepreneurial culture is built, maintained, and tangible resources are generated for the community and the business environment. The amount of time and money required to establish a strategy and a public-private partnership toward economic growth that is under the control of the community largely depends on the current condition in addition to the expertise and competence of the actors and institutions involved.

Underestimating the institutional framework is the cause of the inadequate performance of businesses in the sector since institutions' primary purpose in society is to eliminate uncertainty by creating a stable foundation for human interactions. Therefore, the slow growth of the entrepreneurial ecosystem has been primarily caused by the absence of sufficient forms of social and political relationship organization. In order to obtain an agreement on these concerns, it is fundamental that the interested parties, the entrepreneurs, are thoroughly consulted in a participatory process when formulating policies for the expansion of entrepreneurship as well as when creating institutions. In contrast to when these structures are imposed by external authorities, the establishment of local institutions that are based on the needs of the economic environment and that would benefit from improved collaboration with the locals can lead to significantly greater performances and reduced costs.

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Author details

Gabriela Prelipcean* and Alexandra Ungureanu
Stefan cel Mare University of Suceava, Romania

*Address all correspondence to: gprelipcean@yahoo.com

References

[1] Bruton GD, Ahlstrom D, Obłój K. Entrepreneurship in emerging economies: Where are we today and where should the research go in the future. Entrepreneurship Theory and Practice. 2007;**32**(1):1-14

[2] Gnyawali DR, Fogel DS. Environments for entrepreneurship development: Key dimensions and research implications. Entrepreneurship Theory and Practice. 1994;**18**(4):43-62

[3] Bruton GD, Filatotchev I, Si S, Wright M. Entrepreneurship and strategy in emerging economies. Strategic Entrepreneurship Journal. 2013;**7**(3):169-180

[4] Koellinger PD. Why are some entrepreneurs more innovative than others? Small Business Economics. 2007;**31**(1):21-37

[5] Duxbury T. Creativity: Linking theory and practice for entrepreneurs. Technology Innovation Management Review. 2012;**2**(8):10-15 10.22215/timreview/594

[6] Scase R. The role of small businesses in the economic transformation of Eastern Europe: Real but relatively unimportant? International Small Business Journal. 1997;**16**(1):13-21

[7] Manolova TS, Eunni RV, Gyoshev BS. Institutional environments for entrepreneurship: Evidence from emerging economies in Eastern Europe. Entrepreneurship Theory and Practice. 2007;**32**(1):203-218

[8] Coulibaly SK, Erbao C, Mekongcho TM. Economic globalization, entrepreneurship, and development. Technological Forecasting and Social Change. 2018;**127**:271-280

[9] Lipsey RG, Carlaw KI, Bekar CT. Economic Transformations: General Purpose Technologies and Long-Term Economic Growth. Oxford: Oxford University Press; 2005

[10] Mandeville TA. Understanding Novelty: Information, Technological Change and the Patent System. Norwood, NJ: Ablex Publishing Corporation; 1996, ISBN 0-89391-632-3. pp. 41-44

[11] Lee SM, Peterson SJ. Culture, entrepreneurial orientation, and global competitiveness. Journal of World Business. 2000;**35**(4):401-416

[12] Pohoata I. Strategies and Policies for Sustainable Development. University "Alexandru Ioan Cuza" – Science Center for European Studies; Iasi, Romania; 2012

[13] Edler J, Facerberg J. Innovation policy: What, why, and how, Oxford Review of Economic Policy. 2017;**33**(1):2-23. DOI: 10.1093/oxrep/grx001

[14] Cristea DS, Matei D. Knowledge society, general framework for knowledge-based economy. Annals - Economy Series. 2011;**1**:145-156

[15] Khajeheian D. A perspective on media entrepreneurship policy: Globalization of knowledge and the opportunities for developing economies. Journal of Globalization Studies. 2014;**5**:3-16

[16] Butenko NV, Berdar MM. The networking features of entrepreneurship in the context of globalization. Business Inform. 2020;**2**(505):218-224

[17] Fathollahi M, Momeni F, Elahi N, Najafi SM. An appropriate theoretical framework for understanding and analyzing economic issues in a

knowledge-based economy. Journal of the Knowledge Economy. 2017;**8**(3):957-976

[18] Mohamed MM, Liu P, Nie G. Do knowledge economy indicators affect economic growth? Evidence from developing countries. Sustainability (Basel). 2022;**14**(8):4774

[19] Lee M, Yun JJ, Pyka A, Won D, Kodama F, Schiuma G, et al. How to respond to the fourth industrial revolution, or the second information technology revolution? Dynamic new combinations between technology, market, and society through open innovation. Journal of Open Innovation. 2018;**4**(3):21

[20] Saisana M, Munda G. Knowledge Economy: Measures and Drivers. Italy: European Commission, Joint Research Centre Institute for the Protection and Security of the Citizen Centre for Research on Lifelong Learning (CRELL); 2008, ISBN 978-92-79-09703-4. pp. 15-21

[21] Drucker PF. The Effective Executive. New York, United States: Harper Business; 2006. ISBN: 9780060833459

[22] Mensah MS, Enu-kwesi F. Research collaboration for a knowledge-based economy: Towards a conceptual framework. Triple Helix (Heidelberg). 2018;**5**(1):1-17

[23] Prelipcean G, Boscoianu M. Emerging Applications of the New Paradigm of Intelligent Decision Making Process: Hybrid Decision Support Systems for Virtual Enterprise (DSS-VE). In: Jao C, editor. London: IntechOpen; 2012. https://doi.org/10.5772/51817.

[24] Kolvereid L, Obłój K. Entrepreneurship in emerging versus mature economies: An exploratory survey. International Small Business Journal. 1994;**12**(4):14-27

[25] Donina IA, Lyakh YA, Khachaturova KR. Role of educational institutions in shaping the ecosystem of the region. Proceedings of the International Scientific and Practical Conference Strategy of Development of Regional Ecosystems "Education-Science-Industry" (ISPCR 2021), Atlantis Press International BV, Advances in Economics, Business and Management Research. 2022;**208**:570-578

[26] Prelipcean G, Boscoianu M, Lupan M, Nastase CE. Innovative financing solutions based on venture capital and private equity to support the development of entrepreneurship in Romania. Transformations in Business and Economics. 2014;**13**(3C):331-347

[27] Clayton P. Understanding the public procurement of innovation public procurement and innovation: The role of institutions by Max Rolfstam. Scientific Public Policy. 2015;**42**(5):738-739

[28] Bruton GD, Fried VH, Manigart S. Institutional influences on the worldwide expansion of venture capital. Entrepreneurship Theory and Practice. 2005;**29**(6):737-760

[29] Hirsch PM, Lounsbury M. Ending the family quarrel: Toward a reconciliation of "old" and "new" institutionalism. Academy of Management. 1997;**40**(4):406-418

[30] Boscoianu M, Prelipcean G, Lupan M. Innovation enterprise as a vehicle for sustainable development - A general framework for the design of typical strategies based on enterprise systems engineering, dynamic capabilities, and option thinking. Journal of Cleaner Production. 2018;**172**:3498-3507. DOI: 10.1016/j.jclepro.2017.06.120

[31] Veblen T. The Theory of the Leisure Class: An Economic Study in the Evolution of Institutions. New York: Adegi Graphics LLC; 2000. p. 412 ISBN: 9781402197956

[32] Balan IM. The importance of entrepreneurial education for the business environment. Romanian Journal of Economics. 2021;**2**(62):68-77

[33] Boscoianu M, Prelipcean G, Calefariu E, Lupan M. Innovative instruments for SME financing in Romania – a new proposal with interesting implications on markets and institutions. Procedia Economics and Finance. 2015;**32**:240-255

[34] Roncancio-Marin JJ, Dentchev NA, Guerrero M, Diaz-Gonzalez AA. Shaping the social orientation of academic entrepreneurship: An exploratory study. International Journal of Entrepreneurship Behavior Research. 2022;**28**(7):1679-1701. DOI: 10.1108/IJEBR-07-2021-0600

[35] Fillis I, Rentschler R. The role of creativity in entrepreneurship. Journal of Enterpreneurial Culture. 2010;**18**(1):49-81

[36] Prelipcean G, Ungureanu A. Economic development of the Northeastern Region of Romania through the absorption of European funds. A case study of the Antur project. Ecoforum Journal. 2022;**11**(3):1-7. Available from: http://www.ecoforumjournal.ro/index.php/eco/article/view/1413/837

[37] Satalkina L, Steiner G. Digital entrepreneurship and its role in innovation systems: A systematic literature review as a basis for future research avenues for sustainable transitions. Sustainability (Basel). 2020;**12**(7):2764

[38] Srinivasan A, Venkatraman N. Entrepreneurship in digital platforms: A network-centric view. Strategic Entrepreneurship Journal. 2018;**12**(1):54-71

[39] Popkova E, Krivtsov A, Bogoviz A. Digital Economy in the 21 Century: An Introduction to the Institutional Approach. In: Popkova E, Krivtsov A, Bogoviz A, editors. The Institutional Foundations of the Digital Economy in the 21st Century (pp. IX-XII). Berlin, Boston: De Gruyter. DOI: 10.1515/9783110651768-203

[40] Zhensen Z, Gui-jie Q. Analyzing the impact of IT innovation on the development of dynamic capabilities. Journal of Convergence Information Technology. 2013;**8**(9):938-945

[41] Hodgson GM. The Foundation of Evolutionary Economics: 1890-1973. Volume 1. Cheltenham: Edward Elgar Publishing Limited; 1998. p. 368 ISBN: 9781858986616

Chapter 4

Project Coordinator Competence and the Success of International Development (ID) Projects: Standard Models Tested in Practice

Somnoma Edouard Kaboré and Seydou Sané

Abstract

Very few studies address the International Development project coordinators competencies and attempt to identify their correlations with project success. Thus, the objective of this correlational research is to examine, on the basis of the models, the presumed link between 46 project manager competencies and the success of ID project. The research is based on the processing, using SPSS 25.0, of a primary database collected by questionnaire from 45 project manager in Burkina Faso (West Africa). Our results show that commitment, results orientation and conscientiousness are the most relevant competences in the perception of the respondents, while human resources management, cultural aspects and knowledge of the project area are those strongest and positively correlated with the success of ID project. This research shows the importance of human, behavioral and contextual competences and is thus an educational challenge, as these types of competences require learning methods that go beyond traditional practices. The findings of this research can also help the government to recruit the most competent project managers for their official development assistance projects. Not all standard competences defined through the IPMA Competence Baseline (ICB) model are necessarily applicable in all projects. Therefore, this study updates the discussion and downsizes the number of competencies to fewer, more relevant items.

Keywords: international development projects, competencies, project success, project coordinator competence, human resources management

1. Introduction

Burkina Faso (West Africa) is one of the countries heavily dependent on official development assistance (ODA). As an illustration, in 2019, ODA received by the country amounted to US$1549 million (2019 Report, DGCOOP - June-2020)[1]. This international assistance is composed mainly of Grants (1016.56 million US dollars,

[1] Directorate General for Cooperation (www.dgcoop.gov.bf).

or 65.6% of ODA) and Loans (532.16 million US dollars, or 34.4% of ODA). The structure of ODA received in 2019 is characterized by a predominance of project aid (72.2%) over the other types of instruments (Food Aid, Budget Support, Assistance and Emergency Relief). Indeed, projects are the preferred vehicle for aid to developing countries [1, 2]. Project management is therefore now an indispensable process for the delivery of international aid [3]. For example, in June 2020, 211 active development projects distributed among different ministerial departments and institutions were identified in Burkina Faso (DGEP[2], November-2020). They affect several sectors: Health, Nutrition and Population; Agriculture; Transport and Infrastructure; Water and Sanitation; Education, Social Protection; Governance, Environment and Natural Resources, Energy and Mining, etc. Nevertheless, 40.1% of the population still lives below the poverty line with poor access to basic social services such as education, health, drinking water and sanitation (EICVM[3] 2014, INSD[4]). In reality, the results that result from the implementation of international development projects fall far short of expectations. According to the conclusions of the 9th General Assembly of Development Projects and Programs of 2019, only 49.4% of projects have a satisfactory performance out of a total of 227 projects evaluated. Burkina Faso is not an isolated case, especially since Africa is not doing well in this area, since one out of two projects fails [4]. And even in the project management literature, it is recognized that worldwide, the number of projects that fail far outnumber those that succeed [5, 6].

From then on, project success has become a favorite topic among project management researchers and practitioners [7–10]. However, despite the fact that key project success factors have generated a wealth of literature, researchers seem to be silent on best practices, approaches, and techniques for managing international development projects [11, 12]. More recently, many authors have investigated the contribution of project managers to project success, focusing on the relevance of their skills [13–17]. Indeed, the competencies of project manager as well as those of team members are important to ensure the success of the project [18]. To do so, project coordinators must have the appropriate competencies to ensure the effective management of the projects under their responsibility in a complex and uncertain environment [16]. Thus, among the plethora of lists of project manager competencies in the traditional competency universe, Alvarenga et al. [13] identified those that are most important to project success and investigated the correlations between them and the underlying competency groups. Earlier, in research to inventory the competencies of international development and humanitarian action project managers in NGOs, Brière et al. [14] identified a group of eleven competencies related to the human and behavioral dimension, including the local and cultural context. Similarly, based on a qualitative study using content analysis, Li et al. [16] listed twenty-six competencies specific to international engineering project managers in emerging and developing countries. In addition, based on a qualitative analysis focusing on semi-structured interviews, the results of the study by Moradi et al. [19] highlighted ten core competencies for construction project managers. The IPMA (International Project Management Association) has also developed standard competency models (ICB.3; ICB.4). Finally, several other researchers have established repositories of competencies that must be possessed to perform project management [20–23]. However, all of these studies remain conceptual,

[2] Directorate General for the Economy and Planning.

[3] Full Survey of Household Living Conditions (EICVM).

[4] National Institute of Statistics and Demography (INSD).

focusing on mostly qualitative approaches and paying little attention to the context of African international development projects. Similarly, the list of competencies is quite long and there is a lack of benchmarks regarding the effects of these competencies on the success of international development projects, in particular. In other words, very few empirical studies have tested or validated the correlations between these competencies and project success. Moreover, there is little literature on international project managers in developing countries, let alone in African countries [2].

Therefore, this research aims to investigate the perceived importance of competencies in explaining the success of international development projects by adopting a correlational approach. The study is based on primary data collected by questionnaire from 45 international development project coordinators based in Burkina Faso (West Africa).

2. Theoretical background

2.1 Specificities of international development projects (ID projects)

International development projects "are nonprofit projects usually carried by developing country authorities to lift their economies out of underdevelopment or ad hoc difficulties; they are mostly financed by bilateral and multilateral support and involve the various sectors that cover government prerogatives" [8, 24]. As a result, there are certain peculiarities unique to international development project managers [8, 12, 25]. In fact, international development projects focus on outcomes that promote social and behavioral change, including reducing poverty, inequality, and social injustice [3]. They take place in an extremely complex environment characterized by a variety of actors including states and public administrations, national development agencies (bilateral aid), multilateral development agencies and actors (United Nations, European Union, regional organizations, etc.), international financial institutions (World Bank, International Monetary Fund, African Development Bank, Asian Development Bank, etc.), multinational firms, and civil society organizations, particularly NGOs [3]. Recent years have also seen the emergence of various foundations (Bill and Melinda Gates Foundation, Avina Foundation, Center Foundation, etc.) acting not only as funders but also as institutional funders [3]. In addition, international development projects face political, legal, technical, organizational, cultural, etc. challenges that make their management complex [25]. In the same vein, these temporary organizations operate within a highly developed formal normative framework [26], with relative autonomy in terms of their interventions, their timelines and the final results they will present to their donors [27]. Finally, the vast majority of international development projects are based in African countries where the cultural characteristics are different from those in Western countries [2]. In this context, project coordinators are the major actors in these development projects and the focal points of the operational set [28]. As such, in Burkina Faso (West Africa), the coordinators of these international projects are either contractual (private sector) or civil servants (permanent or seconded). Contractual coordinators are independent experts or specialists recruited solely for the implementation of the project, while civil servant coordinators are government employees (civil servants) placed at the disposal of the project during the entire implementation period.

2.2 Success and success dimensions of international development projects

Although the concept of project success has generated an impressive literature, it still remains difficult to define [29]. Indeed, the concept of success remains ambiguous and neither its definition nor its measurement is agreed upon within the research community. It has even been revisited to take into account the real needs of organizations [30]. According to the classic project management literature, project success is considered to be the completion of a project within the constraints of content, schedule, cost, quality, resources, and risk [31]. The success of a project has traditionally been evaluated in relation to strict adherence to the three components of budget, schedule, and quality, identified as the iron triangle [32]. In this sense, a project is successful if it is managed in accordance with the time, cost, and quality triangle [29]. For our part, we define the success of international development projects as *a describable positive change brought about by the project carried out under time, budget and quality constraints and affecting the well-being of beneficiaries in a sustainable way* [33, 34]. In an operational sense, authors such as de Wit [35] and Baccarini [26] invite us to make a distinction between management success and project or deliverable success. For management success is the strict respect of the triangle of time, cost and quality, while project success concerns the success of the project deliverable from the point of view of its end users, for example [27]. In the same way, Cooke-Davies [36] invites us not to confuse success criteria and success factors. This is especially true since project success criteria, also called success dimensions, refer to a set of characteristics or principles for estimating or judging the success of projects, whereas success factors refer to conditions, facts and circumstances that contribute to project results [27].

In terms of the dimensions or criteria of project success, Ika [27] points out that success is whether the project achieved its intended outcomes and impact. However, as mentioned by Diallo and Thuillier [28], it can be difficult to determine the success of a project based solely on its impact, especially since a project may not have the expected impact even if it was very well managed. In the same vein, the success of a hard project (e.g., construction projects) cannot be measured in the same way as the success of a soft project (e.g., education and health projects), much less the success of an international development project and a new product development project [27]. Thus, given that projects do not aim for the same outcomes, it is not advisable to use the same approaches to assess the success of all projects without exception [37]. In other words, the measurement of project success should be considered from a contingent approach, i.e., context-specific [29]. Nevertheless, following a literature review based on project success criteria, Castro et al. [30] invite to consider project success as a multidimensional construct. In this sense, several studies have attempted to identify the different dimensions of project success, particularly international development projects [9, 28, 29]. Among these criteria, particular importance seems to be given to project relevance, achievement of results, impact, efficiency and now sustainability. However, the criteria for success vary according to the perception of the different actors (donors, aid agencies, recipient countries, etc.). For example, in a study of European Union (EU)-funded international development projects in Ethiopia, Bayiley and Teklu [38] classified success criteria according to the perceptions of the Government (the recipient country), NGOs (implementing agencies), and the EU delegation (donor). It appears that the degree of importance of the criteria as perceived varies from one actor to another, although all agree that the criterion of project relevance ranks first among the success dimensions. Finally, full credit should

be given to Diallo and Thuillier [28] who, in an empirical study (the first ever), ask the question of how to measure the success of international development projects and answer it in a fairly convincing manner. Indeed, these two authors conducted their research by processing a primary database collected through questionnaires sent by mail to 600 coordinators of international development projects in Sub-Saharan Africa. They thus proposed a decagon of success dimensions clearly summarized as follows: project management success (achievement of objectives; timeliness; adherence to budget), project success or impact (beneficiary satisfaction with project goods and services; impact on beneficiaries; institutional capacity for the country), and visibility (compliance of goods and services; national visibility of the project; reputation of the project with the funder; likelihood of additional funding) [9, 39]. Moreover, the results of Diallo and Thuillier [28] study show that international development project coordinators seem to place more importance on management success and neglect the impact of success on beneficiaries. In this study, we draw on the project success criteria developed by Diallo and Thuillier [28].

2.3 Project manager competencies in project management literature

The term "competence" is not uniformly defined around the world. Nevertheless, the International Project Management Association (IPMA) uses an easy-to-understand definition that is recognized by most experts and provides valuable recognition in the project world. According to this definition, "individual competencies consist of applying knowledge, skills, and abilities to achieve desired results." Several schools of thought refer to the competencies of project managers: the trait school; the behavioral or style school; the contingency school; the visionary or charismatic school; the emotional intelligence school [40–42]. They suggest that project managers need a range of competencies to be effective and thereby contribute to project success. Some studies address the leadership style of project leaders in relation to project success [43, 44], while others focus on specific contexts [20, 23, 45–47]. Among these skills, several show the importance of human skills [13, 21, 48, 49] or soft skills [14, 47, 50, 51]. Studies conducted on international development project management have identified competencies as one of the key factors for project success and have also identified competencies specific to international development project managers [14, 18, 28].

In addition, several international standards for competences are available [16]. For example, the International Project Management Association develops *IPMA Competence Baseline (ICB)* – [52], which describes the technical competencies (20 competence elements; e.g., project management success, communication, problem resolution), behavioral competences (15 competence elements; e.g., leadership, engagement and motivation, creativity, self-control, reliability, values appreciation, ethics) and contextual competences (11 competence elements; e.g., project orientation, personnel management, finance, legal). Afterwards, it defines also the *Individual Competence Baseline (ICB)*, articulated around 29 competence elements in the areas of people, practice, and perspective [53]. People elements include 10 personal and interpersonal competences (e.g., self-reflection and self-management, personal integrity and reliability, leadership, teamwork, and conflict and crisis). Practice elements define 14 technical aspects of managing projects, (e.g., design, quality, finance, plan and control, procurement, and stakeholders). And perspective elements include five contextual competences (i.e., strategy, governance, structures and processes, and culture and values). Similarly, the Australian Institute of Project Management has also developed a competence standard model, which defines performance competencies in

eight units, according to knowledge areas, differentiating them into three professional levels: project practitioner, manager and director [54].

Moreover, based on existing competence frameworks, Alvarenga et al. [13] surveyed project managers on the importance of 28 project manager competencies to project success. Based on multivariate analysis, they identified seven groups of competencies, such as leadership, self-management, interpersonal, communication, technical, productivity and managerial. Leadership competencies include leadership, decision making, initiative, commitment, management and achievement orientation manager competencies to project success. Self-management competencies include vision, cognition, emotional resilience, self-awareness and political and cultural awareness. Interpersonal competencies include teamwork, perseverance, flexibility and interpersonal relationship. Communication competencies are exclusively soft skills related to the ability to communicate in different contexts: negotiation, communication, customer relationship and conflict management. Technical competencies include experience, authority and technical expertise. Productivity competencies include organization, training and use of technology. Managerial competencies include trouble shooting, delegation and time management. The authors findings' reveal that communication, commitment and leadership appear as the three most relevant aspects. In addition, based on existing standards, Crawford [55] proposed an integrated model of project management competence, which includes input competencies (knowledge, qualifications, skills, and experience), personal competencies (attitudes and behaviors), and output competencies (demonstrable performance). Indeed, input competences mean a person's knowledge and skills, whereas personal competencies are core personality characteristics that a person needs to do a job, while output competences are related to performance and the individual's ability to perform activities in relation to expected performance.

Furthermore, through the analysis of documentation, behavioral event interviews, self-assessment surveys and statistical analyses, Takey and de Carvalho [54] established a project management competence map in an engineering company, and identified four dimensions of project manager competencies, including project management process, technical, personal, and context and business. In the context of construction projects, Cheng et al. [56] adopted a holistic approach, focusing on behavioral competencies, which are associated with the manager's personal characteristics and job-task competences, which are linked to project management function. For his part, El-Saaba [21] identified three main project manager competencies: human skill, conceptual and organizational skill, and technical skill. Human skill represented the most essential project manager skill, and included mobilization, communication, coping with situations, delegation of authority, political sensitivity, high-self esteem and enthusiasm. Conceptual and organizational skill represented a second essential project manager skill, and included skills of planning, organizing, having strong goal orientation, ability to see the project as a whole, ability to visualize the relationship of the individual project to the industry and the community, and strong problem orientation. Technical skill represented, relatively, the least essential project manager skill, and included specialized knowledge in the use of tools and techniques, project knowledge, understanding methods, process and procedures, the technology required, and skill in the use of computers. Dziekoński [20] created a model of construction project managers' competencies in Poland, which includes factors related to the project manager's attributes. The authors identified four factors affecting the construction project managers' competency: basic managerial skills (e.g., intelligence, creativity, ability to deal with a stress, ability to communicate, to

motivate team members and to work in a team), interpersonal abilities supporting managerial skills (e.g., focus on the goals, ability to resolve conflicts, ability to negotiate), emotional intelligence (e.g., empathy, expressing confidence, aspiration), and formal skills (e.g., flexible management style, experience in managing projects) based on clustering method.

Finally, there is very little consensus about specific competencies in project management, but a majority of authors present a list of competencies with typologies that can generally be grouped into three categories: organizational and management competencies, project management or technical competencies, and human skills, soft skills or behaviors competencies [14, 21, 55]. Similarly, previous studies, mostly propose the categories based on qualitative discussions. Quantitative empirical evidence should also be provided to explore the project manager competences importance to project success [16].

2.4 Project manager competencies in the context of international development projects

International cooperation for development organizations have specific characteristics that differentiate them from organizations in other sectors [57]. Unfortunately, the literature tends to ignore this specificity. Moreover, only a few studies have investigated project coordinators competences in the context of ID projects [16]. Thus, considering the characteristics of ID projects, such as high complexity, uncertainty, and institutional distances among stakeholders, it is necessary to explore what competencies are most important for ID project success. In this way, through a questionnaire survey, Ortiz-Marcos et al. [57] identified 15 specific competencies for managing international cooperation engineering projects and rank these competences in terms of importance. These are divided into two main categories: Performance/Knowledge competences (e.g., integration management, scope and time and cost management, quality management, risk management, human resource management, communication management) and personal competences (e.g., orientation toward achieving results, initiative and problem solving, leadership, cooperative teamwork, organizational awareness and commitment, interpersonal relations, negotiation and conflict management). Similarly, based on in-depth interviews, Brière et al. [14] identified 11 most frequently mentioned competences of international development project managers, of which ten are related to human aspects, i.e. adaptability, set of knowledge (general, international development, intercultural), communication, personal qualities, interpersonal skills, leadership, ethics, local network and knowledge, capacity building, and change management. In a recent study, Li et al. [16] explored international project manager competences in emerging and developing countries. They identified 26 competence variables through qualitative content analysis, and then categorize these competences in a structured way by using the quantitative MDS (multidimensional scaling) method. In addition, in the sphere of international cooperation, it was Diallo and Thuillier [1, 28] who conducted the first empirical development project-focused research [57]. These authors explored the relationship between trust and communication and tests the influence of these factors upon project success and success criteria for ID projects financed by multilateral institutions in sub-Saharan Africa. They confirmed the impact of trust and communication on the success of international development projects. Ochieng and Price [58] also confirmed the significance of communication in multicultural construction projects based on case study research. However, these authors' results do not fully account for the

coordinators required competencies effects on the success of international projects. Moreover, trust, commitment, and communication are merely three elements of interpersonal skills of project managers [16]. Overall, prior studies, mostly aimed at sorting the competences in order of importance for international development project managers [16]. Therefore, empirical investigation is necessary to evaluate manager competences effects on international project success based on correlational approach.

3. Research methodology

3.1 Data collection and sample

The primary data collection method was implemented for this research study. Survey questionnaires were administered by personal visits by the researcher as well as use of Google Forms, personal emails with attachments and direct links to the questionnaire. A total of 150 surveys was distributed, of which 45 (response rate of 30%), were returned and useable. The privileged positions, in relation to the African context, that the coordinators occupy mean that they are wary of any investigation into the activities they are piloting. For example, a study examining critical success factors and project success in the context of international development projects in Maldives among project teams reported a modest response rate of 20.5 percent (41 respondents) [10]. Likewise, a study exploring World Bank project success factors and specifically the relationship between critical success factors (CSFs) and project success as perceived by World Bank Task Team Leaders (project supervisors) reported a modest response rate of 12.5 percent (178 respondents) [59], while a similar rate of response (15 percent; 93 respondents) was reported by another study investigating the success of ID projects among project coordinators [1]. Considering that these studies employed convenience sampling and the fact that this study was comparatively small, we believe that the samples collected are adequate for the purpose of this study [10]. The majority of the sample was male (89%) while females constituted 11% of the sample.

3.2 Measure

In a bid to improve the credibility of the questionnaires, we pilot tested them using selected experienced project managers before distributing to respondents. This helped much to refine the questionnaire [38].

Success of ID projects: the instrument developed by Diallo and Thuillier [1, 28] was used. Many researchers (such as [33, 39]) have already empirically validated this instrument. It comprises of 10 items. Sample items include: "the beneficiaries are satisfied with the goods or services generated; the project operated within budget; and the project has a good reputation amongst the principal donors". In addition, the tool was tested in similar donor funded projects and was perceived to be robust enough (α = 0,84) to be a cross-cultural tool.

Competencies of project manager: we used a traditional set of competencies presented in the literature. In fact, we selected 46 competencies based on the ICB 3.0 model and on others works [13, 14, 20, 21, 52]. Ten project coordinators were first selected according to their seniority in project management and a master's or doctorate degree in related fields. They were invited to assess each competency as "essential," "useful, but not essential" or "not necessary" to project success. Thus, all competencies were considered essential by all coordinators.

3.3 Method of data analysis

The study employed descriptive statistics, Spearman correlation and factor analysis answer the research questions. Indeed, data were submitted to parametric tests and a multivariate analysis (exploratory factor analysis). We first used Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy to verify if data was suitable for factor analysis. The exploratory factor analysis was performed using Varimax orthogonal rotation and Kaiser normalization for eigenvalues greater than unity [13]. Finally, the Pearson correlation coefficients of the relationships between competencies and project success were calculated.

4. Results

The study employed descriptive statistics, Spearman correlation and factor analysis answer the research questions. The analysis was performed using SPSS 25.0. We first performed ID project's success factor extraction using the main component's method from the correlation matrix analysis. The KMO index (KMO = 0.739) and the Bartlett's test of sphericity (129.374, degrees of freedom = 28, $p < 0.0001$) indicate factorability of the correlation matrix. In addition, to define the number of factors we considered eigenvalues, total variance explained and the variance explained by each factor. Thus, three dimensions of project success, i.e. "Management", "Impact" and "Visibility" were chosen. To be considered consistent, a factor must be theoretically consistent and have a Cronbach's α greater than 0.6 [13]. In fact, the minimum accepted value for Cronbach's α is usually 0.7 [60]. However, 0.6 is accepted in exploratory research [60]. After several simulations, the best solution was the extraction of three factors (management, visibility and impact) that explain 75.152 percent of the total variance. Varimax was the rotation method that best simplified the factor structure [13]. **Table 1** shows the initial eigenvalues and factors extraction before and after the Varimax rotation. **Table 2** shows the values of communalities. The communality of all items was greater than 0.7. Finally, **Table 3** shows the three underlying project success factors.

Furthermore, ranking of key competencies was done by computing the means. They are ranked according to their perceived importance to the success of the projects. Overall, the respondents all agree that the competencies listed were indeed important to ID project success: all the mean scores of the factors exceed 2.90 (refer **Table 4**). Accordingly, engagement, result orientation, conscientiousness, ability to deal with ambiguity and change, integrity and honesty, ability to work in a team project requirements and objectives, project knowledge, leadership, ability to deal with stress are ten first competencies, respectively ranked in order of their importance.

The second phase of our analysis consisted in examining the different correlations between our variables (project success; competencies). As the results in **Table 5** show, the significant correlations range from 0.294 to 0.611. We note that of the 46 competencies, only 33 are correlated with the success of ID projects in its aggregate form and that all significant correlations at $p < .01$ and $p < .05$ are positive. The first three competencies most strongly correlated with project success (Human resources management, Cultural awareness, Knowledge of the project location) relate to contextual competencies according to the configuration of the IPMA Competence Baseline (ICB 3.0). Surprisingly, however, certain competencies (*Engagement, Result Orientation, Ability to deal with ambiguity and change*), which are considered more important on the basis of the average criterion, have no connection with overall project success.

	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
Component	**Total**	**% of variance**	**Cumulative %**	**Total**	**% of variance**	**Cumulative %**	**Total**	**% of variance**	**Cumulative %**
1	3.431	42.881	42.881	3.431	42.881	42.881	2.196	27.444	27.444
2	1.554	19.425	62.307	1.554	19.425	62.307	2.189	27.358	54.802
3	1.028	12.846	75.152	1.028	12.846	75.152	1.628	20.350	75.152

Table 1.
Eigenvalues and variance.

Items	Extraction
The project operated within budget	0.708
The initially identified objectives were attained	0.808
The goods and services produced are by the project conform to those described in the project documents	0.799
The beneficiaries are satisfied by the goods or services generated	0.755
The project had a visible impact on the beneficiaries	0.738
The project achieved a high national profile	0.738
The project has a good reputation among the principal donors	0.747
The principal donors are satisfied by the goods or services generated	0.720

Table 2.
Communalities.

Items	Components		
	Visibility	Management	Impact
The project operated within budget		0.743	
The initially identified objectives were attained		0.863	
The goods and services produced are by the project conform to those described in the project documents		0.839	
The beneficiaries are satisfied by the goods or services generated			0.800
The project had a visible impact on the beneficiaries			0.781
The project achieved a high national profile	0.850		
The project has a good reputation among the principal donors	0.733		
The principal donors are satisfied by the goods or services generated	0.786		

Table 3.
Underlined factors of project success.

	Variables	Mean	SD
1	Engagement	4.53	0.661
2	Result orientation	4.40	0.618
3	Conscientiousness	4.36	0.773
4	Ability to deal with ambiguity and change	4.33	0.739
5	Integrity and honesty	4.31	0.874
6	Ability to work in a team	4.29	0.757
7	Project requirements and objectives	4.27	0.915
8	Project knowledge	4.24	0.830
9	Leadership	4.20	0.757
10	Ability to deal with stress	4.18	0.684
11	Self confidence	4.16	0.796

	Variables	Mean	SD
12	Human resources management	4.13	0.815
13	Ability to identify and to resolve conflicts	4.11	0.959
14	Openness	4.07	0.780
15	Ability to motivate team members	4.04	0.852
16	Planning and Organizing	4.04	0.638
17	Ability to communicate	4.02	0.812
18	Reliability	4.02	0.783
19	Project management qualification	4.00	0.798
20	Ability to negotiate	4.00	0.798
21	Understanding methods, processes, and procedures	3.98	0.771
22	Ability to resolve conflicts	3.96	0.824
23	Mobilizing	3.96	0.796
24	Ability to manage the scope, time and cost of the project	3.96	0.767
25	Creativity	3.93	0.780
26	Control and reports	3.89	0.804
27	Information and documentation	3.87	0.894
28	Special knowledge in the use of tools and techniques	3.84	0.796
29	Project orientation	3.84	0.952
30	Values appreciation	3.80	0.757
31	Technical skills/theoretical knowledge	3.78	0.902
32	Technology required	3.78	0.850
33	Delegating Authority	3.73	0.809
34	Training and Learning	3.69	0.793
35	Ambition	3.67	0.905
36	Knowledge in legal environment for projects	3.58	0.839
37	Assertiveness	3.53	0.919
38	Competence in the area in which project is implemented	3.53	1.079
39	High self-esteem	3.51	0.991
40	Intuition and improvisation	3.49	0.944
41	Self-image	3.49	0.869
42	Empathy	3.44	0.918
43	Experience in managing projects	3.44	1.056
44	Previous successful project management	3.42	0.917
45	Cultural awareness	3.31	0.996
46	Political sensitivity	2.98	1.215

Table 4.
Competencies ranked.

Rank	Variables	Success of ID projects
2	Human resources management	0.611**
2	Cultural awareness	0.568**
3	Competence in the area in which project is implemented	0.527**
4	Ambition	0.520**
5	Mobilizing (Project manager is able to mobilize emotional energy of his team members)	0.518**
6	Openness	0.517**
7	Ability to work in a team	0.477**
8	Conscientiousness	0.468**
9	Ability to motivate team members	0.467**
10	Integrity and honesty	0.464**
11	Experience in managing project	0.462**
12	Training and learning	0.455**
13	Project management qualification	0.449**
14	Technology required	0.445**
15	Intuition and improvisation	0.443**
16	Values appreciation	0.441**
17	Empathy	0.413**
18	Ability to identify and to resolve problems	0.404**
19	Self confidence	0.397**
20	Technical skills/theoretical knowledge	0.395**
21	Ability to communicate	0.394**
22	Project requirements and objectives	0.389**
23	Ability to resolve conflicts	0.387**
24	Assertiveness	0.366*
25	Special knowledge in the use of tools and techniques	0.365*
26	Ability to manage the scope, time and cost of the project	0.359*
27	Knowledge in project management	0.355*
28	Understanding methods, processes, and procedures	0.353*
29	Control and reports	0.348*
30	Reliability	0.324*
31	High self-esteem	0.323*
32	Knowledge in legal environment for projects	0.297*
33	Leadership	0.294*

Table 5.
Correlation between competencies and ID projects success.

In addition to the global analysis mentioned above, we considered it necessary to understand the level of correlation of competencies with the three dimensions of project success as represented by the principal component analysis. Thus, as the

Variables	Project success-management
Cultural awareness	0.585**
Human resources management	0.512**
Training and learning	0.464**
Competence in the area in which project is implemented	0.433**
Experience in managing project	0.420**
Technology required	0.372*
Integrity and honesty	0.369*
Intuition and improvisation	0.368
Empathy	0.347*
Political sensitivity	0.342*
Openness	0.338*
Ambition	0.335*
Ability to motivate team members	0.328*
Special knowledge in the use of tools and techniques	0.313*
Project management qualification	0.301*
Ability to work in a team	0.301*
Reliability	0.300*

Table 6.
Correlation between competencies and management dimension of ID projects success.

results in **Table 6** show, 17 competences out of the 46 are positively correlated with the management dimension of project success (Project success-management). This dimension corresponds to the classical constraints of project management (time, costs, quality). These competencies, of which four of the first five are contextual competencies (Cultural awareness, Human resources management, Competence in the area in which project is implemented and Experience in managing project) according to the IPMA-Competence Baseline configuration (ICB 3.0), are therefore those necessary for the project coordinator to comply with what is generally expected of a project manager and to satisfy the lending institutions. We also note that the significant correlations are between 0.300 and 0.585 and that all the significant correlations at $p < 0.01$ and $p < 0.05$ are positive.

Similarly, in **Table 7**, the results of the correlational analysis show that 14 competencies are correlated with the Impact dimension (project success-impact) of development assistance project success. This dimension actually reflects a set of concerns related to the results and effects of the project in the medium or long term. These competencies (Openness, Ability to motivate team members, Special knowledge in the use of tools and techniques, Project management qualification, Creativity, Control and reports, etc.) are therefore crucial if sustainable effects are to be achieved through the implementation of ID projects. We note that the significant correlations are between 0.309 and 0.554 and that all these significant correlations at $p < .01$ and $p < .05$ are positive.

For its part, and as **Table 8** shows, the Visibility dimension of ID project success is correlated with 35 of the 46 competences. This is not surprising given that it is the

	Variables	Project success-impact
1	Openness	0.554**
2	Mobilizing (Project manager is able to mobilize emotional energy of his team members)	0.449**
3	Special knowledge in the use of tools and techniques	0.408**
4	Conscientiousness	0.386**
5	Creativity	0.363*
6	Intuition and improvisation	0.362*
7	Control and reports	0.352*
8	Ability to motivate team members	0.347*
9	Ambition	0.334*
10	Ability to work in a team	0.324*
11	Ability to identify and to resolve problems	0.320*
12	Project management qualification	0.317*
13	Values appreciation	0.317*
14	Delegating Authority	0.309*

Table 7.
Correlation between competencies and impact dimension of ID projects success.

	Variables	Project success-visibility
1	Management du personnel	0.530**
2	Ambition	0.517**
3	Mobilizing (Project manager is able to mobilize emotional energy of his team members)	0.503**
4	Self confidence	0.486**
5	Ability to work in a team	0.473**
6	Ability to resolve conflicts	0.472**
7	Knowledge in project management	0.471**
8	Competence in the area in which project is implemented	0.471**
9	Project requirements and objectives	0.466**
10	Conscientiousness	0.453**
11	Ability to manage the scope, time and cost of the project	0.447**
12	Values appreciation	0.444**
13	Ability to communicate	0.441**
14	Understanding methods, processes, and procedures	0.437**
15	Control and reports	0.437**
16	Technical skills/theoretical knowledge	0.435**
17	Project management qualification	0.418**
18	Assertiveness	0.415**
19	Ability to identify and to resolve problems	0.413**

	Variables	Project success-visibility
20	Ability to motivate team members	0.408**
21	Cultural awareness	0.407**
22	Previous successful project management	0.401**
23	High self-esteem	0.395**
24	Openness	0.387**
25	Integrity and honesty	0.385**
26	Training and learning	0.359*
27	Special knowledge in the use of tools and techniques	0.352*
28	Experience in managing project	0.348*
29	Empathy	0.336*
30	Ability to negotiate	0.332*
31	Result orientation	0.328*
32	Knowledge in legal environment for projects	0.306*
33	Intuition et improvisation	0.304*
34	Self-mage	0.304*
35	Information and documentation	0.302*

Table 8.
Correlation between competencies and visibility dimension of ID projects success.

one that project coordinators are sensitive to (average: 4.3037 out of 5). In fact, a good national visibility and a good reputation of the project with the aid institution are necessary, if not sufficient, to obtain possible additional funding that will allow the extension, once the initial phase of the project has come to an end [28]. It also stems from the valorisation of the project itself (rather than its management), the governmental action and the project manager. "Human resources management" was found to be the competence most strongly correlated with this dimension. Finally, we note that the significant correlations at $p < 0.01$ and $p < 0.05$ are all positive and ranges from 0.302 to 0.530.

5. Discussion

The objective of this research was not to identify different categories of competencies; previous research has already documented these topics extensively. Rather, it was to empirically examine which of a traditional pool of competencies presented in the literature are correlated with the success of official development assistance projects.

Thus, a first wave of results based on respondents' perception and experience shows that engagement (mean=4.53; SD=0.661), result orientation (mean=4.40; SD=0.618) and conscientiousness (mean=4.36; SD=0.773) are the most important competencies. It is not surprising that "Engagement" comes first. Alvarenga et al. [13] show that "Engagement" was identified by project managers as the second most important competence after "Communication". This is because the lack of engagement of the project team, project coordinators and stakeholders in the project

(insufficient engagement of the different actors) is one of the reasons why ID projects fail [61]. In addition, "Result orientation" was ranked as the second most important competence; it combines both effectiveness and efficiency, which implies that project coordinators and project team members should constantly strive to achieve project results. Its importance has also been demonstrated in the literature [13, 21, 56]. The other eight competencies in the top ten list are: Conscientiousness, Ability to deal with ambiguity and change, integrity and honesty, Ability to work in a team, Project requirements and objectives, Project knowledge, Leadership and Ability to deal with stress. Most of them relate to the ability of project coordinators to establish personal or social relationships and to act in accordance with their own values, moral and ethical principles. All these competencies, which can be described as "soft" [14, 47], challenge a traditional view that for a long time defended the predominance of so-called "hard", i.e. technical competencies.

Furthermore, the results of the correlational analyses indicate that there is a significant gap between the importance of competencies as perceived by project coordinators and their empirical effects on project success. In contrast to the facts presented earlier, the results show that contextual competencies such as human resource management (Corr=0.611), cultural awareness (Corr=0.568) and competence in the area in which project is implemented (Corr=0.527) most strongly correlate with the success of project. This is because, given the characteristics of ID projects, success factors are highly dependent on the specific environment and cultural diversity of the various actors. Moreover, a project cannot exist without a symbiosis between the project leaders and the host communities [62]. Similarly, strict adherence to the requirements of human resource management aspects including recruitment, selection, training, performance assessment and motivation is unequivocally essential to the success of development projects. However, our results contrast with those of Nahod and Radujković [63] who found that behavioral competencies are the most important, followed by technical competencies and finally contextual competencies. In addition, ambition (Corr=0.520), the ability to mobilize the mental and emotional energy of his project team members (Corr=0.518), openness (Corr=0.517), the ability to work in a team (Corr=0.477), conscientiousness (Corr=0.468), the ability to motivate project team members (Corr=0.467), and integrity and honesty (Corr=0.464), round out the list of the top ten competencies that have a strong correlation with the success of international aid projects. These are actually interpersonal, human and social competencies [14, 21, 64]. The predominance of these competencies in the context of international development projects is justified by the complexity and uncertainty of the environment, characterized by the complex relationships between a multitude of stakeholders, difficult working conditions and difficulties related to participation and exchanges with local populations. However, so-called "hard" competencies, also known as technical competencies [47], are on the list of competencies correlated with successful development projects. Despite the current focus on soft competencies [65], given the highly transactional and codified nature of international project management, project coordinators are still expected to have technical competencies and demonstrate strong technical expertise [66]. They need to be technically and socially competent and creative to achieve their goals in changing environments [46]. Finally, "leadership (Corr=0,294)" is the last of the 33 competencies positively and significantly correlated with the success of international projects. Moreover, of the 46 competencies identified in this study, thirteen (13) has no correlation with the success of international development projects. These are: Political sensitivity (Corr=0,286), Ability to negotiate (Corr=0,283), Delegating Authority (Corr=0,283), Creativity

(Corr=0,267), Project orientation (Corr=0,259), Information and documentation (Corr=0,257), self-image (Corr=0,247), Having successfully managed projects in the past (Corr=0,245), Result orientation (Corr=0,194), Ability to deal with stress (Corr=0,164), Planning and organizing (Corr=0,156), Ability to deal with ambiguity and change (Corr=0,087), and Engagement (Corr=0,051). Within this set, behavioral, technical and contextual competencies are included.

Furthermore, it is surprising to find that "Engagement (mean=4.53; SD=0.661)", which occupies the first place of the competences considered important by the respondents, is neither correlated (Corr=0.051) with the success of the projects (aggregated form) nor with its dimensions (management, impact, visibility). The same applies to Project orientation, Planning and Organizing, Ability to deal with ambiguity and change and Ability to deal with stress. Yet, the importance of these competencies has been confirmed in several studies [13, 63]. These findings show that there is a gap between the actors' perception of the importance of competencies and their actual effects on the success of projects.

6. Conclusion

The list of project manager competencies has become more and more extensive to the point of obscuring project managers' core competencies and it was time to address it.

Thus, the objectives of the present study were to verify with project coordinators their perception of the relevance of the different competences identified in the literature and to investigate the correlation between these competences of project managers and the success of ID projects in a developing country, such as Burkina Faso (Africa). Our results show that engagement, result orientation, conscientiousness, ability to deal with ambiguity and change, integrity and honesty, ability to work in a team, project requirements and objectives, project knowledge, leadership and ability to deal with stress appeared at the top 10 aspects in terms of relevance. Our correlational analysis identified 33 competencies which are correlated positively and significantly to the success of ID projects. Of these 33 competencies correlated with project success, most are non-technical, i.e. human, behavioral or contextual. All of which further informs practitioners' thinking about the competencies they need to bring to the fore when carrying out their projects.

Our study group pointed out theoretical implications, such as the growing focus on soft competencies, but also practical aspects, such as the need of an update on project management education to fill the gap between education and the real world [13]. Because of the importance given to the human and behavioral aspects, this research will be a challenge on an educational level, because this type of competencies requires learning methods that go beyond traditional practices [14]. Finally, future studies could investigate the current relationship between soft and hard competencies, comparing their importance to project success [13].

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Author details

Somnoma Edouard Kaboré* and Seydou Sané
SERGe Laboratory, Gaston Berger University, Saint-Louis, Senegal

*Address all correspondence to: kabore.somnoma-edouard@ugb.edu.sn

References

[1] Diallo A, Thuillier D. The success of international development projects, trust and communication: An African perspective. International Journal of Project Management. 2005;**23**(3):237-252. DOI: 10.1016/j.ijproman.2004.10.002

[2] Muriithi N, Crawford L. Approaches to project management in Africa: Implications for international development projects. International Journal of Project Management. 2003;**21**(5):309-319. DOI: 10.1016/S0263-7863(02)00048-0

[3] Brière S, Conoir Y, Yves P, Maltais S, Auclair I. La gestion de projets de développement international et d'action humanitaire. Canada: Presses de l'université; 2021

[4] Ika LA. Quels grands projets dans l'Afrique post-coronavirus? Tribune, Jeune Afrique. 2020. Available from: https://www.jeuneafrique.com/997496/economie/tribune-quels-grands-projets-dans-lafrique-post-coronavirus/ [Accessed: July 25, 2021].

[5] Ul Musawir A, Serra CEM, Zwikael O, Ali I. Project governance, benefit management, and project success: Towards a framework for supporting organizational strategy implementation. International Journal of Project Management. 2017;**35**(8):1658-1672. DOI: 10.1016/j.ijproman.2017.07.007

[6] Raziq MM, Borini FM, Malik OF, Ahmad M, Shabaz M. Leadership styles, goal clarity, and project success: Evidence from project-based organizations in Pakistan. Leadership & Organization Development Journal. 2018;**39**:309-323. DOI: 10.1108/LODJ-07-2017-0212

[7] Hermano V, López-Paredes A, Martín-Cruz N, Pajares J. How to manage international development (ID) projects successfully. Is the PMD Pro1 guide going to the right direction? International Journal of Project Management. 2013;**31**(1):22-30. DOI: 10.1016/j.ijproman.2012.07.004

[8] Ika LA, Hodgson D. Learning from international development projects: Blending critical project studies and critical development studies. International Journal of Project Management. 2014;**32**(7):1182-1196

[9] Ika LA, Diallo A, Thuillier D. Critical success factors for World Bank projects: An empirical investigation. International Journal of Project Management. 2012;**30**(1):105-116. DOI: 10.1016/j.ijproman.2011.03.005

[10] Yamin M, Sim AK. Critical success factors for international development projects in Maldives: Project teams' perspective. International Journal of Managing Projects in Business. 2016;**9**(3):481-504. DOI: 10.1108/IJMPB-08-2015-0082

[11] Golini R, Kalchschmidt M, Landoni P. Adoption of project management practices: The impact on international development projects of non-governmental organizations. International Journal of Project Management. 2015;**33**(3):650-663

[12] Munro LT, Ika L. Guided by the beauty of our weapons: Comparing project management standards inside and outside international development. Development in Practice. 2020;**30**(7):934-952. DOI: 10.1080/09614524.2020.1766421

[13] Alvarenga JC, Branco RR, Luis A, Guedes A, Alberto C, Soares P. The

project manager core competencies to project success. International Journal of Managing Projects in Business. 2019;**13**:277-292. DOI: 10.1108/IJMPB-12-2018-0274

[14] Brière S, Proulx D, Flores ON, Laporte M. Competencies of project managers in international NGOs: Perceptions of practitioners. International Journal of Project Management. 2015;**33**(1):116-125. DOI: 10.1016/j.ijproman.2014.04.010

[15] Irfan M, Khan SZ, Hassan N, Hassan M, Habib M, Khan S, et al. Role of project planning and project manager competencies on public sector project success. Sustainability. 2021;**13**(3):1421. DOI: 10.3390/su13031421

[16] Li Y, Sun T, Shou Y, Sun H. What makes a competent international project manager in emerging and developing countries? Project Management Journal. 2020;**51**(2):181-198. DOI: 10.1177/8756972820901387

[17] Podgórska M, Pichlak M. Analysis of project managers' leadership competencies. International Journal of Managing Projects in Business. 2019;**12**(4):869-887. DOI: 10.1108/IJMPB-08-2018-0149

[18] Khang DB, Moe TL. Success criteria and factors for international development projects: A life-cycle-based framework. Project Management Journal. 2008;**39**(1):28-42. DOI: 10.1002/pmj.20034

[19] Moradi S, Kähkönen K, Aaltonen K. Project managers' competencies in collaborative construction projects. Buildings. 2020;**10**(3):50. DOI: 10.3390/buildings10030050

[20] Dziekoński K. Project managers' competencies model for construction industry in Poland. Procedia Engineering. 2017;**182**:174-181. DOI: 10.1016/j.proeng.2017.03.157

[21] El-Saaba S. The skills and career path of an effective project manager. International Journal of Project Management. 2001;**19**:1-7

[22] Medina R, Medina A. Managing competence and learning in knowledge-intensive, project-intensive organizations: A case study of a public organization. International Journal of Managing Projects in Business. 2017;**10**(3):505-526. DOI: 10.1108/IJMPB-04-2016-0032

[23] Tabassi AA, Roufechaei KM, Ramli M, Bakar AHA, Ismail R, Pakir AHK. Leadership competences of sustainable construction project managers. Journal of Cleaner Production. 2016;**124**:339-349. DOI: 10.1016/j.jclepro.2016.02.076

[24] Aga DA, Noorderhaven N, Vallejo B. Transformational leadership and project success: The mediating role of team-building. International Journal of Project Management. 2016;**34**(5):806-818

[25] Ika LA, Donnelly J. Success conditions for international development capacity building projects. International Journal of Project Management. 2017;**35**(1):44-63

[26] Baccarini D. The logical framework method for defining project success. Project Management Journal. 1999;**30**(4):25-32

[27] Ika L. La recherche sur le succès des projets: Approche universelle ou contingente. In: AIMS, XVIème Conférence Internationale de Management Stratégique. 2007. pp. 1-20

[28] Diallo A, Thuillier D. The success dimensions of international development

projects: The perceptions of African project coordinators. International Journal of Project Management. 2004;**22**(1):19-31. DOI: 10.1016/S0263-7863(03)00008-5

[29] Ika LA. Project success as a topic in project management journals. Project Management Journal. 2009;**40**(4):6-19. DOI: 10.1002/pmj.20137

[30] Castro MS, Bahli B, Barcaui A, Figueiredo R. Does one project success measure fit all? An empirical investigation of Brazilian projects. International Journal of Managing Projects in Business. 2020;**14**:788-805. DOI: 10.1108/IJMPB-01-2020-0028

[31] PMI. A Guide to Project Management Body of Knowledge. 5th ed. Newtown Square PA: PMI Publications; 2013

[32] Atkinson R. Project management: Cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria. International Journal of Project Management. 1999;**17**(6):337-342

[33] Kabore SE, Sane S, Abo P. Transformational leadership and success of international development projects (ID projects): Moderating role of the project team size. Leadership and Organization Development Journal. 2021;**4**:517-530. DOI: 10.1108/LODJ-06-2020-0236

[34] Sane S. Exploration des facteurs de succès des projets d'aide publique au développement: le rôle de l'apprentissage organisationnel [thesis]. Reims: Agence Bibliographique de l'enseignement Supérieur; 2009

[35] De Wit A. Measurement of project success. International journal of project management. 1988;**6**(3):164-170

[36] Cooke-Davies T. The 'real' success factors on projects. International Journal of Project Management. 2002;**20**(3):185-190. DOI: 10.1016/S0263-7863(01)00067-9

[37] Albert M, Balve P, Spang K. Evaluation of project success: A structured literature review. International Journal of Managing Projects in Business. 2017;**10**(4):796-821. DOI: 10.1108/IJMPB-01-2017-0004

[38] Bayiley YT, Teklu GK. Success factors and criteria in the management of international development projects: Evidence from projects funded by the European Union in Ethiopia. International Journal of Managing Projects in Business. 2016;**9**(3):562-582. DOI: 10.1108/IJMPB-06-2015-0046

[39] Ika LA. Les facteurs clés de succès des projets d'aide au développement [thesis]. Montréal, Canada: Université du Québec à Montréal; 2011

[40] Hollenbeck GP, McCall MW Jr, Silzer RF. Leadership competency models. The Leadership Quarterly. 2006;**17**(4):398-413. DOI: 10.1016/j.leaqua.2006.04.003

[41] Turner JR, Müller R. The project manager's leadership style as a success factor on projects: A literature review. Project Management Journal. 2005;**36**(2):49-61

[42] Turner JR, Müller R, Dulewicz V. Comparing the leadership styles of functional and project managers. International Journal of Managing Projects in Business. 2009;**2**(2):198-216. DOI: 10.1108/17538370910949266

[43] Geoghegan L, Dulewicz V. Do project managers' leadership competencies contribute to project success? Project Management Journal. 2008;**39**(4):58-67. DOI: 10.1002/pmj.20084

[44] Müller R, Turner R. Leadership competency profiles of successful project managers. International Journal of Project Management. 2010;**28**(5):437-448

[45] Dainty AR, Cheng MI, Moore DR. Competency-based model for predicting construction project managers' performance. Journal of Management in Engineering. 2005;**21**(1):2-9

[46] González-Marcos A, Alba-Elías F, Ordieres-Meré J. An analytical method for measuring competence in project management. British Journal of Educational Technology. 2016;**47**(6):1324-1339. DOI: 10.1111/bjet.12364

[47] Zhang F, Zuo J, Zillante G. Identification and evaluation of the key social competencies for Chinese construction project managers. JPMA. 2013;**31**(5):748-759. DOI: 10.1016/j.ijproman.2012.10.011

[48] Alam M, Gale A, Brown M, Khan AI. The importance of human skills in project management professional development. International Journal of Managing Projects in Business. 2010;**3**(3):495-516. DOI: 10.1108/17538371011056101

[49] Pant I, Baroudi B. Project management education: The human skills imperative. International Journal of Project Mangement. 2008;**26**:124-128. DOI: 10.1016/j.ijproman.2007.05.010

[50] Skulmoski GJ, Hartman FT. Information systems project manager soft competencies: A project-phase investigation. Project Management Journal. 2010;**41**(1):61-80

[51] Stevenson DH, Starkweather JA. PM critical competency index: IT execs prefer soft skills. International Journal of Project Management. 2010;**28**(7):663-671

[52] IPMA. IPMA Competence Baseline Version 3.0. Nijkerk, The Netherlands: International Project Management Association; 2006

[53] IPMA. Individual Competence Baseline for Project. International Project Management Association: Programme and Portfolio Management; 2015

[54] Takey SM, de Carvalho MM. Competency mapping in project management: An action research study in an engineering company. International Journal of Project Management. 2015;**33**(4):784-796

[55] Crawford L. Senior management perceptions of project management competence. International Journal of Project Management. 2005;**23**(1):7-16

[56] Cheng M-I, Dainty ARJ, Moore DR. What makes a good project manager ? Human Resource Management Journal. 2005;**15**(1):25-37

[57] Ortiz-Marcos I, Benita JRC, Aldeanueva CM, Colsa ÁU. Competency training for managing international cooperation engineering projects. Project Management Journal. 2013;**44**(2):88-97

[58] Ochieng EG, Price AD. Managing cross-cultural communication in multicultural construction project teams: The case of Kenya and UK. International Journal of Project Management. 2010;**28**(5):449-460

[59] Ika LA, Diallo A, Thuillier D. The empirical relationship between success factors and dimensions: The perspectives of World Bank project supervisors and managers. International Journal of Managing Projects in Business. 2011;**4**(4):711-719. DOI: 10.1108/17538371111164092

[60] Robinson JP, Shaver PR, Wrightsman LS. Criteria for scale

selection and evaluation. In: Measures of Personality and Social Psychological Attitudes. Third Revi ed. Academic Press, Inc.; 1991. DOI: 10.1016/b978-0-12-590241-0.50005-8

[61] Youker R. The nature of international development projects. Development anthropology: Encounters in the real. WORLD. 2003;**VIII(Vi)**:91-114. DOI: 10.1017/CBO9780511541476.002

[62] Proulx D, Brière S. Caractéristiques et succès des projets de développement international: Que peuvent nous apprendre les gestionnaires d'ONG? Canadian Journal of Development Studies. 2014;**35**(2):249-264. DOI: 10.1080/02255189.2014.900478

[63] Nahod M-M, Radujković MVM. The impact of ICB 3.0 competences on Project Management success. Procedia - Social and Behavioral Sciences. 2013;**74**:244-254. DOI: 10.1016/j.sbspro.2013.03.014

[64] Lafave JM, Kang H, Kaiser JD, Asce AM. Cultivating intercultural competencies for civil engineering students in the era of globalization: Case study. 2015;**141**(3):1-19. DOI: 10.1061/(ASCE)EI.1943-5541.0000234

[65] Chipulu M, Neoh JG, Williams T. Manager Competences. 2013;**60**(3):506-517

[66] Hanna AS, Ibrahim MW, Lotfallah W, Iskandar KA, Russell JS. Modeling project manager competency: An integrated mathematical approach. Journal of Construction Engineering and Management. 2016;**142**(8):04016029. DOI: 10.1061/(ASCE)CO.1943-7862.0001141

Chapter 5

Entrepreneurship and Factors Affecting Entrepreneurial Decisions

Nguyen Xuan Truong and Dang Van My

Abstract

In recent years, entrepreneurship has become an important topic in both academic and practice to find policies to promote entrepreneurship and contribute to economic development. This chapter first presents some arguments about entrepreneurship based on theoretical and practical approaches to entrepreneurship, digital entrepreneurship, and sustainable entrepreneurship. Second, the presentation of the survey results on factors affecting the business decisions of young entrepreneurs of Vietnam's generation Y. The results show that nine factors influence the business decisions of young entrepreneurs of the Y generation in Vietnam, such as entrepreneurial education, the background of the family, entrepreneurial ecosystem, knowledge, social valuation, opportunity perception, attitude, business performance, and purposeful entrepreneurial competence. The results highlight the role of entrepreneurship educated, social valuation, perceived opportunity, etc. Hence, to promote success in entrepreneurial entrepreneurship, strengthen entrepreneurial education, and proposed a strategy to complete the entrepreneurial ecosystem.

Keywords: entrepreneurial, digital entrepreneurship, entrepreneurial decision, factors affecting entrepreneurial decisions, entrepreneurial vietnamese

1. Introduction

1.1 Entrepreneurship

Entrepreneurship is defined as the process by which individuals pursue market opportunities to develop a business, regardless of the resources they currently control [1]. In essence, the entrepreneurial behavior of an entrepreneur shows that they are trying to take advantage of market opportunities and put useful business ideas into practice [2]. The tasks performed by this behavior can be performed by an individual or a group and often require creativity, leadership, and a willingness to take risks (**Table 1**).

Entrepreneurship is a concept that denotes a way of thinking that can approach and expand the overall business opportunity to achieve business results from the inherent idea. From an economic point of view, entrepreneurship begins with the

Create wealth	Business involves promoting production and overcoming risks in exchange for profits
Create a business	Starting a business entails setting up a new firm that has never existed before
Creative innovation	Entrepreneurship is interested in a unique combination of resources that render existing methods or products obsolete
Making a difference	Entrepreneurship involves creating change by adapting individual approaches and skills to meet opportunities
Create jobs	Entrepreneurship is concerned with the use, management, and development of factors of production, including the workforce
Create value	Entrepreneurship is a process of creating value for customers by exploiting untapped opportunities
Create growth	Entrepreneurship is a strong and positive direction for sales, income, assets, and job growth

Source: Modification of Morris [3].

Table 1.
Seven perspectives on the nature of entrepreneurship.

contribution of Cantillion (1680–1734), the author defined an entrepreneur as a person engaged in profit-making activities and directing activities. Follow the market opportunity to ensure profitability. In principle, entrepreneurs will buy products at a certain price and sell them for profit [4]. The role of entrepreneur is an economic agent, acting as a bridge between producers and consumers, an important subject of the economy.

1.2 Digital entrepreneurship

Digital entrepreneurship is a form of developing new business companies on a digital platform, digital technology plays a key role in business development. Digital entrepreneurship allows the formation of entrepreneurial companies where these companies with a lean startup approach to business process, reduce investments, and can avoid situations lack of resources.

1.2.1 Digital entrepreneurship model

The digital startup model can be understood as the core business logic of a digital-based enterprise to create products and services and deliver outstanding value to the model's customers [5]. Entrepreneurs who develop digital startups often emphasize prioritizing the development of minimal viable products based on applying a lean startup approach to be able to provide the market with the value that customers. Following this trend, the Canvas model of Osterwalder and Pigneur [6] and the Lean Canvas model of Maurya [7] are prominent theoretical models widely disseminated in practice. Recent research found that 93% of digital entrepreneurs use lean startups to create products that match market needs quickly, with minimal investment of unnecessary resources and ease in setting up business development processes [8]. According to Wirtz [9], there exist quite diverse B2C startup models based on different business activities with minimum viable product (MVP) types, such as (1) focusing on the unique and most important feature of a particular product; (2) developing MVP guides and connecting enterprises with end-users; (3) user experience with fully

functional and fully automated products and services; and (4) using partial MVP for continuous authentication of user needs.

1.2.2 Business models platform

The business model's platform concept has gone through a long process from simple concepts to models characterized by diverse nature in value creation [10]. The multifaceted nature of the Business model's platform is very important in business models [11]. The basic characteristics of multifacetedness, the network impact of effects, as well as the problems of profitability, and the logic of model elements all play a particularly important role in startups. Digital industry platform business models include transaction-oriented, innovation-oriented, and hybrid (combined) platforms.

1.2.3 Transaction-oriented platform

Platforms provide a technical architecture to combine supply generation and transaction execution with different units of value. Platforms create frameworks through defined functions and mechanisms. These types of platforms greatly reduce transaction costs while facilitating the parties involved in transactions. Many platforms act as focal points, combining supply and demand, and increasing efficiency for stakeholders. Popular examples of businesses operating trading platforms are Grabfood (food delivery), eBay (used goods), and SoundCloud (audio files).

1.2.4 Innovation-driven platform

Innovation-driven platforms are designed to create new products and services through an underlying architecture on which different actors come together [12]. In the software industry, for example, Microsoft Windows is acting as an innovation platform on which third parties develop a variety of applications. However, Internet browsers are controlled by Google, which does not control the main PC operating system but gradually dominates. It is becoming increasingly important as an innovation platform for web-based applications. Web applications are increasingly important and pose a significant threat to the supremacy of computer operating system vendors. Innovation-driven digital startups are becoming more and more important in this Industry 4.0 era.

1.2.5 Hybrid platform

When a trading platform and an innovation-driven platform are closely linked, it is called a hybrid platform. Groups Big techs such as Google, Amazon, Facebook, and Apple are all generating a large portion of their market value by operating hybrid platforms. These platforms act similarly to different actors exchanging certain units of value within the existing architecture. Buyers and sellers or social media users are the actors involved. Architecture can be developed across environments or markets, and the units of value created can be goods, services, money, or information.

1.3 New enterprise and enterprise group

Entrepreneurs often have a safety net that helps them reduce the risk of setting up a new business, a startup, or self-employment to meet market demand and to

allow for a quick recovery if the company's previous business failed. One factor contributing to this confidence is the contracting economy, which involves the use of temporary and transitional positions outsourced on a case-by-case basis, rather than keeping a full staff. Enough. This mindset benefits employers because it reduces employee welfare costs, but it also reduces employee loyalty. The journey of starting a new business goes through many levels, from self-discovery, hands-on experience, and reaching certain milestones on the path to success as an entrepreneur. The term venture business means any new type of business, from any organization, project, or activity that offers great benefits and, at the same time, a high degree of risk when allowed to take place. Undertaking a risky business like never before. The entrepreneurial journey is the process of self-discovery so that everyone considers whether starting a business is right for him or not. Every startup journey is unique; No two individuals experience it the same way. Entrepreneurs will find opportunities and risks along with rewards and challenges throughout the startup process. Growing a business can be an exciting, dynamic, and rewarding experience, but it can also be hard work. Here is the seven-step startup journey for new entrepreneurs:

- Step 1: Inspire—What is your motivation to become an entrepreneur?
- Step 2: Prepare—Do you have what it takes to become an entrepreneur?
- Step 3: Evaluation—What is the idea you intend to present through your business project?
- Step 4: Resource Discovery—What resources and characteristics do you need for this venture to be successful?
- Step 5: Business Plan—What kind of business structure and business model will you have?
- Step 6: Orientation—In which direction will you take your project? Where would you go for guidance?
- Step 7: Launch—When and how will you launch your business project?

Corporate entrepreneurship is a term used to describe entrepreneurial behavior in active large enterprises. Other common forms include organizational entrepreneurship, corporate venturing, and spin-out. At a fundamental level, corporate entrepreneurship involves the creation, development, and implementation of new ideas and behaviors by a business [13]. This perspective focuses on innovation related to a new product or service, system, process, or business program. Businesses focus on enhancing their ability to absorb and act on their skills and creativity.

The starting point is to develop a deep understanding of the nature of corporate entrepreneurship and how it can be applied to existing corporates. When applied, it is necessary to create unique differences but must be suitable for existing corporate. Corporate leaders must build a dynamic working environment that encourages employees to recognize and act on the business potential they can realize. Strategy, structure, culture, and management system are the four main elements of the work environment (**Figure 1**).

In addition, an understanding of the ongoing obstacles to corporate entrepreneurship is required to achieve sustainable corporate performance. The corporate

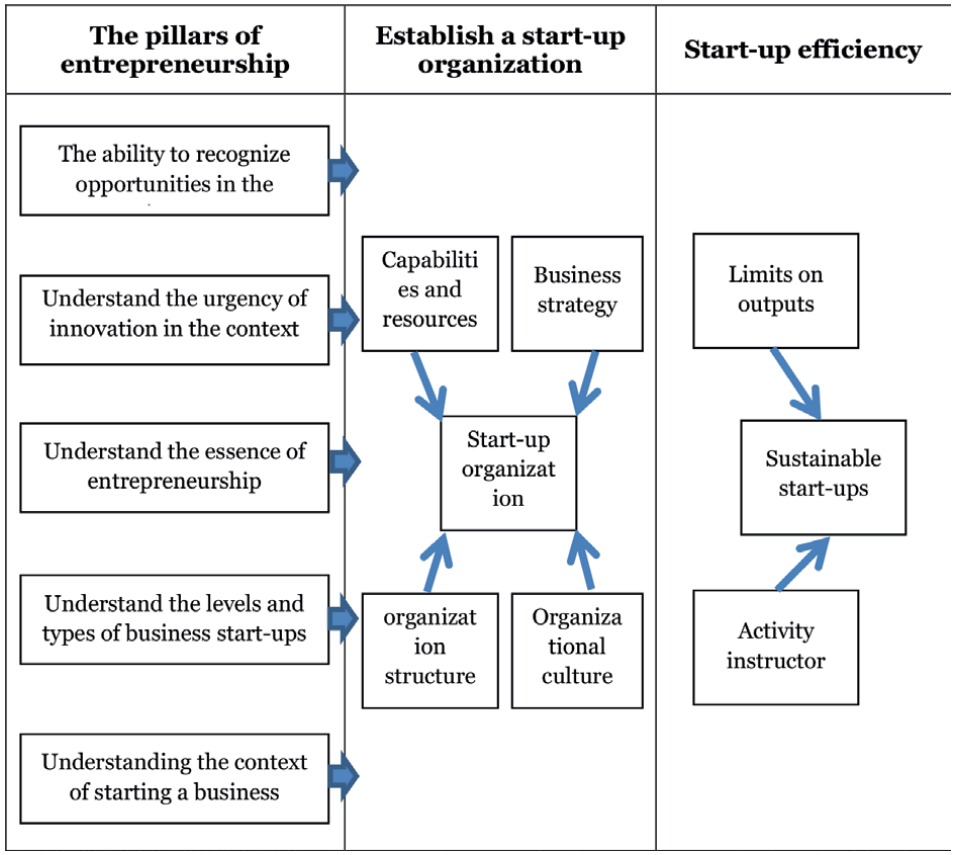

Figure 1.
An entrepreneurship process model.

entrepreneurship model can be applied to solve business challenges in any organization. Entrepreneurs need to make good use of the concept of entrepreneurship intensity to discover and promote different forms of entrepreneurship and corporates.

2. Entrepreneurial thinking and principles for a successful startup

2.1 Entrepreneurial thinking

Entrepreneurial thinking is a concept that denotes the working of the mind, and mental activities, bringing our emotions to change and improve through material activities to help us have a good awareness of entrepreneurship. The learning and working process of everyone is an extremely important activity that helps each form entrepreneurial thinking. The problem of thinking in start-ups plays a very important role, if everyone does not have a clear and sharp thinking mind, it is difficult to succeed in the process of turning business ideas into reality. There is no new or old concept of entrepreneurship, only the results you create from your thinking are important, the main thing is that those results match market needs and bring profits to you. When starting a business.

The reality of starting a business has proven that successful startup projects are based on the ideas, determination, and relentless efforts of startup individuals. What is decisive is entrepreneurial thinking, the suitability of the thinking to the times in which business ideas lead to recreating products and services that meet market needs. Since then, we can all be aware that, if we are afraid to change our minds, only keeping one way of thinking will not be able to meet our actual needs. There is no denying that thinking forms in stages. However, not every business can survive and thrive the way that phase is unfolding.

Then why not change to get better results right? Risks in business are inevitable. Instead of hiding, being sad, and letting go, it is necessary to calmly find a solution to each problem. It can be said that this is the entrepreneurial mindset that needs to be "programmed" into the awareness of every young person who intends to start a business. Because starting a business is a series of journeys to solve and fix problems. In the end, the result will be a strong, stable, and profitable business. If you cannot find a solution yourself, you need to get help from a partner or advisor. Knowing how to listen and think will be the key to helping you now. Some important entrepreneurial mindsets drawn from many startups in practice are: Not afraid to change; Finding the right solution before every problem; Starting a business must go with passion; Crisis is obvious. Understand the benefits and value of an entrepreneurial mindset. However, you are having problems in the process of forming it.

Here are five golden rules to help you get in the right direction in business.

Principle 1: Start with existing capital: Starting a business is not afraid to commit, fail, and do everything from existing capital. You have the skills, you know, you have the passion. All are essential elements to starting a business. Large capital is an advantage, but little capital is not an obstacle to a good idea. Because if you invested a lot of capital, you have a strong source of money, but the start-up plan is not feasible, and you will quickly lose that money.

Principle 2: Turn challenges into potential: Second thing to keep in mind: turn challenges into potential. It sounds abstract and impossible. However, keeping this principle will give you more energy and good thinking ability. That is, when facing a problem, in the process of solving it, it is necessary to know how to find opportunities in problems. Looking at all aspects of incidents, there is certainly potential and opportunity in some respect. Maybe it is just your negative outlook that is covering it up!

Principle 3: The key lies in the relationship with the partner: A fact to keep in mind is that: no business or company can exist and develop without cooperation and cooperation with other units. So the third principle refers to the relationship with the partner. Relationship-building plans are needed. Working on the principle: cooperate for mutual development, and support resources to succeed together. This issue also requires a clear plan and a realistic view to determine which partners can work for a long time.

Principle 4: Take good control of everything: Any situation is possible. Especially in the current market economy, which is always changing and tends to be excluded. To be successful, you need to keep in mind the principle of controlling everything, anytime, anywhere. It is important to ensure that before and during the start-up process, you are in control of the situation and are there to deal with it in time.

Principle 5: Be alert and know your strength: Since ancient times, we have had a saying: "Know people know me, a hundred battles a hundred wins." The meaning of this saying is also used as advice for young people who are cooking up their startup ideas. You must be alert and aware of your current abilities. Do not be overconfident, engage in directions that are not feasible for your company. This is shown most

clearly in the way of building business development direction. The entrepreneurial mindset is the key to helping businesses navigate in the right direction and achieve success. Having the right thinking, quickness, and awareness of the situation is a necessary element of a good leader.

2.2 Principles for a successful startup

The first principle is about business judgment: Businessmen must business judgments 24 hours a day to be an entrepreneur. Business judgment is based on the ability to judge a situation, an offer, and an opportunity. This is an opportunity for entrepreneurs to put their egos aside and make informed decisions based on facts, not emotions.

The second principle of entrepreneurship is critical thinking: Entrepreneurs must possess the power of critical thinking to be able to see through the profit and loss statement. If you think you can do this—prove it to yourself, prove yourself right. Become an expert on the subject matter and use the power of critical thinking to make life decisions that will give you the will, the means, and the essentials to succeed.

The third principle is sales motivation: Selling is becoming more and more difficult. Entrepreneurs have to overcome many failures to sell successfully. If you do not have the motivation to sell, you will not be able to become an entrepreneur. Selling requires enough enthusiasm and perseverance. If you do not have enough enthusiasm and determination, you cannot sell and start a successful business.

The fourth principle focuses on understanding sales: You must understand how to move pieces around, attack, and defend. You must know the best ways to deliver and explain the value of your product to your prospects or customers.

The fifth principle is to be creative: You must be creative in a way that fits the market you serve. If you are not creative and do not deploy your imagination, you can never overcome doubt. This principle is consistent with Albert Einstein's point: "Creativity and imagination are more important than knowledge."

The sixth principle is the spirit of coexistence: Every great entrepreneur can live comfortably in their community. Do something in the community, do positive things, and contribute to society and humanity.

The seven principles are to deal with objections: In 1986, the Harvard Business Review wrote an article about salespeople and why some salespeople fail. The article states that nearly 90% of salespeople fail their first year because they cannot handle rejection. Entrepreneurship involves selling an idea or concept to someone and then implementing it. Entrepreneurs must know how to handle rejection to succeed.

The eighth principle is that the question is the answer: The power of an entrepreneur is expressed in the power of questions. Asking the right questions helps find a solution to the problem.

3. Sustainable entrepreneurship

Sustainable entrepreneurship is a form of expression of a sustainability-oriented business concept, a business that focuses on increasing both social values as well as corporate values. Sustainable entrepreneurship aims to identify business opportunities for organizations with long-term sustainability, arising from putting sustainable entrepreneurship into practice. Sustainable startups often contribute to solving the most challenging local, regional, or national issues, such as climate change, financial

crisis, political instability, and problems with jobs, as well as ensuring business success in a sustainable environment. The view of sustainable entrepreneurship has been pointed out by [14, 15] that sustainable start-ups must pay attention to solving economic, social, and ecological issues.

Sustainable entrepreneurship is the realization of sustainable innovations related to social, environmental, and institutional issues, impacting markets, and benefiting all actors in the economy [16]. These start-ups focus on new products, services, and new processes for the company itself, and for the business industry through the value provided with the transition from personal benefit to social benefit [14]. In line with this argument, the authors' dialectic emphasizes the process of proposing a vision of a responsible way of doing business, which is closely related to the notions of happiness, the good life, and productive work. Meaningful entrepreneurship and innovation for sustainable development (Sustainopreneurship) is an emerging concept emerging from the concepts of social entrepreneurship and ecological entrepreneurship, through sustainable entrepreneurship. This concept means using innovative business organizations to solve sustainability-related issues to create environmental and social sustainability as a strategic goal and aim while respecting established boundaries to maintain systems that support this process.

In the process of building a business in the spirit of sustainable entrepreneurship, entrepreneurs need to understand why and how the concept of sustainable entrepreneurship becomes a method and strategic management thinking throughout the process and business development. Sustainable entrepreneurship aims to identify the opportunities that arise from putting sustainable entrepreneurship into practice. Entrepreneurs need to determine where the journey can go: How does a concept succeed? What are the main motivations for doing it? What is the role of business in shaping the future of our society?

Entrepreneurship and innovation for sustainable development (Sustainopreneurship) is a new concept derived from the concepts of social entrepreneurship and ecological entrepreneurship, through sustainable entrepreneurship. The key issue of this concept is to form innovative business organizations to solve sustainability-related issues in the development process to create environmental and social sustainability as a goal. Strategic goals, while respecting established boundaries to maintain systems that support the process. Implementing sustainable innovations that focus on one or more world/society/sustainability-related issues for the organization's business is an important factor. Find/identify and/or invent solutions to a problem and propose innovation to deliver to the market by creating an efficient business organization. A profound transformation of an old mission)/sustainable business toward a cause, adding ecological/economic/social values and benefits, favoring the intangible—through the intangible chemistry/resonance. Adding value while preserving, restoring, and/or ultimately enhancing corporate value to maintain the ability to meet the needs of current and future generations of stakeholders.

Entrepreneurs pursuing entrepreneurship are the leading vanguard to creating a sustainable world, especially as innovation promoters [17, 18]. The sustainability of the development process must be integrated across sectors in the economy, integrating business interests with community interests, and linking communities with government and sectors of the economy [19]. Accordingly, there exist three main aspects of sustainable entrepreneurship, namely: the purpose and motive of the startup are to ensure sustainability; proactively find and/or create innovations to address sustainability issues; solutions to the market through the innovative organization; and add value to social life support systems.

4. Entrepreneurship and startup market in Vietnam

4.1 Status of start-up activities in Vietnam

As of 2016, Vietnam has about 110,100 newly registered enterprises, an increase of nearly 14% compared to the number of newly registered enterprises in 2015. Business ideas are not only realized in the form of enterprises but also in the form of non-agricultural individual economic establishments (household businesses), farms, or self-employed individuals. In terms of start-up industries, there is diversity in many fields, including real estate, agriculture, forestry and fishery, arts and entertainment, transportation and warehousing, and employment services. In addition, the remaining industries also recorded growth in the number of newly registered enterprises, such as science and technology, construction, healthcare, social activities, finance, banking, and insurance. The comparison between fields of activity shows that enterprises in science and technology are more prominent than those in other fields. This fact reflects the conditions of the 4.0 digital era, with the following characteristics: without too much initial investment, science and technology start-ups operate mainly on creative ideas and innovation exchange easily in the international environment through modern technologies, increasing the feasibility of ideas (*National Business Registration Portal*).

The scale of Vietnamese enterprises includes small enterprises, small and medium enterprises, and large enterprises. However, according to the overall assessment, small and medium-sized enterprises account for the highest proportion, with the number of enterprises increasing more strongly than large-scale enterprises. Data reported by the General Statistics Office show that in 2017, the whole country had 10,000 large enterprises, an increase of 29% compared to 2015, but these large enterprises only accounted for 1.9% of the total number of enterprises. Meanwhile, the number of medium enterprises increased by 23.6% the number of small businesses increased by 21.2%. This trend is like the size of start-up businesses with most startups having an age of less than 1 year, and the size of the workforce being quite small. Specifically, in 2016 there were 7% of start-up enterprises with more than 50 employees, enterprises with 10–49 employees accounted for 30%, and enterprises with about 10 employees accounted for nearly 63%. Most start-ups are less involved in export activities, typically their main customers are domestic organizations or individuals, accounting for 81% (*The summary report of the General Statistics Office*).

4.2 Startup market in Vietnam

Since the government's policy of encouraging start-up activities, business startups in Vietnam tend to increase rapidly during the period 2013–2017. This is reflected in the ratio of business activities at the start-up stage—TEA. This index includes successful start-ups and startups. In 2013, the TEA index reached only 15%, and by 2017, the TEA index reached 23%, higher than in previous years (Vietnam Startup Index Report). The process of developing the startup movement not only stops at organizations and individuals forging startup ideas but the startup ecosystem has also been formed and developed to actively support startup projects. of the community. In 2017, it was formalized through the SME law on the definition of a startup, more than 3000 startups are operating in the market, forming 22 funds, early-stage investors, 25 funds, and operation-stage investors. Activities, 9 startup communication focal communities, more than 40 government support organizations/incubators, 6 business support organizations, and more than 13 large-scale startup events.

Vietnam's startup market is diversified in many fields. Startups form and develop diversely in most areas of the economy. Most startups take technology as the foundation, based on technology development to form new business models. However, there are still many start-up projects in fields such as real estate, agriculture, forestry and fishery, arts and entertainment, construction, etc., which only form business ideas based on a combination of business factors to create a business model with breakthrough creativity and competitiveness in the market. Entrepreneurship goes hand in hand with the explosive growth of the digital era. It is undeniable that technology startups are now dominating start-up businesses. Compared between fields, information technology startups have outstanding numbers in general, capital mobilization is becoming more and more exciting in Vietnam because of the attractiveness of the market. Investment capital in startups in Vietnam in recent years has mainly come from innovative start-up investment funds, economic groups, business promotion organizations, and existing angel investors in the market including international organizations and individuals. According to statistics in 2018, there were 92 investment deals with a total capital of 889 million USD, which, 10 large transactions are reaching 734 million USD. For example, Yeah1 reached 100 million USD, Sendo 51 million USD, Topica 50 million USD, and 7 other deals worth over 30 million USD. Thus, in 2018, the total amount of capital poured into Vietnamese startups has tripled since 2017 (Annual report on investment in Vietnamese startups 2018).

4.3 Opportunities and challenges for entrepreneurial/startups

Vietnam has a complete startup ecosystem that supports startups with component actors such as funds and investors, incubators, startup support programs, and service providers. All these factors create opportunities for startups to form and develop. At the same time, Vietnam is one of the countries that strongly encourage the development of startups. From the Government to the Ministries and Agencies, they all promote the spirit of entrepreneurship. 2016 has been designated as the year of the "Start-up Nation" by the Vietnamese Government. Startups in Vietnam have great growth potential. However, the startup community also faces some challenges. Specifically, most local startups are small, at the seed stage, and with limited capacity for a breakthrough that needs further incubation. Some of the current outstanding challenges facing startups in Vietnam are limited access to finance, lack of business knowledge and skills, intellectual property issues, and the ability to meet regulatory requirements and necessary administrative.

5. The decision to entrepreneurial of young entrepreneurs: an empirical study of the millennial generation in Vietnam

5.1 Introduction

Entrepreneurship has long been associated with human production and business activities. The study of entrepreneurship has been intensifying since the early nineteenth century and has exploded in recent times. According to Kogut and Sigh [20], entrepreneurship has contributed greatly to the economic prosperity of many countries. Countries with a strong entrepreneurial spirit do well with jobs and strong economic growth. Vietnam is an economic transition country; the Vietnamese government has introduced several policies to promote start-ups. However, like in some other countries

in Asia, the number of startups is still small. Academically, there have been some studies on entrepreneurship so far, but empirical research on millennials is limited, especially in the digital transformation era. This study attempts to fill the gap in factors influencing the entrepreneurial decisions of generation Y in the Vietnam context.

5.2 Literature review and hypothesis identification

Determining factors affecting entrepreneurial decisions is done through the studying documents and the research results are explained below.

5.2.1 Entrepreneurial education

Entrepreneurship education (EE) is a term used to motivate students to expand their knowledge and develop skills and motivation to entrepreneurial. EE is offered primarily through courses or programs at the university [21]. EE focuses on developing perception, skills to identify and realize opportunities, and how to manage to run a business. In the UK, EE offers a subject-based business curriculum that follows UK guidelines [22]. The European Commission sets out a Europe-wide output standard for how EE should be assessed [23] and best practice guidelines for schools European Commission [24]. Develop entrepreneurial risk-taking and problem-solving skills through EE [25]. Access to EE has helped millions of potential entrepreneurs prepare ready to overcome challenges to achieve success. Handaru et al. [26] suggest that people who undergo EE have a difference in self-efficacy in business compared to those who do not receive EE. Entrepreneurial self-efficacy is influenced by EE [27]. We propose hypothesis *H1. There is a positive relationship between EE and ES.*

5.2.2 Background of family (FB)

Family influences an individual's core cultural values [28]. Family background and kinship relationships influence entrepreneurship [29]. Previous research findings suggest family support is essential in entrepreneurial entrepreneurs' decision-making [30]. Individuals from families with entrepreneurial backgrounds can perceive the positivity of the karmic process [31]. People whose parents are entrepreneurs are allowed to do business and work with a high entrepreneurial orientation [32]. Family background is a variable affecting awareness and promoting entrepreneurial intention (EI) [33, 34]. Nguyen [35] stated that the family background supported the EI of students. From the above discussion and in the Vietnamese context, this study proposes the following hypothesis *H2. There is a positive relationship between family background and entrepreneurial self-efficacy.*

5.2.3 Entrepreneurial ecosystem

A startup ecosystem is a system consisting of direct or indirect, interdependent actors and relationships that support the formation and development of new business projects [36, 37]. According to Babson University, the startup ecosystem includes areas: policy, finance, culture, support, human resources, and markets [38]. The entrepreneurial ecosystem (EC) is a term that refers to the network of factors, organizations, individuals, or institutions that can hinder or motivate individuals to start a new business. The startup ecosystem is the basis of innovation, increasing productivity, creating jobs, and driving the economy. This ecosystem consists of many components

which are classified into eight main areas including human capital, culture, markets, policy, financial capital, support, infrastructure, and services [39].

The pillars belong to formal and informal institutions, which support and promote entrepreneurship [40]. It affects research and development direction, startup policies and infrastructure, training, access to capital, and recruitment. The EC depends on the social context, whether it allows or restricts entrepreneurship [41]. According to Miller and Acs [42], for universities, the startup ecosystem including leadership style, management, educational environment, and entrepreneurial training courses can be effective in promoting students. Potential employees. National macro policies and an effective political environment influence entrepreneurship [43, 44]. The interactions between people and organizations, infrastructure, and other factors create an EC that either enhances or inhibits entrepreneurship. It enables individuals and businesses to generate economic efficiency and prosperity [18]. From the role and importance of the startup ecosystem mentioned above, we propose hypothesis *H3. The EE has a positive impact on ES.*

5.2.4 Perceived behavioral control

Behavioral control refers to individuals in terms of their ability to perform controlled behavior [45, 46]. Self-efficacy and perceived behavioral control (PC) are two factors that are well-known and used interchangeably [47]. Cruz et al. [48] stated that "behavior control" is essentially self-efficacy, which is an individual's feelings and beliefs about the performance of his or her behavior. Some previous studies have demonstrated that PC affects risk-taking in risky projects [47]. Ruhle et al. [49] and Kadir et al. [50] also found the PC has a great impact on PC and intention. Liñán [51] suggests that personal preferences, PC, and subjective norms influence individuals' decisions to start a business. Research results of [52–54] concluded that PC affects EI. From the above arguments, we propose the hypothesis: *H4. The PC has a positive effect on EI.*

5.2.5 Social valuation

Social value is an expression of the key importance people place on the changes in their experience. A social valuation (SV) can help everyone change the way he understands and makes decisions to invest his time and money. SV is often considered the basis for implementation to achieve the goals of policymakers. Individuals tend to act within a framework of social judgment [55]. Social assessment is often based on a common scale [56]. Some research results showed that SV was a strong impact on EI. Bygrave and Minniti [57] conclude that entrepreneurial decision depends on SV. Following this line of thinking, research by Hmieleski and Corbett [58] suggests that an individual's EI depends on the SV of the place in which that individual operates. Every individual is influenced by the expectations of family and friends. Individuals' expectations of entrepreneurship are related to social norms [59]. According to [60], SV affects entrepreneurial behavior. In the spirit of entrepreneurship, personal views rooted in society play an important role. Depending on the context, SV can support or hinder EI. Therefore, we make hypothesis *H5. There is a positive relationship between SV and AT; H6. There is a positive relationship between SV and EI.*

5.2.6 Perceived opportunity

An opportunity is a set of ideas and actions that allow people to create goods or services for profit. It is an attraction from the market through which entrepreneurs can

introduce new products, services, or new ways of organizing their businesses to make a profit. Entrepreneurs see a start-up opportunity as the potential to launch a profitable startup business. Entrepreneurship opportunities manifest in many different forms and are influenced by socioeconomic conditions and context. Hence, entrepreneurs need to take a balanced financial and environmental approach when evaluating a startup opportunity. When individuals or start-up groups see an opportunity to start a business, they will promote startups, and organize human resources, goods, and services, to introduce and sell to the market [61]. When faced with a startup opportunity, entrepreneurs are the ones who can make different decisions. Perceptions of opportunities also vary between individuals. Entrepreneurs perceive and pursue economic values differently, so recognizing opportunities influences their behavior. In addition, everyone may interpret startup opportunities differently. In Vietnam, according to GEM (2017/2018), up to 46.4% of survey respondents see a start-up opportunity, ranking 23 out of 54 countries in their research. From the discussion above, we find that opportunity recognition can influence attitudes toward business behavior. The hypothesis is that *H7. There is a positive relationship between PC and AT.*

5.2.7 Attitude toward entrepreneurship

Attitude toward entrepreneurship (AT) reflects the degree of an individual's desire to become an entrepreneur [62, 63]. The difference between the two attitudes is affection feelings or emotions and motivations [64]. Individuals' attitudes influence their EIs [65, 66] a person's beliefs, and attitudes affect their EI [67, 68]. Research findings of Nguyen [69–71] and Doane et al. [52] showed that attitude positively influences behavioral intention. A positive attitude and willingness to take risks will affect their EI [72]. According to Ajzen and Sheikh [72], EI and AT are related. From this argument, the hypothesis proposed is *H8. There is a positive relationship between AT and EI.*

5.2.8 Entrepreneurial self-efficacy (ES)

Entrepreneurial self-efficacy is a term used to describe an entrepreneur's belief in his or her ability to perform tasks and run a business activity or firm [73]. Self-efficacy will depend on each field and each industry toward a certain behavior or result. Entrepreneurial self-efficacy is the factor that affects the recognition of opportunities and the perception of the feasibility of potential entrepreneurs [74]. Entrepreneurs' self-efficacy affects their choice of action and their efforts during action [75]. When self-efficacy is higher, potential entrepreneurs' perception of feasibility is higher. For students, their self-efficacy enhances their EIs [76]. Research results by Nguyen and Nguyen [77] show that ES has a significant positive impact on the student's EI. Entrepreneurial self-efficacy is a key factor affecting entrepreneurship [78, 79]. The ES has a positive effect on the EI of entrepreneurs [80]. It consistently and significantly positively affects the likelihood of becoming an entrepreneur [81]. Based on the previous studies, the hypothesis suggests *H9. There is a positive relationship between ES and ED.*

5.2.9 Entrepreneurial intentions

EI is the awareness, conviction, and mental state that directs and guides one's attention, experiences, actions, goal setting, commitment, and other types of work to act [82, 83]. The intention to start a firm is not a yes or no decision but it is influenced

by many other factors that lead to the decision to start a business. Entrepreneurship is a dynamic process that occurs over time and involves increasing levels of entrepreneurial involvement [84]. According to Shapero and Sokol [85], EIs include a series of purposeful, cognitive-based decisions. Entrepreneurship intention represents a quantifiable outcome of EE programs, it influences the decision to start a business [47, 86]. Confirm that EI has a positive influence on entrepreneurial decisions [87]. For the nascent entrepreneur, the EI strongly influences entrepreneurial decision [88]. In Vietnam, the results published by GEM [89] show that up to 25.0% of survey respondents intend to start a firm, ranking 19th out of 54 countries in GEM's research.

5.2.10 Entrepreneurial decision

The entrepreneurial decision is the most important moment in the entrepreneurial process. It helps entrepreneurs achieve success in business ventures. Deciding entrepreneurial decision takes a lot of courage to overcome obstacles. To succeed in business, entrepreneurs need perseverance and persistence. When entrepreneurs identify prospects, they translate their intentions into the decision to start a business. Some studies have confirmed that there are many factors affecting the decision to be entrepreneurial. It is subjective norms, attitude, EE, perceived control behavior, SV, and EI [46, 90]. According to [91, 92], the entrepreneurial decision is to establish an organization with business functions. In this study, the entrepreneurial decision was based on and operated for more than 12 months. Entrepreneurial decisions are either owners or co-owners.

5.3 Results

5.3.1 Measurement model

Following the standard procedure for structural equation modeling (SEM) analysis by using partial least squares structural equation modeling (PLS-SEM) software, to test the validity and reliability of variables and measurement items, it is necessary to calculate the full evaluation of the measurement model and structural equation modeling. It is necessary to evaluate the reliability of measurement items. The results show that three unreliability items must be removed from the model. The 37 items and 10 valid variables of the model are analyzed in the next steps.

Model fit test: The model is fit when SRMR < 0.08. The results show that this model exhibits SRMR = 0.039, which conforms to the described criteria below the 0.08 level. So, the overall model had a good fit. Regarding collinearity, we check the VIF values of the items. The results showed that AT1 and AT4 measurement items that have VIF values greater than 5 should be excluded from the model. All other measurement items have VIF values less than 5.0. Therefore, the measurement items are not collinear, and we can continue with other tests.

Reliability and validity: an analysis will be performed by SmartPLS software and test reliability and validity through individual confidence indicators, internal consistency convergent, and AVE. A variable and items achieve internal consistency convergent if its composite reliability (CR) and Cronbach's alpha (CA) are greater than 0.6. The analysis results show that the CR of all the variables ranged from 0.811 to 0.918 and CA ranged from 0.653 to 0.885 (**Table 2**). Thus, all variables and items achieved internal consistency convergence. This study tested the convergence validity using both the outer loading and extracted mean–variance (AVE). The results show

Variable	Hypothesis	Path	Mean	*t*-value	*p*-value	Hypothesis result
EE→ES	H1	0.164	0.181	2.783	0.006	Supported
FB→ES	H2	0.186	0.197	2.653	0.008	Supported
EC→ES	H3	0.221	0.228	3.677	0.000	Supported
PC→EI	H4	0.186	0.196	3.154	0.002	Supported
SV→AT	H6	0.252	0.254	3.683	0.000	Supported
PO→AT	H7	0.173	0.187	3.058	0.002	Supported
AT→EI	H8	0.418	0.419	7.085	0.000	Supported
ES→ED	H9	0.205	0.206	3.581	0.000	Supported
EI→ED	H10	0.465	0.468	7.635	0.000	Supported

Table 2.
Path coefficient and hypothesis testing.

that the outer loading of items ranged from 0.725 to 0.943 is greater than 0.7 and the AVE of 10 variables from 0.589 to 0.846 is greater than 0.5, so it achieved validity.

Discriminant value: Discriminant value is tested by HTMT value. The results show that all variables have values < 0.85. Therefore, the variables in the study have excellent discriminant values.

5.3.2 Structural model

To test the hypotheses, SmartPLS software was used with bootstrapping 5000 and a significance level P value of 0.05. The results show that out of 10 proposed hypotheses, there are 9 supported hypotheses and 1 rejected hypothesis (H5). The path coefficients range from 0.164 to 0.465, in which hypotheses H10 and H8 are strongly supported with path coefficients of 0.465 and 0.418, respectively (**Table 2** and **Figure 2**). The results of this study are like those of [26, 27]. The family background factor is like that studied by Laspita et al. [93]. The EC factor is like the study of Stam and Spigel [94]; cognitive factors control behavior like the study of [52, 54]. Research results of [61, 95] conclude that SV affects EI. This study's results are compatible with [61] on the element of opportunity identification; the results research of [67, 72] on attitude factors; the research of [78, 79] on the self-efficacy of entrepreneurs and business decision factors in the studies of [85] and the research of [77].

5.4 Conclusion

Thus, through experimental research in Vietnam, derived from a research model on factors affecting EI, including variables drawn from domestic and foreign studies. The research results show findings: the entrepreneurial decision of young entrepreneurs in Vietnam depends on independent variables: entrepreneurial education, the background of the family, EC, perceived control behavior, SV, perception of entrepreneurial opportunity, and mediating variables: attitude, entrepreneurial self-perception, and EI. The entrepreneurial decisions of millennial generation entrepreneurs are influenced by some factors, so to promote entrepreneurship, the government needs to create a startup ecosystem, strengthen EE, and create a favorable environment for entrepreneurs.

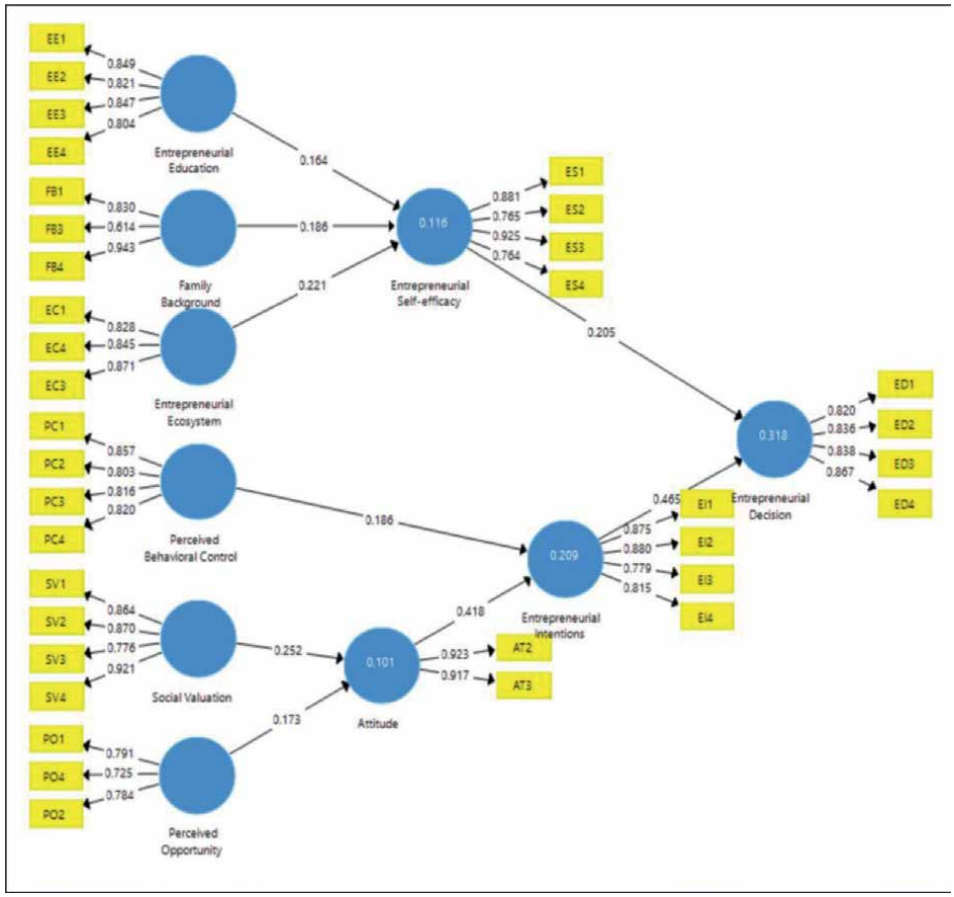

Figure 2.
Structural equation modeling.

6. Summary

This chapter summarizes the issues of starting a business in Vietnam and examines the factors affecting the business decisions of the young Vietnamese generation in the context of a globalized developing economy. The issue of starting a business is topical in the economy, attracting the attention of not only generations of students, entrepreneurs, businesspeople, and the business community but also an important issue at the heart of the Government and socio-economic organizations in the economy. Creating a start-up environment, developing and implementing startup strategies and policies, and driving forces to promote start-ups, targeting start-up subjects are the main issues of startup development in a country. The factors affecting business start-ups as mentioned above have been shown in the context of Vietnam, the results of this study will be the foundation for consulting policymakers, it is necessary to have impacts to promote the start-up process, form new businesses, and promote economic development.

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Author details

Nguyen Xuan Truong* and Dang Van My
University of Finance and Marketing

*Address all correspondence to: ts.truong@ufm.edu.vn, dvanmy@ufm.edu.vn

References

[1] Hayter CS. Conceptualizing knowledge-based entrepreneurship networks: Perspectives from the literature. Small Business Economics. 2013;**41**(4):899-911

[2] Alvarez SA, Barney JB. Entrepreneurial opportunities and poverty alleviation. Entrepreneurship Theory and Practice. 2014;**38**(1):159-184

[3] Morris MH. Entrepreneurial Intensity: Sustainable Advantages for Individuals, Organizations, and Societies. Greenwood Publishing Group; 1998;**1**

[4] Nagarajan K. A history of entrepreneurship. International Journal of Business and Social Science. 2011;**2**(9):241-242

[5] Göcke L, Weninger R. Business model development and validation in digital entrepreneurship. Digital Entrepreneurship. 2021;**71**

[6] Osterwalder A, Pigneur Y, Oliveira MAY, Ferreira JJP. Business Model Generation: A handbook for visionaries, game changers and challengers. African journal of business management. 2011;**5**(7):22-30

[7] Maurya A. Running Lean: Iterate from Plan A to a Plan That Works2012. p. 240

[8] Ghezzi A. Digital startups and the adoption and implementation of Lean Startup Approaches: Effectuation, Bricolage and Opportunity Creation in practice. Technological Forecasting and Social Change. 2019;**146**:945-960

[9] Wirtz BW. Digital Business Models: Concepts, Models, and the Alphabet Case Study. Springer; 2019

[10] Gawer A. Bridging differing perspectives on technological platforms: Toward an integrative framework. Research Policy. 2014;**43**(7):1239-1249

[11] Evans DS, Schmalensee R. Matchmakers: The new economics of multisided platforms. Harvard Business Review Press; 2016

[12] Parker GG, Van Alstyne MW, Choudary SP. Platform revolution: How networked markets are transforming the economy and how to make them work for you. WW Norton & Company; 2016

[13] Damanpour F. Organizational innovation: A meta-analysis of effects of determinants and moderators. Academy of Management Journal. 1991;**34**(3):555-590

[14] Belz FM, Binder JK. Sustainable entrepreneurship: A convergent process model. Business Strategy and the Environment. 2017;**26**(1):1-17

[15] Parrish BD, Foxon TJ. Sustainability entrepreneurship and equitable transitions to a low-carbon economy. Greener Management International. 2009;**55**:47-63

[16] Schaltegger S, Wagner M. Sustainable entrepreneurship and sustainability innovation: Categories and interactions. Business Strategy and the Environment. 2011;**20**(4):222-237

[17] Hart SL. Capitalism at the Crossroads: The Unlimited Business Opportunities in Solving the World's Most Difficult Problems. Pearson Education; 1 January 2005

[18] Prahalad CK. The Fortune at the Bottom of the Pyramid: Eradicating Poverty Through Profits. Philadelphia, PA: Wharton School of Publishing; 2004

[19] Robinson J. Squaring the circle? Some thoughts on the idea of sustainable development. Ecological Economics. 2004;**48**(4):369-384

[20] Kogut B, Singh H. The effect of national culture on the choice of entry mode. Journal of International Business Studies. 1988;**19**:411-432

[21] Fiore E, Sansone G, Paolucci E. Entrepreneurship education in a multidisciplinary environment: Evidence from an entrepreneurship programme held in Turin. Administrative Sciences. 2019;**9**(1):1-28. DOI: 10.3390/admsci9010028

[22] Quality Assurance Agency for Higher Education. Enterprise and entrepreneurship education: guidance for UK higher education providers. Gloucester: QAA; 2012

[23] European Education Area. Education and Training. 2014. Available from: https://education.ec.europa.eu/policy/strategic-framework/archive/documents/entrepreneurship-report-2014_en.pdf

[24] European Commission. Entrepreneurship Education: A Guide for Educators. Brussels: European Commission – DG Enterprise and Industry; 2013

[25] Masika R, Jones J. Building student belonging and engagement: Insights into higher education students' experiences of participating and learning together. Teaching in Higher Education. 2016;**21**(2):138-150

[26] Handaru AW, Parimita W, Subekti W. Entrepreneurial self-efficacy, ethnicity, gender, and educational background: Evidence from the Kuningan international trade center, Jakarta, Indonesia. Recent Trends in Social and Behavior Sciences. CRC Press; 2014:113-117. EBook ISBN: 9780429227387

[27] Margahana H. Self efficacy, self personality and self confidence on entrepreneurial intention: Study on young enterprises. Journal of Entrepreneurship Education. 2019;**22**(1):1-12

[28] Landau J. Enhancing resilience: Families and communities as agents for change. Family Process. 2007;**46**(3):351-365

[29] Danes SM, Lee J, Stafford K, Heck RKZ. The effects of ethnicity, families, and culture on entrepreneurial experience: An extension of sustainable family business theory. Journal of Developmental Entrepreneurship. 2008;**13**(3):229-268

[30] Klyver K. Shifting family involvement during the entrepreneurial process. International Journal of Entrepreneurial Behavior & Research. 2007;**13**(5):258-277

[31] Fairlie RW, Robb A. Families, human capital, and small business: Evidence from the characteristics of business owners survey. ILR Review. 2007;**60**(2):225-245

[32] Ullah H, Dean BS, Kaleem M. A study of owners' inherited factors affecting orientation in Khyber Pakhtunkhwa-Pakistan. Interdisciplinary Journal of Contemporary Research in Business. 2011;**3**(1):712-725

[33] Blanchflower DG, Saleheen J, Shadforth C. The impact of the recent migration from Eastern Europe on the UK economy. IZA Discussion Paper No. 2615. 2007. Available from: http://ftp.iza.org/dp2615.pdf

[34] Carr JC, Sequeira JM. Prior family business exposure as intergenerational

influence and entrepreneurial intent: A theory of planned behavior approach. Journal of Business Research. 2007;**60**(10):1090-1098

[35] Nguyen XT. Factors that influence the intentions to revisit Korea of Vietnamese tourists. Journal of Asian Finance, Economics, and Business. 2020;**7**(4):247-258. DOI: 10.13106/jafeb.2020.vol7.no4.247

[36] Cavallo A, Ghezzi A, Balocco R. Entrepreneurial ecosystem research: Present debates and future directions. International Entrepreneurship and Management Journal. 2019;**15**(4):1291-1321. DOI: 10.1007/s11365-018-0526-3

[37] Liguori E, Bendickson J, Solomon S, McDowell WC. Development of a multi-dimensional measure for assessing entrepreneurial ecosystems. Entrepreneurship and Regional Development. 2019;**31**(1-2):7-21. DOI: 10.1080/08985626.2018.1537144

[38] Liguori E, Bendickson JS. Rising to the challenge: Entrepreneurship ecosystems and SDG success. Journal of the International Council for Small Business. 2020;**1**(3-4):118-125

[39] World Economic Forum. Entrepreneurial Ecosystems Around the Globe and Company Growth Dynamics (Industry Agenda). Geneva: World Economic Forum; 2013

[40] Foster G, Shimizu C, Ciesinski S, Davila A, Hassan S, Jia N, et al. Entrepreneurial ecosystems around the globe and company growth dynamics. World Economic Forum. 2013;**11**:1-36

[41] Acs ZJ, Autio E, Szerb L. National systems of entrepreneurship: Measurement issues and policy implications. Research Policy. 2014;**43**(3):476-494

[42] Miller DJ, Acs ZJ. The campus as entrepreneurial ecosystem: The University of Chicago. Small Business Economics. 2017;**49**(1):75-95

[43] Entezari Y. Innovative entrepreneurship ecosystem: General patterns and its lessons for Iran. Journal of Entrepreneurship Development. 2018;**11**(1):21-40

[44] Ghambarali R, Agahi H, Alibayghi A, Zarafshani K. Content analysis of policies being appropriate to the entrepreneurial ecosystem. Journal of Entrepreneurship Development. 2016;**9**(1):39-58

[45] Ajzen I. The theory of planned behavior. Organizational Behavior and Human Decision Processes. 1991;**50**(2):179-211

[46] Utami CW. Attitude, subjective norms, perceived behavior, entrepreneurship education and self-efficacy toward entrepreneurial intention University Student in Indonesia. European Research Studies Journal. 2017;**20**(2A):475-495

[47] Pihie ZAL, Akmaliah Z. Entrepreneurship as a career choice: An analysis of entrepreneurial self-efficacy and intention of university students. European Journal of Social Sciences. 2009;**9**(2):338-349

[48] Cruz LD, Suprapti NWS, Yasa K. Aplikasi theory of planned behavior dalam membangkitkan niat berwirausaha bagi mahasiswa fakultas ekonomi unpaz, dili Timor Leste. E-jurnal ekonomi dan bisnis Universitas Udayana. 2015;**4**(12):895-920

[49] Ruhle S, Mühlbauer D, Grünhagen M, Rothenstein J. The heirs of Schumpeter: An insight view of students' entrepreneurial intentions at the Schumpeter School of Business and

Economics (No. 2010-004). Schumpeter discussion papers. 2010

[50] Kadir MBA, Salim M, Kamarudin H. The relationship between educational support and entrepreneurial intentions in Malaysian higher learning. Procedia-Social and Behavioral Sciences. 2012;**69**:2164-2173

[51] Liñán F. Intention-based models of entrepreneurship education. Piccolla Impresa/Small Business. 2004;**3**(1):11-35

[52] Doane AN, Pearson MR, Kelley ML. Predictors of cyberbullying perpetration among college students: An application of the theory of reasoned action. Computers in Human Behavior. 2014;**36**(C):154-162

[53] Gardner B, Abraham C. Psychological correlates of car use: A meta-analysis. Transportation Research Part F: Traffic Psychology and Behaviour. 2008;**11**(4):300-311

[54] Maresch D, Harms R, Norbert KN, Wimmer-Wurm B. The impact of entrepreneurship education on the entrepreneurial intention of students in science and engineering versus business studies university programs. Technological Forecasting and Social Change. 2016;**104**(C):172-179

[55] Ruff CC, Fehr E. The neurobiology of rewards and values in social decision making. Nature Reviews Neuroscience. 2014;**15**(8):549-562

[56] Lehner R, Balsters JH, Herger A, Hare TA, Wenderoth N. Monetary, food, and social rewards induce similar Pavlovian-to-instrumental transfer effects. Frontiers in Behavioral Neuroscience. 2017;**10**:247

[57] Bygrave W, Minniti M. The social dynamics of entrepreneurship. Entrepreneurship Theory and Practice. 2000;**24**(3):25-36

[58] Hmieleski KM, Corbett AC. Proclivity for improvisation as a predictor of entrepreneurial intentions. Journal of Small Business Management. 2006;**44**(1):45-63

[59] Kennedy J, Drennan J, Renfrow P, Watson B. Situational factors and entrepreneurial intentions. Paper for the Small Enterprise Association of Australia and New Zealand. In 16th Annual Conference. Vol. 28. Ballarat. 2003

[60] Zahra SA, Jennings DF, Kuratko DF. The antecedents and consequences of firm-level entrepreneurship: The state of the field. Entrepreneurship Theory and Practice. 1999;**24**(2):45-65

[61] Shane S, Venkataraman S. The promise of entrepreneurship as a field of research. Academy of Management Review. 2000;**25**(1):217-226

[62] Liñán F, Chen YW. Development and cross–cultural application of a specific instrument to measure entrepreneurial intentions. Entrepreneurship Theory and Practice. 2009;**33**(3):593-617

[63] Souitaris V, Zerbinati S, Al-Laham A. Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. Journal of Business Venturing. 2007;**22**(4):566-591

[64] Jung Chang H, Yan RN, Eckman M. Moderating effects of situational characteristics on impulse buying. International Journal of Retail & Distribution Management. 2014;**42**(4):298-314

[65] Autio E, Keeley RH, Klofsten M, Parker GGC, Hay M. Entrepreneurial

intent among students in Scandinavia and in the USA. Enterprise and Innovation Management Studies. 2001;**2**(2):145-160

[66] De Noble AF, Jung D, Ehrlich SB. Entrepreneurial self-efficacy: The development of a measure and its relationship to entrepreneurial action. Frontiers of Entrepreneurship Research. 1999;**1999**(1):73-87

[67] Byabashaija W, Katono I. The impact of college entrepreneurial education on entrepreneurial attitudes and intention to start a business in Uganda. Journal of Developmental Entrepreneurship. 2011;**16**(1):127-144

[68] Kolvereid L. Prediction of employment status choice intentions. Entrepreneurship Theory and Practice. 1996;**21**(1):47-58

[69] Nguyen XT. The impact of social media usage on hi-tech products purchase decision of generation Y in Vietnam. GE International Journal of Management Research. 2015;**3**(10):123-147

[70] Nguyen XT. Factors impacting on Korean consumer goods purchase decision of Vietnam's generation Z. Journal of Distribution Science. 2019;**17**(10):61-71. DOI: 10.15722/jds.17.10.201910.61

[71] Nguyen TN. The effect of bribery on firm innovation: An analysis of small and medium firms in Vietnam. Journal of Asian Finance, Economics, and Business. 2020;**7**(5):259-268. DOI: 10.13106/jafeb.2020.vol7.no5.259

[72] Ajzen I, Sheikh S. Action versus inaction: Anticipated effect in the theory of planned behavior. Journal of Applied Social Psychology. 2013;**43**(1):155-162

[73] Chen CC, Greene PG, Crick A. Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? Journal of Business Venturing. 1998;**13**(4):295-316

[74] Krueger NF Jr, Brazeal DV. Entrepreneurial potential and potential entrepreneurs. Entrepreneurship Theory and Practice. 1994;**18**(3):91-104

[75] Shepherd DA, Krueger NF. An intentions based model of entrepreneurial teams' social cognition. Entrepreneurship Theory and Practice. 2002;**27**(2):167-185

[76] Saraih UN, Aris AZZ, Mutalib SA, Ahmad TST, Abdullah S, Amlus MH. The influence of self-efficacy on entrepreneurial intention among engineering students. MATEC Web of Conferences. Vol. 150. 2018. p. 05051

[77] Nguyen TX, Nguyen TQT. Factors affecting start-up intention of economics students in the south of Vietnam. Proceedings of the International Conference on Business and Economics. 2019;**2019**:63-70 https://www.winplace.com.vn/tu-duy-khoi-nghiep-dung-cach

[78] Asoni A. Intelligence, self-confidence, and entrepreneurship. Working Paper No. 887. University of Chicago and Research Institute of Industrial Economics (IFN); 2011. pp. 1-31

[79] Neto RDCA, Rodrigues VP, Melendez A. Creative thinking and entrepreneurial behavior among k-12 teachers: A predictive study. Psicotecnia. 2018;**49**(4):395-401

[80] Mauer R, Neergaard H, Linstad AK. Self-efficacy: Conditioning the entrepreneurial mindset. In: Revisiting the Entrepreneurial Mind: Inside the Black Box: An Expanded Edition. New York: Springer; 2017. pp. 293-317

[81] Zhao H, Seibert SE, Hills GE. The mediating role of self-efficacy in

the development of entrepreneurial intentions. Journal of Applied Psychology. 2005;**90**(6):1265-1272. DOI: 10.1037/0021-9010.90.6.126

[82] Thompson ER. Individual entrepreneurial intent: Construct clarification and development of an internationally reliable metric. Entrepreneurship Theory and Practice. 2009;**33**(3):669-694

[83] Fini R, Grimaldi R, Marzocchi GL, Sobrero M. The determinants of corporate entrepreneurial intention within small and newly established firms. Entrepreneurship Theory and Practice. 2012;**36**(2):387-414

[84] Van der Zwan P, Thurik R, Grilo I. The entrepreneurial ladder and its determinants. Applied Economics. 2010;**42**(17):2183-2191

[85] Shapero A, Sokol L. The social dimensions of entrepreneurship. In: Encyclopedia of Entrepreneurship. Englewood Cliffs, NJ: Prentice-Hall; 1982. pp. 72-90. DOI: 10.1093/oxfordhb/9780199546992.003.0019

[86] Fitzsimmons JR, Douglas EJ. Interaction between feasibility and desirability in the formation of entrepreneurial intentions. Journal of Business Venturing. 2011;**26**(4):431-440

[87] Douglas EJ. Reconstructing entrepreneurial intentions to identify predisposition for growth. Journal of Business Venturing. 2013;**28**(5):633-651

[88] Amorós JE, Bosma N. Global Entrepreneurship Monitor 2013 Global Report. Wellesley, MA: Babson College; 2014

[89] GEM. (2018). Available from: https://www.gemconsortium.org/report/gem-2018-2019-global-report

[90] Dohse D, Walter SG. Knowledge context and entrepreneurial intentions among students. Small Business Economics. 2012;**39**(4):877-895

[91] Holcomb TR, Ireland RD, Holmes RM Jr, Hitt MA. Architecture of entrepreneurial learning: Exploring the link among heuristics, knowledge, and action. Entrepreneurship Theory and Practice. 2009;**33**(1):167-192

[92] Unger JM, Rauch A, Frese M, Rosenbusch N. Human capital and entrepreneurial success: A meta-analytical review. Journal of Business Venturing. 2011;**26**(3):341-358

[93] Laspita S, Breugst N, Heblich S, Patzelt H. Intergenerational transmission of entrepreneurial intentions. Journal of Business Venturing. 2012;**27**(4):414-435

[94] Stam FC, Spigel B. Entrepreneurial ecosystems. USE Discussion Paper Series. 2016;**16**(13)

[95] Zahra SA, Kuratko DF, Jennings DF. Corporate entrepreneurship and wealth creation: Contemporary and emerging perspectives. Entrepreneurship Theory and Practice. 1999;**24**(2):5-8

Chapter 6

Start-Up Business Investment: The Case of Mongolia

Altanchimeg Zanabazar and Sarantuya Jigjiddorj

Abstract

Innovation and technology-based startups are crucial for converting knowledge into wealth and boosting economic development. Many countries are investing heavily in science, high technology, and innovation to strengthen their national innovation capacities. In Mongolia, there has been a recent increase in capacity-building initiatives and programs for startups. However, investment-related issues remain unsolved and significantly hinder the further growth of these businesses. This study aims to provide an overview of the present condition of startup businesses in Mongolia and the challenges they face. Secondary data is used to analyze the limited funding opportunities and the traditional methods used in fundraising that prevent businesses from growing. The major challenges faced by these businesses include recruiting new employees, fundraising, attracting customers and increasing sales, developing teams, developing new products and services, and penetrating the international market. To overcome these challenges, there is a need to create a legal environment that supports startup economic development and enhances the enforcement of the Law of Innovation through developing sound policy instruments. This chapter concludes by highlighting the need for sustainable funding sources for startups and the importance of establishing a supportive legal environment to ensure the smooth implementation of policies that promote startup growth in Mongolia.

Keywords: sup business, startup funding, types of startup business investment, case of Mongolia, investment sources

1. Introduction

A start-up business is unique as it has specific features that are not common in other types of businesses like high social impact, high reliance on technology, and out-of-the-ordinary solutions that bring significant contributions to society and the economy of the countries. In the digitalized era, the development of a country can be recognized by the technology sector, the number of unicorn companies, and the startup ecosystem advancement.

Startup businesses have specifics not common in any other businesses as it brings a strong impact on society through their unique solutions based upon high technology

that contributes significantly to the economic and social development of any country. It serves as a solid foundation for innovation since all activities of the business intensely deal with innovative solutions [1].

A startup is a temporary organization designed to look for a business model that is repeatable and scalable [2].

Startup businesses are most concerned with the creation of a business model that focuses on the development of innovative, unique products and services or processes, as well as businesses around the platform to bring them to the market making them desirable for the customers [3]. It has become notable in creating jobs, boosting innovation as well as competition and the financing of startup businesses grow persuasive in the economy. Financing decisions are crucial in recognizing the potentiality of the businesses to survive and prospect and risks [4].

Financial decisions generally depend on the choices available to businessmen. The potential funding is significant in the launch, survival, and expansion of any startup [5]. Raphael et al. noted that attracting investment is one of the key skills of the businessman [6].

Typically, startups require a heavy investment in the initial stage for developing new products and services and earn limited incomes as they lack expertise and additional investment to sustain the businesses. Fundraising remains the major challenge for most businesses and a key success factor. Furthermore, they make substantial efforts to differentiate their businesses from their rivals to take a better position in the market. The typical problems encounter among startups due to lack of capital and business experience. The most challenging issue among local startups is financing that has not been resolved yet and that prevents them to expand their operations.

2. Literature review

The meaning of startup is perceived as the initiation or start of any processes or activities. The terminology was used by Forbes magazine in 1976 to describe small companies with high growth potential, especially, an increase of information technology businesses in early 2000 like Dot com bubble in Silicon Valley served as the origin of the term. The technology-based competition allowed these businesses magnificently compete in the market yielding immense profits and attracting numerous angel investors. Startup businesses are developing progressively not only internet-dominated businesses but also entering through technological solutions to the industries like banking, finance, insurance, commerce, logistics, and real estate.

Therefore, for any person who pursues transferring his/her idea into a real business activity attracting funding or raising the fund is a long way to learn and experience the real world. The knowledge and skills in funding technology are getting essential ever in a rapidly transforming business environment, particularly for the younger generations who often choose a free-lance professional career path that often ends in launching new startup businesses.

The funding of startups is tricky but provides diverse alternatives that make the businesses select the most appropriate ones. To better understand the alternatives of funding, the following part will guide you to the best options that exactly meet your needs. One of the key aspects of startup development is the funding opportunity that plays a crucial part in the initial stage. The appropriateness of financing startups depends on the development stage of the businesses and the other essential aspects

like return on investment, loan conditions, financial capital as well as any other types of support for the beneficiaries.

To mature, the startup businesses undergo the following stages:

2.1 Development stages of startup business

- Seed stage–Various actions are taking a place in this stage including idea development, market research, product design, development of service concepts, development of the business plan, and search for funding sources.

- Early stage—This stage is mainly devoted to experimenting with business ideas and introducing the product and service to the market.

- Mid-stage—Businesses get stabilized and operations are maintained as a result of the increase in demand for their products and services, which enables the businesses to strengthen their market position.

- Last stage—the enterprise activities are fully stabilized and turn into a mature business that seeks an opportunity to sell shares of stock to the public.

2.2 Main investment sources of startup business

One of the success factors of startup businesses is financing opportunity that is critical in any stage of development, especially acquiring adequate funding in the initial stage is indispensable. The biggest challenge for many startup businessmen remains to find the initial capital to launch the business or expand it [7].

Despite accumulating working capital, the new businesses need funding real estate, which is often solved through utilizing international funding, but in later stages, external funding is sought for the expansion [8].

Depending on the stages of the development of the startups, it is essential to consider certain conditions including return on investment, loan condition, and nonfinancial support in selecting an appropriate type of financing. Moreover, attracting the funding technology differed slightly relying on the stages of the development [9] as it is shown in the chart (**Figure 1**).

2.3 First stage of the financing life cycle (seed funding/capital stage)

Seed money is a form of financial means where an investor invests capital in a startup company in exchange for equity in the company. The term seed refers to the early investment to support the business until they stay confident or survive in the market until it is ready for further investments.

In the initial stage, seed financing is required for any business to transfer the idea into the business and it is often referred to as the initial investment. Technology-related businesses with a fast pace of development usually seek an opportunity to access the current financing to boost their growth and accelerate product development [11].

Seed financing options include [12]:

- Friends and family funding,

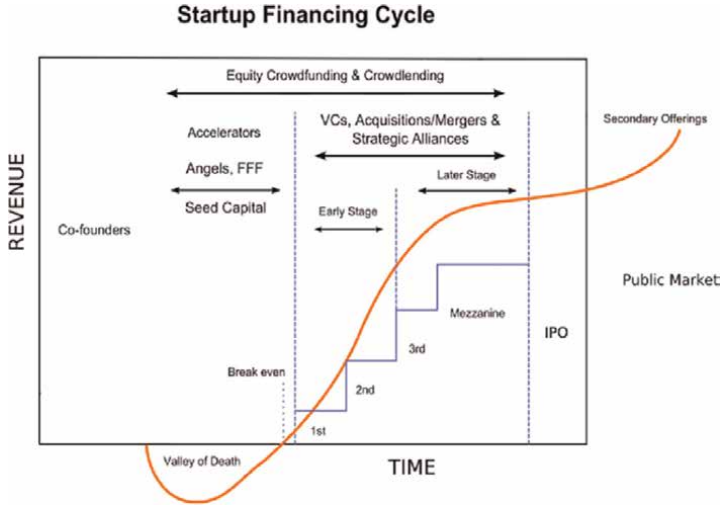

Figure 1.
Stages of startup business development and financing cycle. Source: [10].

- angel funding,
- government schemes/grants,
- bootstrapping, and
- crowdfunding

    - *Self-financing*: It is frequently used as a convenient financial source in the initial phase of the business as it enables the creation and development of the establishment. However, further operations necessitate additional funding to expand the scope and scale of the business. The advantage of this type of financing is the owner's ability to monitor the company business, but the disadvantage is the lack of prospects extending their network within the professional sphere and learning the best practices and expertise.

    - *Friends and family funding*: Based upon the credibility of the business project family members and friends of the business person invest in the business as support. The advantages of this type of financing are skipping red tape and diverse risk assessment and criteria for funding, which are the compulsory procedure in accessing the investment, however, the amount of financing is usually sufficient for the initial stage of the newly launched business. Large involvement of personal relations likely damaging due to the business-related risks, there is no guarantee to save their investment as well as close tie.

    - *Business angels*: This approach has been used since the 1900s. Angel's meaning of exemplary conduct is exactly suited for its deed for the startups that sharply need the support to survive "Valley of death" in the initial stage.

Angel investors or private persons are those who typically provide insignificant sums of investment for recently established companies to assist in implementing business ideas in exchange for share capital of the future business. The angels usually have business experience and expertise in corporate management and tend to invest in the familiar business [13].

- *Government financing*: Government financing for startups is motivated by two factors - creating job opportunities and fostering a favorable socio-economic environment. For instance, if a company develops an innovative process, it not only generates income for the developer but also makes it easier for other businesses to replicate and implement the same, leading to community-wide benefits. Preventing investment in such startups could hinder access to these benefits. Moreover, proponents of government financing strongly advocate for investing in startups, considering the limited funding opportunities available in the initial stage of their development [13].

- *Bootstrapping*: It is a convenient option to invest with no involvement of a third party, which is called bootstrapping. In reality, it is not an easy task for establishing the foundation of the business, but rather a strategic mode of financing [14].

Bootstrapping requires the business person to possess a certain income that is sufficient for funding startups unless third-party involvement is unnecessary [15]. The advantage of the approach is to enjoy full authorization to control the business, but if the owner lacks sufficient business experience, then it will be a disadvantage in the competition.

Freear et al. identified the prevalence of the following types of bootstrapping [16]:

1. Launch of product development,

2. business accelerator, and.

3. use of own resources to reduce the external funding needs

- *Crowd-funding*: The term is used since 1890 and initially, it is used for fundraising from the public. The concept remains the same except for the use of the internet platform, which widely entered daily life in the new millennium. In the present day, it is regarded as a way of raising money for financing business projects and the user himself turns into a financer. Starting from a few people or a large number of people are involved in collecting the fund via an online platform. In the case of using this approach, warranting an equal return on the invested money is more significant than the credibility of the business project [17]. Three parties are involved in this financing approach: business project initiator, the public who seek a return on their investment, and public financing organizations or businessmen, interested parties involved with the financing mechanism [18].
  Crowd-funding is executed on a voluntary initiative and contributes significantly to boosting the development of innovative products. Types of

the Crowdfunding:

- *Reward crowdfunding*: The project initiator conducts the promotional sale of a sample of products or services to attract the funding.
- *Charity crowdfunding*: Public or private challenge that is solved with aid of the public and private fundraising.
- *Equity crowdfunding*: similar to the traditional stock exchange, but an institution and a person have communication on raising funds. There is an option to involve more people in this transaction.
- *Lending crowdfunding*: Public fundraising in an exchange for interest payments. Moreover, P2P and small loans are considered lending crowdfunding.

2.4 Second stage of financing life cycle (early stage/growth stage)

At this stage, the following options for financing are available [10]:

- Venture capital,
- private equity, and
- strategic alliances like:
  - Joint venture
  - Mergers and acquisition

Seed money and venture capital differ in certain characteristics. Seed money involves high risk as the investors do not require a well-developed business project proposal like in venture capital funding or significantly vary in the sums of investment they provide to the beneficiaries, while in seed funding only a small sum of money is invested to the new businesses as against venture capital investment can invest heavily and as a result, the risks associated with funding the businesses are different.

- *Venture capital*: it is a convenient financing mode that is used in the early stage of startups to support the current business operations that have been believed to their future growth potential in exchange for equity. It is a risky decision for venture capitalists to invest the new businesses with the hope that they will succeed in the future. The difference between venture capital and loan investment is that one does not require collateral like real estate and liquid assets. Businesses prefer accessing venture capital when traditional financial institutions reject financing the companies due to the risks. Investment in new companies that do not qualify for the loan criteria involves high risks for the investors and venture capital funds, but the return is high. The sources can be pensioning funds, insurance funds, company assets, private savings, and investors and

public assets. Venture capital can be obtained at any stage of business development. The goal of the venture capitalist is to support the growth of the company with the investment and obtain a return through an initial public offering and trading. Moreover, the investors are most interested in businesses that have promising growth in a short period, subsequently, they necessitate the beneficiaries to have professionally developed business plans.

- *Private equity (PEs)*: This means of investment remains popular in the financial market for more than three decades and it has grown fast in recent years due to technological innovation. It became one of the frequently used financial means for startup business funding in recent years. PEs primarily invest in mature companies using a method known as Leveraged Buyout (LBO). LBOs acquire companies by specialized investment firms with relatively small stakes and relatively large foreign debt funds [19, 20]. It refers to the investment partnership that buys and manages companies to sell them after they increase their value. Private equity firms manage the investment funds for the beneficiary institution and investors. Moreover, they invest in the fast-growing promising startup business with limited sums having a deemed to earn returns in the future. Private equity collaborates with venture capital and hedge funds as an alternative investment. The requirements for the lenders to access such capital are accessible to only successful businesses with long business history.

- *Strategic alliances*: Agreements to cooperate in the manufacturing, development, or sale of products and services or other business objectives involving a minimum of two independent businesses. There are three types of strategic alliances: joint venture, equity strategic alliance, and non-equity strategic alliance.

- *Joint Venture:* For completion of new business projects or other business activities, the interested parties pool the resources in the current alliance. The parties are responsible for profits, losses, and costs associated with the activities. However, the venture is its entity, separate from the participants' other business interests. A joint venture is established when the parent companies establish a new child company.

- *Mergers and acquisitions:* M&A have been a key in leveraged finance. There are three types of acquisition loans:

    - Leveraged buyouts: LBOs are backed by a private equity firm that funds the transaction with a significant amount of debt in the form of leveraged loans, mezzanine finance, high-yield bonds, and/or seller notes. Stronger markets usually allow for higher leverage.

    - Platform acquisitions: These are transactions in which private-equity-backed issuers buy a business having a deem that it will gradually lead to growth.

    - Strategic acquisitions: Strategic acquirers are usually corporations in the same or a related industry segment as the target company, allowing the buyer to leverage its expertise in the segment.

2.5 Third stage of financing life cycle (mid-stage/mezzanine Stage)

In the current stage, businesses reach their break-even levels and overcome the challenges in their path. Despite alternative funding, the new opportunity can be debt financing.

Debt financing: Debt financing refers to borrowing funds from creditors with the condition of repaying the borrowed funds including interest at a specified future time. The creditors benefit interests for the lending fund from the borrowers. Two types of debt financing are practiced including secured and unsecured. The secured debt has collateral but unsecured does not require collateral, which makes the creditor insecure to a certain degree if the lender fails to meet his financial obligation. By time frame, it can be long-term and short-term funding depending on the business needs.

There are various types of debt financing [10]:

- Term loans: Given for medium to long-term periods.
- Banks and other financial institutions
- Non-banking financial corporations (NBFCs)
- Loans from government/financial institutions.
- Loans for working capital
- Bank overdraft facility
- Short-term loans

  Term loans: A loan with term installments, is usually a short-term loan that is settled by installments. There are two principal types of term loans:

  - An amortizing term loan: A loan with a progressive repayment schedule that typically runs 6 years or less.
  - An institutional term loan (TLB, TLC, TLD, etc.) is a term loan for non-bank investors. This institutional category also includes second-lien loans and covenant-lite loans

- *Banks and other financial institutions:* Banks prefer to reduce their risk by requiring collateral from the lenders. Lack of record of reliable information or track on previous loan history, or outstanding debt of the lender prevents banks from financing startups and newly established businesses.
- *A financial institution* (FI) is a company engaged in the business of dealing with financial and monetary transactions such as deposits, loans, investments, and currency exchange. Various types of institutions are included under the umbrella of financial institutions including banks, trust companies, insurance companies, brokerage firms, and investment dealers, which are mainly engaged in the provision of financial services.

- *Non-banking financial corporations (NBFCs) loans:* The concept of microfinance involves small-scale entrepreneurs who are incapable of accessing bank loans or capital. Therefore, borrowers with poor credit ratings approach to NBCFs whenever they get rejection by banks.

- *Loans for working capital:* A working capital loan is a loan that is taken to finance a company's everyday operations including payroll, rent, and debt payments. The borrowers cannot use the loan for purchasing assets.

- *Business Overdrafts:* It is a convenient payment option that enables businesses to settle their expenses having insufficient balance. The disadvantage of this funding is high-interest rates over conventional loans.

- *Short-term loans:* This loan is for supporting a temporary personal and business need and usually in a shorter term within a year.

2.6 Fourth stage of financing life cycle (last stage/public offering stage)

The last stage is where the business has grown to a high level and needs funds for its future projects. Sources of finance are [10]:

- Initial public offering (IPO)

- Follow on public offer (FPO)

- Right issue of share

    - *Initial public offering (IPO):* An initial public offering (IPO) or stock launch is a public offering in which shares of a company are sold to institutional investors [21] and usually also to individual investors [22]. An IPO is typically underwritten by one or more investment banks, who also arrange for the shares to be listed on one or more stock exchanges. Discounted cash flow (DCF) analysis and comparable firms' analysis can be used and a preliminary valuation may rely heavily on how the market is valuing comparable firms. In some cases, publicly-traded firms in the same line of business are easy to find. In other cases, it may be difficult to find publicly-traded "pure plays" to use for valuation purposes [23].

    - *Follow-on public offer (FPO):* Follow-on public offer refers to the issuing of shares to financial specialists by an organization that has been as of now recorded on trade [24]. FPO is a stock issue of supplementary shares made by an organization that has been now freely recorded and has experienced the IPO process. FPOs are known as a popular method for companies to raise additional value capital in the capital markets through a stock issue. Open organizations as a rule exploit FPO issuing, an offer available to be purchased by financial specialists, which is made through an offer document. FPOs and IPO are different one should not be confused between them as IPOs are the initial public offering of equity to the public while FPOs are supplementary issues made after a company has been established on an exchange.

- *Right issue of share:* Offer of securities by a listed company to those who are shareholders of the company as on the record date fixed for the said rights issue. Rights issues give existing shareholders the option of purchasing new shares, normally issued at a discount to the prevailing market price to encourage participation in the capital raised over purchasing shares in the market.

Startup businesses need to identify the appropriate type of financing to prevent themselves from the risks associated with funding options as the necessity is compelling over rationality. The more the entrepreneurs are aware of the advantages and disadvantages of the funding options, the sounder funding decisions will result. Although time is always a scarce resource that makes everyone rush with no limit, going forward and backward learning the pros and cons will pay you double in the future.

3. Research results

3.1 Funding background of the startups in Mongolia

It is not a long time passed since startup businesses were introduced in the country and investment policies and legal frameworks for strengthening this type of business are far from accomplished. Even though, we have an opportunity to make a shortcut using the best practices of the countries who survived the hardships in strengthening the startup ecosystems.

According to the Startup Blink Global startup ecosystem index 2022, Mongolia is ranked 81 globally out of 100 best, increasing seven spots since 2021.

Ulaanbaatar is ranked 491 globally and showed a positive momentum increasing 19 spots since 2021. It also ranked 472 out of 1000 cities [25].

START has significance for venture builder as it contributes to creating startups and accelerating their growth. The startup ecosystem map is prepared annually for the public to promote and support the startup ecosystem (https://startco.mn).

The other stakeholders of the ecosystem are divided into 15 categories including accelerator programs, events, nongovernmental organizations, entrepreneurs, and investors (**Figure 2**).

In the map of the startup ecosystem 2022, 109 startup businesses in 19 clusters are presented by the multi factors including social impact solutions, business model, team structure, work methods, ethics of the founders, technological solutions, and dynamic features (**Figure 3**).

The ecosystem of the startups is comparatively immature, approximately 63% of the businesses are set up in the past 3 years. The technology-based companies are improving recently. Particularly, the pandemic served to the expansion of the digital economy and business environment, although no improvements were observed in the ecosystem of startups operation in other sectors. The reasons behind the holdup serve as a lack of envisioning and attitude that creates the ecosystem. Because of that, the expectations of investors and technology startups differ. The main setbacks for most startups are hiring new employees, fundraising, attracting customers, boosting sales, team development, and penetration of the international market via developing irresistible products and services.

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Figure 2.
Map of startup ecosystem of Mongolia. Source: https://startupnews.mn/2022/03/30/startupmap2022.

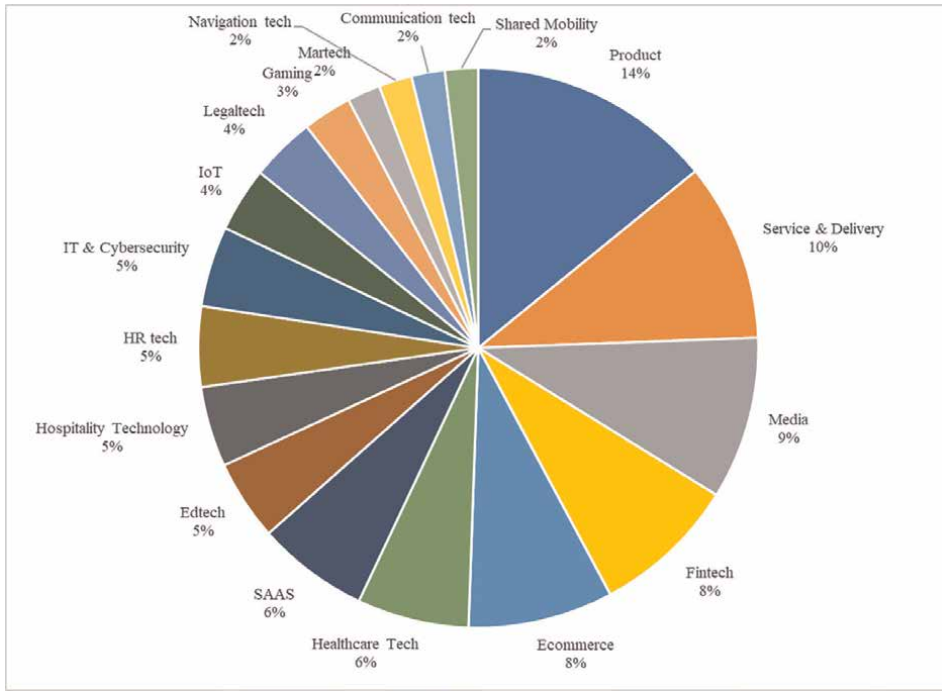

Figure 3.
Sectors startup businesses operate in the businesses included in the map. Source: https://startupnews.mn/2022/03/30/startupmap2022.

3.2 Startup business financing condition in Mongolia

Recently numerous programs have been implemented to build the capacity of startup companies. The survey on the startups indicates that the total revenue of MNT 60 billion and 1318 jobs contributed to the economy [26].

Despite the progress, insufficient funding of the startups remains unsolved and it serves as the major challenge for further success.

Seed funding: In the initial stage, the founders launch and maintain their business operations with heavy internal investments like personal savings, support from family, friends, local angel investors, and other business incomes. A baseline study of the Mongolia startup ecosystem conducted in 2022 shows that 11.3% of the initial funding is made up of the project grant and 6.3% comprises accelerators, incubators, and loans. The local venture funds and international angels are less interested in the initial funding and only 3% of the funding is comprised of this type of financing (**Figure 4**).

Follow-on funding: Enterprise venture funds, international venture companies, and crowdfunding platforms are available for local startups in follow-on funding in Mongolia. Major investment companies like MCS Investment, Shunkhlai, and TECO are getting influential players in the market (**Figure 5**).

The typical challenges that prevail among local startups are the lack of skilled human resources and funding. According to the study, the most challenging issues for startups include investment funds (61%), improved tax regulations (54%), subsidies/grants (40%), intellectual property and regulations to protect innovations (39%), and loans (31%). Moreover, the most expected support for the startups was accessing incubators/startups (20%), innovation hubs (13%), co-working spaces (11%), and awards (8%) [26].

In sustaining the national startup ecosystem, hiring and retention of highly qualified professionals to contribute to the businesses are the utmost priority for the novel businesses. Hence, education reform in science, technology, engineering, and mathematics (STEM) is the highest priority of the education sector to the resource with competent professionals who can support the innovation.

Although an increase of local angel investors supporting startups observed in recent years, at any stage of the development of the startups, personal savings, family, friends, other business income, and project grants and bank loans remain the major funding sources. The government may serve as the major player in attracting foreign

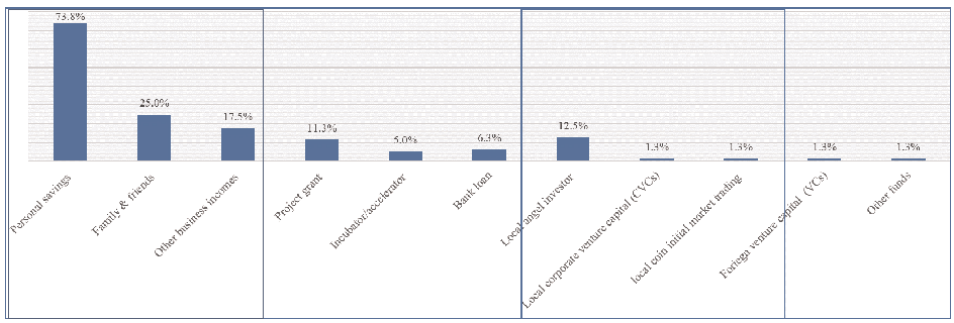

Figure 4.
Initial funding sources of the Mongolian startups. Source: Baseline survey of the Mongolia startup ecosystem, 2022.

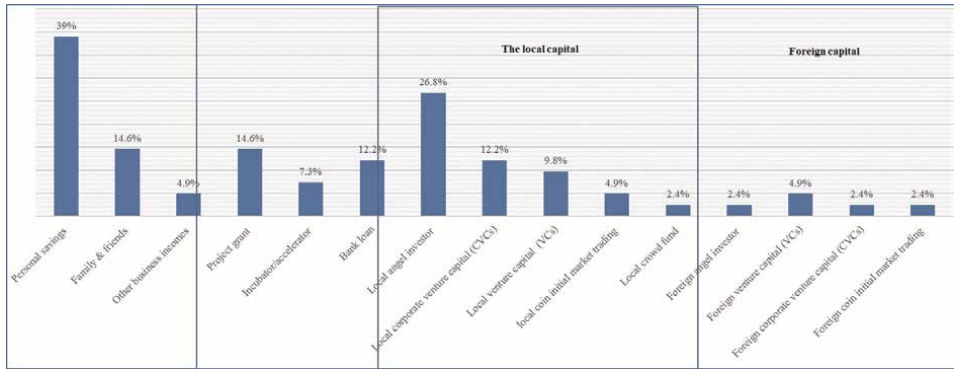

Figure 5.
Follow on funding sources of startups in Mongolia. Source: Baseline survey of the Mongolia start-up ecosystem, 2022.

investors. Moreover, there is an opportunity for developing the startup ecosystem based on the experience and expertise of the private sector.

3.3 The legal environment for startup business

It is essential to construct a favorable legal environment that encourages attracting investment and capital growth for startups. There is a need for a legal framework that ensures the protection of copyrights and the rights of startup businessmen. Furthermore, social infrastructure, collaboration, and political and legal environment-related concerns remain to hinder the startup ecosystem in the country. The baseline study conducted in 2022 concluded the establishment of the economic and legal environment in the startup ecosystem of Mongolia.

4. Conclusion and discussion

It has not been a long time since startup businesses were introduced in our country and numerous questions remain unsolved effusively in terms of investment policy and the legal environment. Nevertheless, there is an opportunity not to recurrence slip-ups of startup businesses in different countries. It creates noteworthy contributions in developing startup businesses in the country, increasing productivity, creating jobs, and boosting the country's economy.

According to the research, we identified the following findings:

- The initial investment sources of startups in Mongolia are personal savings (73.8%), family members and friends (25%), and other business sources (17.5%). Although an increase in the interest in the funding of startups among angels, still personal savings, family and friends' investments, and other sources like financing with the other business's income, project funding, and bank loans still remain dominant.

- Recruitment of new employees, fundraising, attracting customers and increasing sales, developing teams, penetrating into the international market, and developing products and services are the main challenge for startups.

- Business operation-related challenges among startups are poor production equipment (29.4%), human resources (23.5%), insufficient current assets (20.5%), and missing business planning and formulation of future aspirations (14.7%). It reveals that there is a need for professional consulting and support for the startups to build capacity among startups businesses and the involvement of professional association and business initiatives to support startups still remain vital for them. Additionally, the study shows that providing quality education that nurtures the knowledge and skills to develop business mindsets remains essential.

- Constructing the legal environment that supports economic development and enforcement of the Law of Innovation through the development of policy documents as well as legal instruments the enforcement.

Promotion of the startups through financial and nonfinancial support and advocating their activities especially, those who introduced innovative approaches of financing as well as the investors who contributed to the progress of startups will have a substantial impact. The participation of large local companies in a solution of the startup business investment and care of the implementation mechanisms of this type of business could be the potential solutions to address the challenges.

The study has limitations as it has relied on secondary data. We admit that there is a need for research based on primary data that will be beneficial to fully address the challenges that prevail in the businesses and have practical significance for the stakeholders of the startup businesses. Moreover, a comparative study will be significant for businesses to better learn about the startup opportunities and challenges that exist within startups around the world.

Author details

Altanchimeg Zanabazar* and Sarantuya Jigjiddorj
National University of Mongolia, Ulaanbaatar, Mongolia

*Address all correspondence to: altanchimegz@num.edu.mn

References

[1] Grilli L, Latifi G, Mrkajic B. Institutional determinants of venture capital activity: An empirically driven literature review and a research agenda. Journal of Economic Surveys. 2019; **33**(4):1094-1122

[2] Ries E. The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses. 1st ed. New York, USA: Crown Business; 2011

[3] Robehmed N. What is a Startup? 16 December 2013. Retrieved from Forbes: https://www.forbes.com/sites/natalierobehmed/%202013/12/16/what-is-a-startup/

[4] Cassar J. Deterioration of the globigerina limestone of the Maltese Islands. Geological Society London Special Publications. 2002;**205**(1):33-49

[5] Togtokhbuyan L, Xuexi H. Analysis of the returns of small and medium-sized. Journal of Finance and Accounting. 2014;**2**(3):41-47

[6] Raphael A, Lawrence G, Eitan M. Entrepreneurial ability, venture investments, and risk sharing. Management Science. 1990;**36**(10): 1233-1246

[7] Berger AN, Cowan A, Frame SW. The surprising use of credit scoring in small business lending by community banks and the attendant effects on credit availability, risk, and profitability. Journal of Financial Services Research. 2009;**39**(1):1-17

[8] Stuart P, Whittam G, Wyper J. Towards a model of the business angel investment process. Venture Capital. 2007;**9**(2):107-125

[9] Leach CJ, Melicher RW. Entrepreneurial finance. 4th international ed. Mason, OH: South-Western; 2012

[10] Kmuehmel. Wikimedia. 2009. Available from: https://commons.wikimedia.org/wiki/File:Startup_financing_cycle.svg

[11] Brkan BI. Sale Pod funded by Croatian business angels' seed investment, 2010. Available: http://www.netokracija.com/salepod-seed-investicija-crane-3411.

[12] Lorette K. Start-Up Business Problems, 2013. Available from: https://smallbusiness.chron.com/start-up-business-problems-653.html

[13] Gompers P. Corporations and the financing of innovation: The corporate venturing experience. Economic Review (Federal Reserve Bank of Atlanta). 2002; **87**(Q4):1-17

[14] Smus TR. Sources of support and funding for innovative Startups: International solutions. Kwartalnik Naukowy Uczelni Vistula. 2017;**2**(55):127-142

[15] Worrell D. Entrepreneur, 2002. Available from: https://www.entrepreneur.com/money-finance/bootstrapping-your-startup-startups/55776

[16] Freear J, Sohl J, Wetzel W. Angels: Personal investors in the venture capital market. Entrepreneurship and Regional Development. 1995;**7**(1):85-94

[17] Ordanini A, Maglio PP. Market orientation, internal process, and external network: A qualitative comparative analysis of key decisional alternatives in the new service

development. Decision Sciences Journal. 2009;**40**(3):601-625

[18] Ordanini A, Miceli L, Pizzetti M, Parasuraman A. Crowd-funding: Transforming customers into investors through innovative service platforms. Journal of Service Management. 2011; **22**(4):443-470

[19] Kaplan SN, Stromberg P. Leveraged buyouts and private equity. Journal of Economic Perspectives. 2009;**23**(1): 121-146

[20] Robinson DT, Sensoy BA. Private equity in the 21st century: Cash flows, performance, and contract terms from 1984–2010. SSRN Electronic Journal. 2011:1-46. DOI: 10.2139/ssrn.1909626

[21] Jamil A. Financial Times, 2010. Available from: https://www.ft.com/content/ff7d528c-a6bc-11df-8d1e-00144feabdc0?ftcamp=rss

[22] Asia Times. 2006. Available from: https://web.archive.org/web/20081205051941/http://www.atimes.com/atimes/China_Business/HI29Cb01.html

[23] Ritter JR. Initial public offerings. Contemporary Finance Digest. 1998; **2**(1):5-30

[24] Kaur M, Singh S, Prakash N. Public offer's performance—An analysis of Nse listed companies, since 2001. Journal of Business and Management (IOSR-JBM). 2017;**19**(7):49-56

[25] StartupBlink. Global startup ecosystem index, StartupBlink. 2022

[26] MMCG. Baseline Survey of the Mongolia Start-Up Ecosystem. Ulaanbaatar: MMCG; 2022

Chapter 7

Ultra-Micro-Business Algorithm: Village Economic Metabolism in the Coastal Area

Teuku Shadiq and Hani Hasanah

Abstract

Indonesia is an archipelago country having two-third of the ocean, which encourages an GDP increase through the development of marine products and fisheries, but in reality, coastal areas have not been able to utilize their resources, which leads to five percent of GDP compared to the potential of 1.3 times GDP or 130 percent. However, today in some coastal areas in Indonesia ecological threats damages the environment, ecosystems, flora, and fauna, which leads to climate change and loss of productive land due to anthropogenic behavior. Marine management is to ensure the sustainability of fish resources and the environment as the carrying capacity of marine and fisheries communities, especially in coastal areas, ultimately produces economic resources sourced from the resources and biodiversity. This chapter focuses on the coastal area of Tangerang Regency of Indonesia that is actually the gateway to Indonesia because it is adjacent to Jakarta, the capital of Indonesia. It is important to initiate a coastal area realignment program with the concept of redesigning society by involving all stakeholders through a Social Network Analysis approach (SNA).

Keywords: ultra-micro, SMEs, algorithm, coastal, resources

1. Introduction

1.1 Global south and north

Globalization that has been since the 1980s comes from the word global that means universal in one word that can be articulated as borderless, no barriers, and distances as if the ball ripped through the goal net forms networks and social interactions. Globalization a social phenomenon that was born in the twenty-first century through an egalitarian spirit toward a new modernity, apparently also creating a divergence between the northern regions that in fact are developed countries and the southern regions that symbolize Third World countries. In fact, compared to the global north the countries in the south region has a tool of investment.

The book entitled "A Brief Guide to Global Inequality and its Solutions" written by Jason Hickel [1], one of the Professor from the Institute for Environmental Science and Technology of the University of Barcelona and he is also an economist whose

writing focuses on economic issues of anthropology, inequality, imperialism, and political economy, saying: The strong narrative of framing aid from rich countries and international donors to poor countries through the act of pouring funds up to billions of dollars reflects so many aid flows, as if to give the image that rich countries have contributed so much to poor countries as well as developing countries.

The trend of inequality can be felt by increasing the number of poverty rates from the 80s to the 90s based on the basic figures released by the World Bank, namely US $ 1.90/day, the significant difference in per capita income between the global north and south gives a hint as if colonialism occurred, and the south is made a playground for investment but on the contrary does not create prosperity.

Many world economists disagree that a country's economic growth is a mirror of a country's economic fundamentals not as great as the Government says with a series of publication figures such as everything controlled by numeric? Evidence shows that economic growth is often unable to solve the problems of poverty and unemployment, disparities in the production of service goods, and inequality in one region to another, and even inequality occurs in one country that is geographically a source of raw material supplies.

Another reference relating to the present situation is The Winners Take All: The Elite Charade of Changing the World by the author Anand Giridharadas [2] in his review writing about the investigation of how the efforts of global elites to "change the world" maintain the status quo and obscure their role in causing problems that they then want to solve, an important read to understand some of the horrific abuses of power that dominate the news today.

1.2 China's growth

A country that has experienced a pace of economic growth in the last five decades obtained through an increase in GDP can be seen in the chart below (**Figure 1**).

The average GDP earned by China in the last 50 years was 8% was in 2007 reaching 14.2% until the COVID-19 pandemic hit with the worst achievement in 2020 worth 2.2% in its economic history and then back increase again to 8.1% in 2021.

Figure 1.
GDP growth of China.

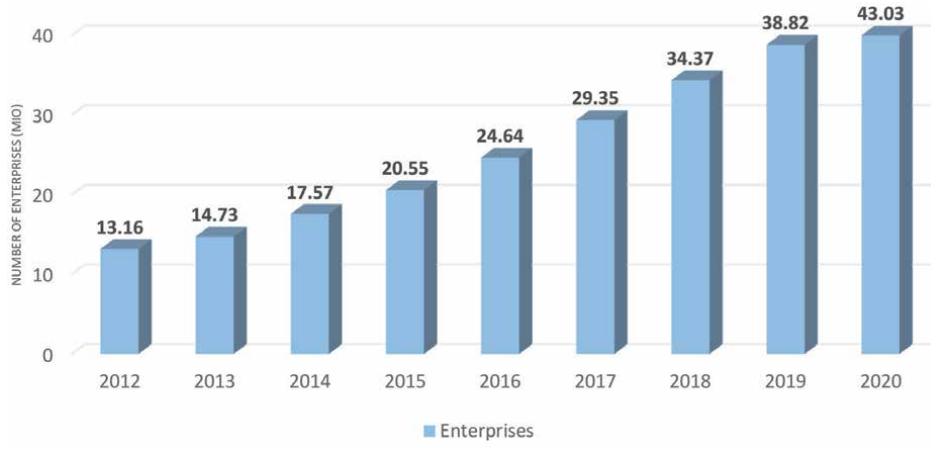

Figure 2.
Number of small medium Enterprises in China Last Decade. Source: Statista, 2022.

The accelerated pace of China's economic growth is inseparable from the contribution of small medium enterprise (SMEs) with the growth of the increase in the number of SMEs. Based on data in Q1 of 2022 every year, there are around five million more SMEs in China, representing at least ten percent year-on-year (YoY) growth rate. Since the economic reform in China 40 years ago or 30 years after China's independence, SMEs have become one of the driving forces of the economy. In 2019, the number of SMEs is estimated to be more than 38 million. In Beijing alone, there are more than 3100 industrial SMEs that generated more than $2.8 billion in annual revenue in 2017 from a GDP of $6.9 billion in the same year (**Figure 2**).

SMEs are important for economic development in China. Today, SMEs represent more than 90 percent of companies. They also contribute more than 60 percent to GDP and contribute 80 percent of national jobs. Thus, MSMEs play an important role in economy to promote economic growth, create employement, push for innovation, and generate a healthy environment for inclusive and sustainable economic development [3].

However, the SME cycle in China is often hindered by rising costs, financing difficulties, and limited innovation capacity. To support the growth of SMEs, the Chinese government decided to reduce the minimum mandatory demand requirement ratio as well as readjust tax policy in early 2019. Another strategy to bring together MSEs and investors is to open a Stock Exchange, for example Shenzhen which is centered in a city centered in Shenzhen one of the three stock exchanges in China besides the Shanghai Stock Exchange and the Hong Kong Stock Exchange. The Shenzhen Stock Exchange is the ninth largest stock exchange in Asia by market capitalization. The strategy is dedicated to attracting more SME investors as well as in China's fast-growing e-commerce economy, and some SMEs have developed their B2B e-commerce platforms to expand their sources of income. The revenue from this e-commerce platform is expected to reach 6.4 billion U.S. dollars in 2020[1].

China's economic landscape is not symmetrical to other countries in South Asia including developing countries such as Indonesia. Another strategy from China in the global fight is the Belt and Road Initiative (BRI) that is a grand design in terms of

[1] https://www.statista.com/statistics/783899/china-number-of-small-to-medium-size-enterprises/ Ref. [4].

President Xi Jin Ping's geo-political strategy to penetrate a number of countries with yuan deposits in the form of loans in infrastructure projects such as roads, bridges, railways, and ports, and if we observe closely the aggressiveness of China's investment and trade today to various countries, especially countries in the South Asian region, which are carried out by state-owned enterprises of the Chinese government, this is China's geo-economic strategy. It is not enough just to invest, but another target is the distribution channel for goods and services for their SMEs which are strongly supported by the government, on the other hand this can potentially become an economic threat to countries that receive investment and distribution of goods and services.

1.3 Global inequality

Economic by the theory is a push margin, for that it is important to be careful and must realize that the ecological dimensions of the earth are layered such as Donut, inhabited by billions of populations with the support of social foundations (energy, water, food, housing, and so on) and ecological ceilings (land, water resources, air) whose function is like oxygen for people's lives.

While in other parts, the structure of world society today is like the shape of a supposed pyramid, in which few of the world's population are able to control large resources; on the contrary, poor people with a sizable population are at the bottom level of the pyramid. The question then there is the problem of inequality and there must be something wrong in the system.

The World Bank groups the population into three groups according to the size of the income: 40% of low-income residents, 40% of middle-income residents, and 20% of high-income residents. The gap is based on income, which describes the distribution of income in a community in an area or region at a certain time. In Indonesia, one fundamental cause is the income inequality that occurs in Indonesia, namely due to the lack of attention to small and medium enterprises (MSEs), and high economic growth will be meaningless if income equality is not distributed properly. In other words, well-being can only be felt by a handful of people.

Farhad Rassekh, a Professor of Economics at the Barney School of Business University of Hartford, wrote four theories about market economics (2016). In an occasion delivering his presentation at the University of Texas, he said "Free-trade does not necessarily mean free everything, it does not necessarily mean free migration, it does not mean free follow up capital to cross countries but focus on the free flow a goods and services. Trade promotes economic growth through labor productivity and investment against significantly income inequality in Indonesia".

Indonesian government policy with the availability of abundant natural resources focusing on interventions to rural areas where natural resources are located. The government focuses on efforts to increase the IDM scale (Village Development Index), which is built through three measurement variables, namely the Social Resilience Index, Economic Resilience Index, and Environmental Resilience Index.

The framework of government programs is primarily ensuring the accuracy of intervention on target by taking into account the characteristics of the village region, namely typology and social capital, although the government is aware of the implementation of programs faced with the challenges encountered such as the ability of human resources, technology, culture and various other dimensions.

Therefore it is very important to restore the metabolism of rural communities in facing of these complex matters to ensure that the national program policies

implemented in the Local Government's Medium-Term Development Plan will encourage the improvement and growth of the village economy.

The huge of state's assets dominated by the area of maritime, especially in coastal areas, is an opportunity as well as challenges in line with the aggressiveness of regional development carried out through government programs and the private sector, is one of the potential threats is loss of the livelihoods of the people from marine and fisheries product which incidentally is buffer the basic needs of urban communities as well as other problems such as the potential for climate and environmental change.

Several world rating institutions such as Standard & Poor and Moody often release the results of their research and convey information about the status of the condition of a developing country, including Indonesia in terms of finances that are most likely to be proven but inversely proportional to the actual facts.

Indonesia must re-recognize the nation's identity as a large nation with two-thirds of the sea area, which is the largest archipelagic country in the world, the sea that stretches from west to east Indonesia has 17,499 islands with a total area of about 7.81 million km2, of which 3.25 million km2 is the ocean and 2.55 million km2 is the Exclusive Economic Zone, while only about 2.01 million km2 is land area, so vast is the sea area that adA reflects having enormous marine and fisheries potential[2].

This book tells about Banten which is one of thirty-four provinces in Indonesia and is located near the Sunda Strait, which is a national and international trade route for the Indonesian Archipelago Sea Channel (ALKI), and the Banten sea area is one of the potential sea routes. The Sunda Strait is one of the strategic sea traffic routes because it can be passed by large ships connecting Australia and New Zealand with Southeast Asia, for example, Thailand, Malaysia, and Singapore, thus making the position of the Banten Province very strategic, as well as one of its areas, namely Tangerang Regency.

Tangerang Regency as part of Tangerang Raya is the only area that has a water area in the form of an ocean area of 377.40 km 2 with a coastal area of 298.52 km2 based on the administration of the sub-district in Tangerang Regency consisting of 7 glasses and 23 peisisir villages consisting of Kronjo District, Mauk District, Kemiri District, Sukadari District, Pakuhaji District, Teluk Naga Subdistrict, and Kosambi Subdistrict [6].

Indonesia, which is 2/3 of the ocean, has great potential for an increase in GDP through the development of marine products and fisheries, but in reality coastal areas have not been able to utilize the advantages of their resources in the fact that it is less than 5 percent of GDP compared to 1.3 times GDP or 130 percent This chapter focuses on the coastal area of Tangerang Regency of Indonesia, which is actually the gateway to Indonesia because it is adjacent to Jakarta, the capital of Indonesia.

2. Rural coastal area: geo-economy and global race

An ecoton are areas of steps transition between ecological communities, ecosystems, or ecological regions along an environmental gradient [7].

The history of Indonesia's sea area located on the islands that existed during the era of President Soekarno's rule did not belong to Indonesia, but at that time Prime Minister Juanda said that this was not true and asked a young man named Mochtar

[2] Website Direktorat Jenderal Ruang Laut, Kementerian Kelautan Perikanan-Indonesia https://kkp.go.id/djprl/artikel/21045-konservasi-perairan-sebagai upaya-menjaga-potensi-kelautan-dan-perikanan-indonesia. Ref. [5]

Kusumaatmadja who was diligent in learning about international law of the sea to continue to carry out international diplomacy and in the end then the term. Wawasan Nusantara is the idea of Indonesia's territorial boundaries through the Djuanda Declaration in 1957, which is legendary and a world topic even though at first many countries opposed it and did not approve of it but in the end with a long struggle at the UN conference, Professor Mochtar Kusumaatmadja who at that time was the Minister of Foreign Affairs met American State Secretary George Shultz could claim that the sea inside the islands belonged to Indonesia and became an archipelagic country. All of that is mentioned in the United Nation on The Law of the Sea convention.

The sea area within Indonesia's territory is traffic for world economic trade, considering that Indonesia has five sea within the country's territory and this is hardly found in other countries; in general, other countries only have straits. The question then is how to leverage the power of geography into economic strength? We know that in the world there are six major straits or the term major straits because they are traversed by large ships such as tankers, mother vessels, such as Suez and the Panama straits. Four of the six straits are located in the Indonesian region, such as the Strait of Malacca, the Sunda Strait, the Makassar Strait, and the Lombok Strait. It is conceivable that if Japanese commercial ships descend from the north into the Makassar Strait into the Middle East and into Europe, while Australia wants to send its goods to China, it will pass through the Lombok Strait and Makassar Strait, while in the Malacca Strait Chinese ships entering from the South China Sea descend toward natuna and it can be imagined if thousands of ships a year pass through Indonesian territory.

How important the straits in Indonesia are for other countries such as China and Korea as a producing country that exports its goods to Africa, Europe and America always pass through the Strait of Malacca, until this triggers China to control it because it greatly affects the country's economy.

The description above reveals how powerful Indonesia's underwater treasures are, how bile is utilized and can be utilized for the benefit of the entire population, but not only under the sea, other economic sources from coastal areas have unusually high economic value, there will be no imports of salt, tuna, and so on, and all are met and even able to meet the needs of the population and the world market; not the other way around, the task increases due to damage to marine ecosystems and anthropogenic or human actions or activities either intentionally or unintentionally and carried out continuously, which have a bad influence on society because it triggers or accelerates the occurrence of disasters ([8], p. 248).

The sea is the source of life of the country and its main community in coastal areas that limit land and oceans is an ecotone area or meeting area of two ecosystems and is a buffer for the stability of terrestrial and marine ecosystems for that it needs to be preserved so that it continues to be productive and its biological resources can be utilized for the prosperity and welfare of marine biodiversity and there are various potentials such as energy, food, amenities, and many more that can be converted into goods of high economic value, not counting the marine service sector.

3. Economic landscape and its challenge in the coastal area

Producing various services for humans, various sources of life come from marine such as food sources and connectivity media as well as services in terms of protection of economic assets such as coastal protection, erosion control, and pollution control devices.

Marine management is a pattern to ensure the sustainability of fish resources and the environment as the carrying capacity of marine and fisheries communities, especially in coastal areas, which ultimately produces economic resources sourced from the use of resources and biodiversity. Indonesia is the country with the second longest coastline ownership in the world after Canada; however, the management of coastal areas with this length has not been optimally utilized evenly, and only 55 percent of the potential existing resources are utilized. Development in all sectors in coastal areas has contributed a lot to marginalizing local communities who generally have activities as traditional fishermen and leaving aside the sustainability of environmental ecosystems and natural habitats. Having the opportunity to live in a country that has the longest coastline in the world is a matter of pride for the people of Indonesia. This is because the length of the coastline indicates the length of the chain of socioeconomic life of the community.

Supriharyono in Syahrin [9] defines a coastal area as a meeting area between land and sea toward land coastal areas covering parts of land, both dry and submerged in water, which are still influenced by marine properties such as tides, sea breezes, and saltwater seepage. Meanwhile, toward the sea, coastal areas include parts of the sea that are still influenced by natural processes that occur on land such as sedimentation and freshwater flows, as well as those caused by human activities on land such as deforestation and pollution.

Coastal communities are compound communities that generally consist of fishermen, fish farmers, fish processors, traders, and dockers, as well as other professions. Coastal communities are often matched with an economy that is not yet prosperous and environmental health that is not yet decent, as well as low education. The dynamics of coastal communities with the complexity of the problems faced require a comprehensive strategy to be able to escape such social problems, not to mention other problems such as poverty levels due to economic uncertainty, damage to coastal resources from destructive management, and environmental health from the impact of waste, as well as the use of marine areas for fishermen open access and limited open access.

3.1 Challenge

The problems faced in the management of coastal and marine areas, especially in Indonesia, are dual utilization, unbalanced utilization, the influence of human activities, and pollution of coastal areas. Common problems faced by coastal communities include poverty levels (economic uncertainty), damage to coastal resources, and environmental health, as well as the use of marine areas for fishermen (open access and limited open access).

However, the problems of stimulating development in efforts to grow the village economy in coastal areas generally include several things such as: rising costs or prices due to inflation, financing difficulties, and limited innovation capacity strongly influenced by internal and external factors.

Through its "economic system as it is today" pushing the gap bigger and bigger between rich and poor, the population of rich people as little as it looks like a system does not work well, which then the sharp difference gives birth to the concept of poverty of a family so that in the end the poverty line is born due to source power, production, distribution in certain groups, and resources for the benefit of the masses should not be dominated by certain groups or parties, which describes structural

poverty. Josep Stiglist, Nobel Prize, Professor of Economics at Columbia University a book "The Price in Equality" states that the model built gives birth to inequality and poverty. Economic growth, which is symbolized by the increase in GDP, should have an impact on increasing the population of the business sector that produces goods and services absorbing labor; in fact, the opposite is true, and growth (growth) is actually growing the number of unemployed.

Anthropocene is a time that began when human activities began to have a global influence on the Earth's ecosystems. The term seems to have been used by Soviet scientists since the early 1960s to refer to the Quaternary of the current geological period. Anthropogenic activity leaves (sabbatical) a long enough trace for ecosystem life in the coastal areas.

Anthropogenic patterns create terrified (fear) economic metabolic loss due to loss of resources and biodiversity. Another challenge in the development of coastal areas is the sensitive resources such as Gumuk (sand dunes), wetlands, as well as coastal hazards, which are influenced by natural factors, such as earthquakes, landslides, tornado tsunamis, storms, large waves, tidal, and so on.

3.2 Coastal landscape

Various conditions experienced in coastal areas inhabited by communities with marginal characteristics experience various problems such as structural and cultural poverty, missed problems in development priority plans, and bureaucratic influences in the form of various authorities by each related technical institution often having an impact on programs that are not integrated and overlap. Another obstacle is that the development of commercial areas that convert rural areas into urban areas poses a threat to the socioeconomic structure of coastal communities.

Development aims to convert coastal areas into urban areas by changing the function and landform, changing the coastline with walls, increasing the number of buildings resulting in an increase in the number of populations both occupying the location and migrants, replacing non-functional vegetation, or removing part or all of the coastal endemic vegetation if not taking into account biophysical and ecological will degrade coastal areas, and for indigenous peoples the coast will be displaced and lose its livelihood and ultimately create new poverty and the threat of hunger.

According to J Lee, [10] a spatial pattern is something that indicates the placement or arrangement of objects on the earth's surface. Any change in spatial patterns will illustrate the spatial processes indicated by environmental or cultural factors.

The intensity of spatial planning development and regional development will pose a serious threat to three aspects, namely: economic, social and environmental in the form of ecological problems such as abrasion, sedimentation processes, waste which causes marine pollution and biodata will be disturbed so that it can result in endangered species existence.

Socially, regional development is a long-term problem due to discrepancy between rural communities and urban communities that are formed, Development in all sectors in coastal areas has contributed a lot to marginalizing local communities whose activities are generally traditional fishermen and leaving aside the sustainability of environmental ecosystems and natural habitats, because the length of the coastline signifies the length of the chain of socioeconomic life of the people.

3.3 Spatial problems and anticipatory strategies

Anticipating various threats of change, it is important to have a coordination of planning by various parties to obtain broad insights and perspectives on the future,

so that the distribution of management to one party and the development process continue to pay attention to various things so that coastal landscapes realize sustainable and developing development patterns. This case is specifically for aggressive development by parties, especially private sector (developers) who obtain privilege from the Government to carry out the development of one area or preservation term. Deregulation is exploited by business groups raised by state protection, and they are getting bigger and able to compete globally, which then can dominate the liberalization period.

4. Rural business resilience

Following the coronavirus pandemic hitting globally, everyone hoped that 2022 will be lived more calmly. However, the Russian invasion of Ukraine in February certainly caused a wave of shock and distress around the world[3].

For the medium-term development plan of the Tangerang Regency Government as a reference for the implementation of development, there is an existing program called "Gerbang Mapan"or the coastal community development movement to carry out the arrangement of coastal areas with infrastructure development such as sanitation but also an economic movement with a "Blue Economic" strategy, the goal is to have an impact on the community, in line with the Central Government's program that regions must optimize. Its potential is followed by mangrove conservation which is expected to improve water quality in addition to being a tourist destination area. The coastal community development model is being carried out by the Tangerang Regency government for projection 5 of 2019–2023 through an Integrated Coastal Management (ICM) approach within the framework of PEMSEA (Partnerships in Environmental Management for the Seas of East Asia) as a form of partnership in environmental management for East Asian seas. The ICM framework serves as a guideline for central and local governments in initiatives for sustainable development programs. Key areas covered in the governance component of the framework include Policy Strategies and Action Plans, Institutional Arrangements, Legislation, Information and Public Awareness, and Financing Mechanisms and Capacity Development.

Indonesia as a country through the representation of the Tangerang Regency, in the International Partnership forum that cares about environmental and marine management, carries out policies in the economic sector through the concept of "blue economy resilience." The concept of the marine economy (blue economy) is something that will encourage economic growth through the maintenance of marine ecosystems as a fundamental efforts as a source of survival for coastal communities, in a philosophical perspective, human beings created by God are subsidized in the form of sovereignty to prosper the environment. By the science and technology, humans are equipped with the knowledge to always check panels or every other part so that the balance is not polarized.

The following is statistical data that describes the marine and fisheries potential of Tangerang Regency based on its type in the period 2019–2021 (**Figures 3** and **4**).

[3] Jenn Stewart [11], Business Advisory Partner, Head of Rural and Dundee Office Head, https://johnstoncarmichael.com/insights/how-to-build-a-resilient-rural-business

Local Economic Development is the process by which local governments and community organizations are involved to encourage, stimulate, and maintain business activities to create jobs [12].

SMEs are the most important pillar in the Indonesian economy, which are strengthened by data from the Ministry of Cooperatives and SMEs, and the number of MSMEs currently reaches 64.2 million with a contribution to GDP of 61.07% or worth 8573.89 trillion rupiah, contributing to the Indonesian economy for the ability to absorb 97% of the total existing workforce and can collect up to 60.4% of the total investment, but this is inseparable from the challenges that exist. The issue of access to capital, sales, logistics, and human resources is an antecedent from time to time such as not being able to get out of dogma and must be defeated.

4.1 Redesign

Variants of problems must be handled through logical steps to solve a problem in terminology as an Algorithm, can no longer be solved with classical patterns, currently the world is faced with very fast changes accompanied by speed, humans must be able to adapt by making transformations, including patterns business carried out

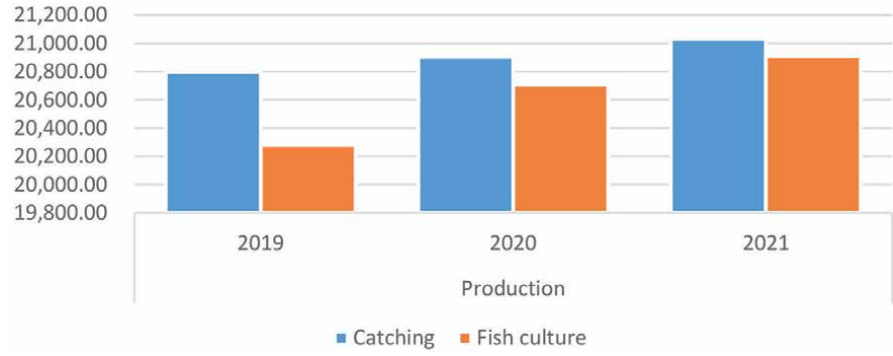

Figure 3.
Production of fish by kind of fishery activity in Tangerang District.

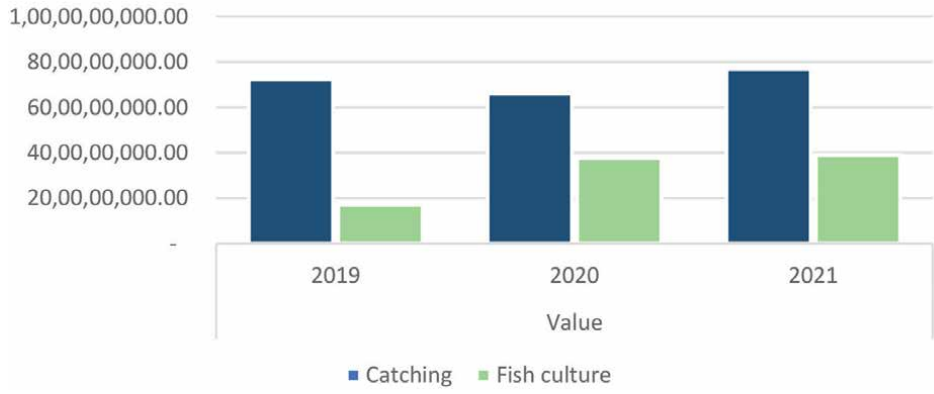

Figure 4.
Value of fish by kind of fishery activity in Tangerang District.

by the bottom line of society to be able to take advantage of and enter into a digital ecosystem that aims to encourage the use of digitalization, considering that the world is currently borderless and is in a digital transformation phase.

Digital transformation requires the speed of adaptation of business actors in coastal areas in facing increasingly bigger challenges with programs that are structured to encourage human resource capacity building. , no function is disturbed, blood circulation pumped by the heart radiates to all organs. Economic activity through business processes (production – distribution – consumption) is born through a complete agile process within an institutional framework that promotes a series of collegial-based work practices, which are loaded with the value of awareness to be agile which really needs a change in mindset and behavior that need to be applied in carrying out an activity or work.

The concept of business development in the rural sector in coastal areas with logical steps is actually to give birth to a form of ultra-micro-industry-based business with optimization of the use or utilization of local resources supported by environmentally friendly production technology by prioritizing local knowledge supported by awareness as a fundamental thing, and that what can change life is the best effort, as Islam says "Indeed, God does not change the state of things so that they change the circumstances that exist in themselves."

The strategy that must be built in the rural sector is to develop the Ultra Micro Business Algorithm business, where the business is built with a sequence of operations that are arranged logically and systematically to solve one problem to produce a certain output and have analytical skills so that the business system includes the availability of modern traditional markets (not eliminating the traditional side) but puts forward the modern side.

The government, especially local governments, must have the courage to carry out a review of the existing planning of coastal areas through spatial planning and environmental protection efforts, including local economic development strategies from various sub-sectors that support community income and contribute to the income obtained by the region, therefore to anticipate the occurrence of problems that not only affect the form and function but must maintain interconnectiveness between land and ocean areas.

Talking about the methodological approach to building a grand design is to organize coastal areas that must pay attention to biophysical or ecological-based, industrial settlement development, tourism and must prepare appropriate community development programs with new strategies due to environmental changes. , because coastal areas in tropical areas such as in Indonesia are ecological and economic assets and store a lot of very high history and culture, but are prone to disturbances both received through natural and man-made changes.

5. Power of community

Knowledge and wisdom grows unbalanced and very selective, not evenly distributed between communities and between nations, so it is important to respond to the crisis by redesigning society for the future.

In his book [13] "Social Sustainability, Past and Future: Undoing Unintended Consequences for the Earth's Survival," calls the six points of "odd" perceptions that shape sustainability. Its complexity is also the cause of single sciences failing to understand the phenomenon, among others, due to "the curse of dimensionality."

The realization that science is only a perception of facts and not fact itself requires a reinterpretation of what is called right or wrong. Transdisciplinarity can be the path to that reinterpretation. But transdisciplinary developments have also faltered, for example, by the question of "intellectual fusion." The ability to think plurally and the result of a comfortable institutional grip on the view of one's own knowledge. Symbiotic is the process of giving and accepting each other to the existence of ideas, beliefs, or other physical cultures that occur between two or more societies to encourage the occurrence of convergence as one of the conditions of the concentrated meeting point.

Communities are not only being fed with various forms of loans by financial institutions, because the main thing is the Government's inclusion program in the form of infrastructure provision including the provision of equipment with various training supports, loans are the last option, it can also be through the development of information systems, developing management and supervision plans, strengthening institutions with disaster management programs, coastal area plans and management, and education, including adaptation to climate change.

The main problems faced by coastal communities are poverty levels, damage to coastal resources, low independence of village social organizations, as well as lack of infrastructure and environmental health in settlements, The COVID-19 pandemic has increased the unemployment rate, which ultimately increases pressure on natural resources (extractive activities) and anthropogenic pressures and thus exacerbates the impacts of climate change.

Government policy greatly affects the balance of implementation of regional development programs that must pay attention to social, economic, and environmental aspects in the aim of minimizing negative impacts so that the landscape planning approach, how development strategies and outputs and outcomes with alternative scenarios are fundamental in the development and utilization of coastal areas that contribute to rural communities, especially fishing communities, availability of fishing areas, recreational and tourist areas including infrastructure including fishing ports, fish auction sites which is a place for fisherman sell their catch from the sea.

5.1 Integrated coastal management

There are principles in the management of coastal and marine areas. As stipulated in Agenda 21 Chapter 17 Program (a), the Government of Indonesia in 1995 has prepared Agenda 21-Indonesia, and in Chapter 18 on Integrated Management of Coastal and Marine Areas. It is stated that the development orientation and management of coastal and marine areas is a development priority, especially those that include the aspects of integration and institutional authority, so it is hoped that the resources in this region can become superior products in the development of the Indonesian nation in the next century, including conservation areas with 3 (three) categories, namely Parks, Sanctuaries, and Maritime Conservation Areas. The designation of marine conservation areas with the category of parks is carried out for the purpose of protecting, preserving, and utilizing biodiversity or fish resources[4].

[4] Ministry Decree of Marine and Fisheries of Indonesia Number 31 Year 2020 regarding conservation area management

Managed conservation areas will be able to have an impact on the economy of coastal areas through fisheries management, tourism, protection of nutfah plasma parts of plants, animals, and microorganisms that have the function and ability to pass on properties, in addition to being useful for assembling superior varieties of a species so that they can be susceptible to disease or have high productivity and will be able to pass on the quality of traits from generation to generation.

The other sides is an important things to do is should focus on coastal areas with the availability of waste management including landfills, pollution strategies that will occur in coastal areas, avoiding the construction of buildings that are not too close to the coastal.

5.2 Social networks analysis

Strategy in facing the challenges of economic development for coastal communities is important for academia to exist as a problem solver in solving government-owned problems and to approach with social network techniques, coastal area planning involves multi-stakeholders through a community-based approach strategy, the important role of multi-stakeholders in the preparation of coastal area management plans with various issues and challenges and affected by the dark period for the past two years of the pandemic of Covid 19.

The issue of coastal management through a triangle approach (three lines of defense) by social networks analysis is related to the role of a special envoy in managing a thriving and sustainable ecosystem.

Kazienko et al., [14] said that a social network is a description of connectivity between individuals (actors) and groups, which is illustrated by a point connected to links (ties) (**Figure 5**).

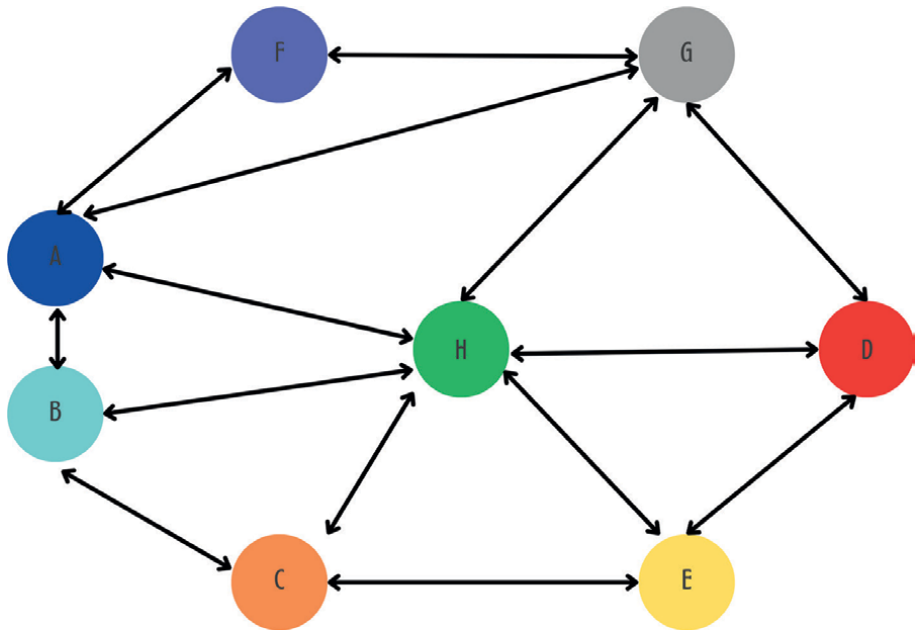

Figure 5.
Social network scheme.

Based on the SNA model, which is often used in measuring a relationship and describing some information, it is defined as a description of the interactions and relationships that always occurs between one another in an organization or work environment and company, the form of this interaction can vary, according to the concept and results to be achieved.

Academia exists in society as a problem solver, namely providing consulting services to the object of the problems encountered, academics act as a driver and become a facilitator who connects various actors in searching for issues and phenomena and returns by providing solutions in terms of answering problems, especially in coastal areas. It is a paradox if there is a diction that says that there is poverty in areas of material surplus of natural resources or biodiversity, but the fact that cannot be avoided is structural and cultural poverty. Nurmalasari (2013) in [15] defines community-based management can be carried out in two ways, namely structural and subjective approaches, and institutional approaches through the human aspects.

6. Rural economic metabolism

Thomas Norrby[5] of the Swedish Agricultural University and an expert in rural entrepreneurship stated that the macro-perspective states that the economy is an ecosystem in the sense that some businesses die, but in other business sectors it actually makes a profit, meaning that we must always be creative and keep moving to find entrepreneurial solutions to address problems, many players in the tourism sector are trying to fund efforts to diversify their businesses to generate income. At the same time, the pandemic resulted in many people becoming victims of layoffs, so they returned to their villages as their true homeland and tried to survive to continue to struggle for life, while some rural entrepreneurs tried to find strategies to survive. survive such cooperative efforts between tourism and agriculture sectors.

According to Arsyad [17], [18]. Professor of the Faculty of Economics and Business of Gajah Mada University in his book Local-based rural development strategies, rural economic development is a process by which village governments and communities manage existing resources and form a pattern of partnership between village governments and the private sector to create new jobs and stimulate the development of economic activities.

7. Ultra-micro business strategy

Households in developing economies are embedded in dynamic and complex contexts that are affected by pressures such as climate change, population growth, urbanization, and resource constraints [19]. In one challenging condition for rural businesses to grow in coastal areas, it becomes critical to find when it is time to stop, take a step back, and see the business properly, and it is important that operational reviews are present.

Mapping the complexity of the problems of coastal communities so that the root causes of the problems can be identified, what problems and what needs to be

[5] Thomas Norrby of Swedish Agricultural University, https://cordis.europa.eu/en Ref. [16].

resolved immediately, and how to overcome these problems, considering that coastal ecosystems are important areas that provide goods and other ecosystem services for local communities, as a source of livelihood.

Fisheries potentials that can be converted into sustainable and developing businesses are fish, crab and shrimp farming, and tourism and tourism areas, and the potential for marine biotechnology is large opportunities to develop industrial material sources of food raw materials, natural feed ingredients, and other sources of raw materials that have not been explored, such as the large amount of biodiversity; for example, there are 16 types of mangrove species (Rhizophora apiculata), which can be used as conservation land to absorb all the dirt that comes from human waste and ships sailing in the sea. The benefit of mangrove forests for life is that they will absorb all types of harmful metals and make water quality cleaner.

Another upstream problem that must be completed by the local government is the fish auction place. Fish Auction Place or namely Tempat Pelelangan Ikan (TPI) is a market where transactions for the sale of fish or seafood occur, whether by auction or not, which is usually located within the fish auction place Fish Auction sites or namely Tempat Pelelangan Ikan (TPI).

Integrated business opportunities (restaurants) support technology to maintain the quality of marine products to be processed into finished materials, not to mention the problem of clean water in some areas, and it is important to make improvements considering this is related to the quality of the products. Traditional food explores regional and international markets.

8. Conclusions

Adopt and technology development is a key ingredient, collaboration between local governments and relevant ministries in intervening in appropriate and environmentally friendly technology knowledge. The pandemic COVID-19 is a tangible manifestation that the village is a friendly shelter for residents.

The establishment of an ultra-micro-business at the village level will increase regional domestic products, meet regional consumption, encourage exports, and reduce dependence on imports, and questions are then difficult to accept with common sense that with a large amount of biodiversity; for example, there are 16 types of mangrove species (R. apiculata) which is a strategy to ensure water quality is also a tourist attraction, and marine and fisheries sector with a diversity of resources as raw materials are processed into finished goods to ensure the lives of coastal communities (**Figure 6**).

The establishment of ultra-micro-businesses at the coastal village level in addition to increasing livelihoods will also increase food security, and the products and services produced will create demand and capital turnover in the regional market, and encourage the export of derivative products made from local raw materials with the concept of local creatives that will increase Gross Regional Domestic Product (PDRB) and ultimately reduce dependence on imports for everyday goods (consumables) and give birth to good staples in emerging markets.

Indonesia is a maritime country with an area around 270 million of which 45 percent live in rural and coastal areas, also has sea within its territory, namely Banda, Java, Arafuru and we have four main straits of the seven major straits namely the Lombok, Makassar, Sunda, Malacca, Lombok, Karimata Straits which are the social capital of coastal communities.

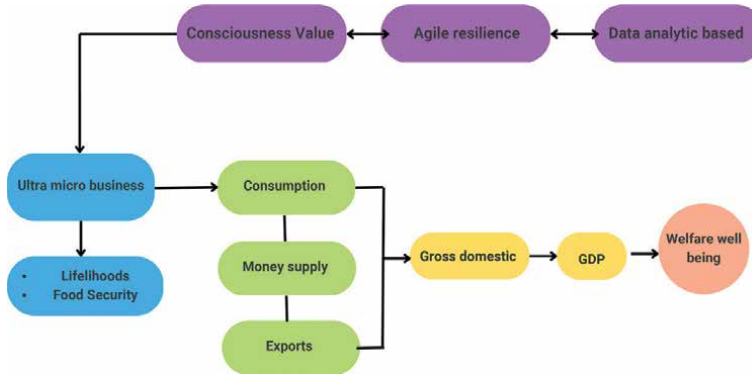

Figure 6.
Economic metabolism framework.

The village must provide confidence and certainty for the younger generation (Youth entrepreneurship) to return to their villages, carry out business activities with the provision of academic abilities that will help the community with innovations that they can access, and ultimately become a momentum to become a market leader with automation in the manufacturing maritime sector to become a maritime axis country.

The environment and natural resources are managed economically, but still prioritizing "care for the environment," with modern science not only with modern technology, but a lot of local knowledge that is a reference for reborn.

In fact, the problems faced by archipelagic countries such as Indonesia, have thousands of islands with vast seascapes and inhabited by many coastal communities, it is important to be supported by the political economy to produce a policy with a very strong commitment and a conflict between policies and implementation, because no matter how good the development strategy is through the economic policies of one country, it will be useless if it is not supported by political policies that favor the people, in accordance with its philosophy that the state is formed for the welfare of its people.

It is hoped that this chapter will be continued with a study that encourages in the issues of political and economic policies that urban and rural communities can coexist by ensuring environmental and ecosystem sustainability and thriving in coastal areas.

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Author details

Teuku Shadiq* and Hani Hasanah
Syekh-Yusuf Islamic University, Tangerang, Indonesia

*Address all correspondence to: teuku_fajarshadiq@unis.ac.id

References

[1] Hickel J. A Brief Guide to Global Inequality and its Solutions. 2nd ed. Chichester: Wiley; 2017

[2] Giridharadas A. In: Knopf AA, editor. The Winners Take all: The Elite Charade of Changing the World. 3rd ed. Vintage; 2018

[3] Lin JY, Yang Z, Li Y, Zhang Y. Development strategy and the MSMEs finance gap. Journal of Government and Economics. 2022;**5**:100034. DOI: 10.1016/j.jge.2022.100034

[4] Blazyte A. Number of small to medium-sized enterprises in China from 2012 to 2020. 2022. Available from: Statista: https://www.statista.com/statistics/783899/china-number-of-small-to-medium-size-enterprises/

[5] Pratama O. Konservasi Perairan Sebagai Upaya menjaga Potensi Kelautan dan Perikanan Indonesia. Direktorat Jenderal Pengelolaan Ruang Laut, Kementerian Kelautan dan Perikanan; 2020

[6] Tangerang Regency Government, 2013. Kabupaten Tangerang dalam Angka

[7] Karks S. Effects of Ecotones on Biodiversity. 2013

[8] Gill JC, Malamud BD. Anthropogenic processes, natural hazards, and interactions in a multi-hazard framework. Earth-Science Review. 2017;**166**:246-269

[9] Syahrin A. Analisis Kesesuaian Pemanfaatan Ruang Permukiman Kawasan Pesisir Kota Medan. Universitas Sumatera Utara; 2012

[10] Lee J, D. W. Statistical Analysis with ArcView GIS. Google Buku. 2001. Available from: https://books.google.co.id/books?hl=id&lr=&id=fqueoZP9ScgC&oi=fnd&pg=PR7&dq=Lee+J.+and+Wong+S.W.D.,+Statistical+Analysis+with+Arcview+GIS,+John+Willey+%26+Sons,+Inc.,+United+Stated+of+America,+2001.&ots=3Lz0DqBn_l&sig=Kegf1gRv7KnMmwzKvBK1lYs7Uks&redir_esc

[11] Stewart J. How to build a resilient rural business. 2022. Available from: Johnston Carmichael: https://johnstoncarmichael.com/insights/how-to-build-a-resilient-rural-business

[12] Blakely EJ, Bradshaw TK. Planning local economic development: theory and practice. Community Development Journal. Thousand Oaks, London and New Delhi: Sage Publications; 2002;**39**(1):90-91. DOI: 10.1093/cdj/39.1.90. ISBN 0-7619-2457-4

[13] van der Leeuw S. Social Sustainability, Past and Future. Journal of Eastern Asia University (Vol. 4, Issue 1). 2023

[14] Kazienko P, Musiał K, Kajdanowicz T. Multidimensional Social Network in the Social. Systems, Man and Cybernetics, Part A: Systems and Humans, IEEE Transactions. 2011;**41**(4):746-759. Available from: http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=5766051

[15] Trinanda TC. Pengelolaan Wilayah Pesisir Indonesia dalam Rangka Pembangunan Berbasis Pelestarian Lingkungan. Matra Pembaruan. 2017:75-84. DOI: 10.21787/mp.1.2.2017.75-84

[16] Norrby T. Building rural resilience in a post-coronavirus economy. 2020. Available from: Cordis Europa: https://cordis.europa.eu/article/id/417975-building-rural-resilience-in-a-post-coronavirus-economy

[17] Arsyad L, Mulyo J, Fitrady A. Strategi Pembangunan Berbasis Lokal. 2nd ed2018

[18] Lincolin Arsyad, Elan Satriawan, Jangkung Handoyo Mulyo, A. F. (2011). Strategi Pembangunan Perdesaan Berbasis Lokal. Available from: https://opac.perpusnas.go.id/DetailOpac.aspx?id=1147039#

[19] Gitz V, Meybeck A, Lipper L, Young C, Braatz S. Climate change and food security: Risks and responses. In Food and Agriculture Organization of the United Nations. 2016. DOI: 10.1080/14767058.2017.1347921

Chapter 8

Women Entrepreneurship Psychology in Managing Micro, Small, and Medium Enterprises (MSMEs): A Case Study in Indonesia

Anissa Lestari Kadiyono and Indri Yuliafitri

Abstract

Women play a major role in the family, community, and even the state, and hence, require major attention in their development. During the COVID-19 pandemic where the economy throughout the world—specifically in Indonesia—is declining, Micro, Small, and Medium Enterprises (MSMEs) play an important role. This indicates that women are empowered and play a very significant role in the economy of themselves, their families, and even the state. According to the MSME actors' perspective on development, their personal capacity, which is psychological capacity, has become the main factor as it is the driving factor of other resources that encourage superior entrepreneurial behaviors, through entrepreneurial orientation as mediator. Psychological capital is psychological fuel in the form of optimism, self-efficacy, resilience, and hope. It will affect entrepreneur orientation, as well as women's entrepreneurial performance, which are measures of success in entrepreneurship. Development of this model of women entrepreneurship will improve gender equality that supports women to be more empowered and better able to participate in revitalizing the Indonesian economy.

Keywords: psychological capital, entrepreneurial orientation, entrepreneurial performance, micro, small, and medium entrerprise (MSME), women entrepreneurship

1. Introduction

A total of 65 million micro, small, and medium entrerprises (MSMEs) in Indonesia contribute more than 61% of the Gross Domestic Product (GDP), which absorbs 97% of the workforce and contributes to exports by 14%. The MSMEs still dominate the economic structure by 99.9%, while large businesses are only 0.01%. Based on data from the Ministry of Cooperatives and Small and Medium Enterprises [1], it is reported that 65 millions of micro, small, and medium enterprises (MSMEs) in Indonesia are dominated by women up to 64.5% of all existing MSME actors. This

indicates that women are empowered and play a very significant role in the economy of themselves, their families, and even the state. In the end, perspective on gender has become an important part. Thus, the interventions to be given should not exclude women as only recipients or subjects, but also women as agents or crucial actors to advance the economy, social, and culture.

During the last few years to date, the percentage of women's income contribution has shown increasing progress. Based on data obtained from Central Statistics Agency regarding the contribution of women's income in Indonesia, it can be concluded that the percentage has continued to increase every year, that is, in 2010, it reached 33.50%, and in 2020, it reached 37.26%. In 2022, the prospect of the Indonesian economy was predicted to increase, and it was expected that it will improve the economy that had slumped during the pandemic by empowering the community, especially in the MSME sector. This is because MSMEs are the main sector that the Government of Indonesia pays attention to in the context of the National Economic Recovery, both before and after the COVID-19 pandemic. Empowerment in the MSME sector is expected to maintain and improve performance to continue to contribute greatly to the Indonesian economy.

The increase is a positive signal of an improvement in the active participation and autonomy of women in the economy, specifically in the industry of entrepreneurship. This is expected to continue until 2022 to improve the regional economy. The Ministry of Cooperatives and SMEs noted that the number of micro, small, and medium enterprises (MSMEs) spread across Indonesia reached 65.47 million units in 2019, which was an increase of 1.98% compared with 2018, which was 64.19 million units. In 2016, there were 61.7 million units, and in 2017, it reached 62.9 million units. It was predicted that in 2020, 2021–2022, the number will continue to increase. Based on data from the Central Statistics Agency in 2021, a total of 64.5% of the total MSMEs spread throughout Indonesia are managed by women [1]. At the micro-enterprise level, 52% of the 63.9 million micro-enterprises in Indonesia are women. For the small business level, there are 56% of the 193 thousand small businesses that are owned by women. At the medium-sized businesses, 34% of the 44.7 thousand business actors are women [1]. The Minister of Cooperatives and SMEs (MenKop UKM), Teten Masduki [1] also target the number of women entrepreneurships in Indonesia's economic ecosystem to continue to increase. These data show that the involvement of empowered women is very important and makes the economy of themselves, their families, and even Indonesia's economic growth increase through the MSMEs they manage. Given these relatively large numbers, it can be concluded that the development and progress of MSMEs are very dependent on the role of women who become business actors. If we take a look at the position of MSMEs, which are one of the pillars of national economic resilience, given the majority of MSME actors driven by women, capacity and competency development for each female actor are definitely needed in order to achieve MSME progress so as to produce optimal development.

There are strategies required to be studied to strengthen the role of women as entrepreneurs, including the transformation of informal businesses to formal businesses, transformation in supply chain, modernization in digital technology, and the growth of productive entrepreneurs. This requires an increase in the capacity of human resources, training, mentoring, access to financing facilities, legal aid facilities, information, etc., to be able to develop together.

According to the MSME actors' perspective on development, their personal capacity, which is psychological capacity, has become the main factor as it is the driving factor of other resources that encourage superior entrepreneurial behaviors. Concern

to these psychological factors will provide a more comprehensive approach, because an individual's success is not only influenced by the facilities received, the opportunities obtained, or the policies provided by the government, but also influenced by the internal factors that give them the internal power to take a stand, make decisions, decide to improve, and learn new things. This is what will be formulated through a women entrepreneurial empowerment approach, which are things that can be done by women from various backgrounds in empowering themselves as MSME actors.

1.1 Psychological capital

Implicitly, the entrepreneurial process for women entrepreneurs of SMEs is closely related to the concept of psychological capital consisting of hope, self-efficacy, resilience, and optimism proposed by Luthans et al. [2]. A person can rise to face challenges and move forward to achieve goals is influenced by psychological capital. Luthans et al. [2] define psychological capital as an individual's psychological condition characterized by self-confidence in taking on and overcoming difficult jobs (self-efficacy), positive attribution of current and future success (optimism), hope to achieve goals and the ability to finding alternative ways to achieve goals (hope), and the ability to recover quickly when faced with difficult challenges or problems (resilience). Psychological capital is possessed at the individual and organizational levels to achieve excellence through increased knowledge and human capital [2, 3]. Individuals with high psychological capital will be more adaptable and flexible in dealing with heavy work demands. At the same time, the psychological capital possessed will help in improving abilities and well-being [2].

Working women have many responsibilities at work and at home, which can lead to health problems such as stress, anxiety disorders, and other unpleasant consequences. Based on the research of Chawla & Sharma [4], psychological capital has the potential to play an important role to assist female workers in overcoming challenges in the workplace and in managing stress. Psychological capital can help a person to be better able to develop, survive, and maintain something they want [5]. Based on a research by Ambepitiya & Gao [6], when women's empowerment is combined with psychological capital, women can find out their own abilities for success and improvement in businesses that are run sustainably.

Psychological capital is part of positive organizational behavior and is directly related to a person's positive emotions [2]. Positive emotions have a significant impact on individual performance at work. Fred Luthans and colleagues proposed the notion of psychological capital (PsyCap) to explain the factors that drive the impact of positive emotions [2]. Based on this, psychological capital is an individual's positive psychological state, which is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and when necessary, redirecting path to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bounce back and even beyond (resilience) to attain success [3].

Psychological capital is possessed at the individual and organizational levels to create excellence by enriching knowledge and human capital [2]. According to Peterson et al. [7], psychological capital is a positive approach, meaning, and outcome that is considered important for human motivation, cognitive processing, struggle for success, and resulting performance in the workplace. At the individual level, psychological capital is described as a positive psychological state [8], which includes hope,

efficacy, resilience, and optimism that will contribute to a person's performance of work better.

Psychological capital emphasizes the positive side of human life in the form of hope, creativity, courage, wisdom, responsibility, etc. [9]. The positive side of psychological capital can trigger a positive affective state that can facilitate the expansion of one's actions and thoughts that lead to higher creativity [10, 11]. Positive emotions can basically build and restore energy, physically, socially, and psychologically, which was previously depleted [10]. Psychological capital cannot stand alone and is not an implication of only one dimension, but the joint variance of the four accompanying dimensions, namely self-efficacy, hope, resilience, and optimism [12], as follows.

a. Self-efficacy is defined as a person's confidence in their ability to mobilize the motivation, cognitive resources, or actions needed to successfully carry out a particular task in a particular context [13]. Efficacy is not related to a person's actual skills, but rather the beliefs that a person has about what can be done with those skills [14]. In addition, efficacy was found to have a strong positive relationship with work-related performance [13, 15].

b. Hope is a belief to set significant goals, the individual's process of overcoming obstacles and allowing to overcome the obstacles during goal achievement with the power of motivation [16, 17]. Hope involves alternative means of achieving those goals. In other words, hope is the desire to succeed as well as the ability to identify, clarify, and pursue the path to success [18].

c. Resilience is the ability to resolve and deal with situations when faced with negative situations [19]. In positive psychology, resilience is characterized by positive coping and adaptation in the face of significant risks or difficulties [20, 21]. Resilience allows individuals to not only survive, but also has the potential to thrive on positive adjustment to change [21].

d. Optimism is defined as a positive view of the future [7]. Snyder et al. [17] define optimism as an individual's hope and positive perspective to give the best performance and persistence to achieve the target. Compared with pessimists, optimists benefit from career opportunities at high levels and pursue goals in difficult situations [22]. Hence, optimism as an aspect of psychological capital is associated with a view of positive outcomes, which includes positive emotions and motivations, and has realistic warnings [19] (**Figure 1**).

1.2 Entrepreneurial orientation

Being an entrepreneur requires an entrepreneurial orientation to face the current various challenges [1]. Entrepreneurial orientation can also be a significant contributor to the success of a job [23]. Based on various previous studies, entrepreneurial orientation has a positive relationship to job performance [2–6]. Based on its definition, Entrepreneurial Orientation is a process, practice, and activity of deciding something that gives rise to a new action [2]. Another definition of Entrepreneurial Orientation according to Miller [24] is something that requires the emergence of innovativeness, risk-taking, and proactiveness simultaneously. Entrepreneurial Orientation can also

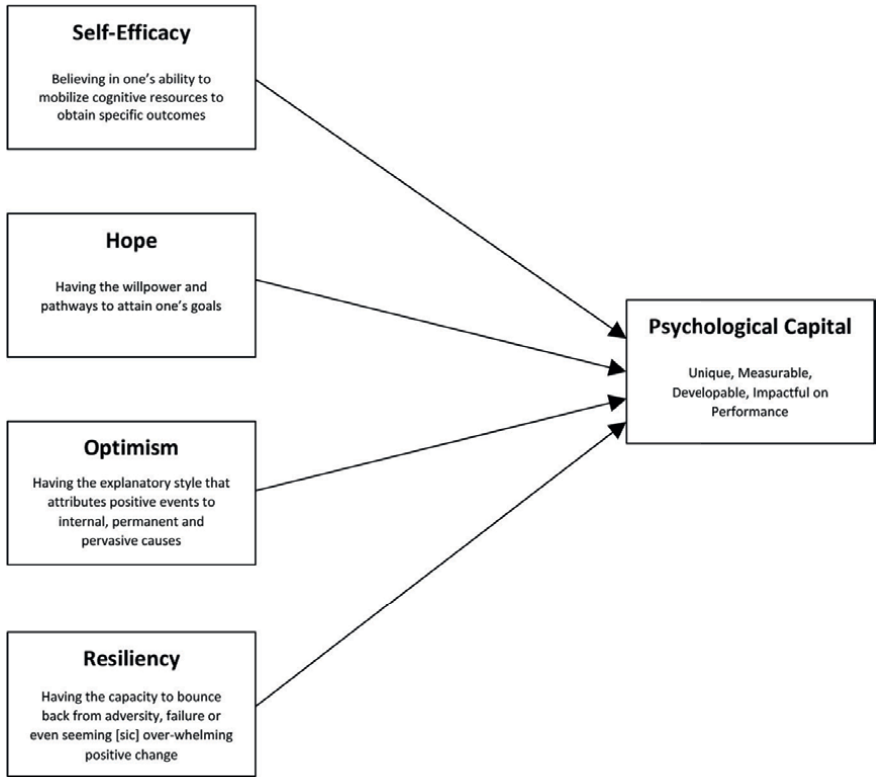

Figure 1.
Dimensions of psychological capital [3].

be defined as a tendency that can lead to a behavior associated with entrepreneurial activity [11]. Entrepreneurial Orientation, at the organizational level, is defined as a strategy-making process that provides the basis for making decisions and acting for entrepreneurship [3].

According to Lumpkin & Dess [25], there are several dimensions that characterize an Entrepreneurial Orientation. These dimensions are autonomy, innovativeness, risk-taking, proactiveness, and competitive aggressiveness. These dimensions can arise when an organization plans to do something new. These dimensions are processes in an organization that involve strategic decisions of the organization.

1.2.1 Autonomy

Autonomy is an independent action of a person or group in bringing an idea or view and will be carried out until it is resolved. In general, autonomy means the ability and desire to be able to independently pursue an opportunity. In the context of the organization, autonomy can be explained as an action that is independently carried out to deal with obstacles occurred. Although there are factors such as the availability of resources, actions from competitors, or internal organizational decisions that can change the initiative to create new things, these things are considered insufficient to eliminate a person's autonomy to create new things.

1.2.2 Innovativeness

Innovativeness reflects a tendency of organizations to use and support new ideas, things, experiments, and creative processes that can produce new products, services, or technologies. Although innovativeness can vary in degree of radicalism, it represents a basic willingness to move beyond existing technologies and practices and pursue something new that has never existed. Innovativeness has various kinds that can be formed on a continuum, ranging from simple things such as trying a new product or experimenting with something, to being committed to mastering a product or technology. Innovativeness is an important component of Entrepreneurial Orientation because innovativeness reflects the importance of an organization to seek new opportunities.

1.2.3 Risk-taking

The concept of risk-taking is very often used to describe entrepreneurship. This concept arises from the main factor that distinguishes between entrepreneurs and recruited employees, namely the uncertainty and risk in entrepreneurship. Risk itself has various meanings, depending on the context in which it is applied. For instance, in the context of strategy or in the context of financial analysis. It can also be said that risk-taking has its own levels, ranging from "no risk at all" to the "safe" level and to the "very risky" level.

1.2.4 Proactiveness

Taking initiative by anticipating and pursuing new opportunities as well as participating in emerging markets is often defined as proactiveness. Proactiveness according to Webster's Ninth New Collegiate dictionary (1991) in Lumpkin & Dess [25] is defined as anticipatory action against problems, needs, or changes that will occur in the future. Hence, proactiveness can be crucial to entrepreneurship orientation as it provides a forward-looking perspective accompanied by innovation or activity to create new things.

1.2.5 Competitive aggressiveness

Competitive aggressiveness is a tendency to face challenges directly and intensely from competitors to create new things or improve their position, in order to outperform their competitors in the market. Competitive aggressiveness is characterized by responsiveness, which can take the form of direct confrontation. For example, a new product plans to enter a market, and other competitors have identified a lower price in the face of the challenge. Competitive aggressiveness also reflects a willingness to be unconventional rather than having to rely on traditional methods to compete. Examples of forms of competitive aggressiveness that can occur are using unconventional tactics to challenge incumbents in the industry, analyzing and targeting competitors' weaknesses, and focusing on high-value products while monitoring spending.

Based on various previous studies, it was found that entrepreneurial orientation has a positive relationship with performance [2–5]. Based on the meta-analysis conducted by Rauch et al. [26], from more than 50 research studies that have been conducted, the results show that entrepreneurial orientation has positive implications for performance (**Figure 2**).

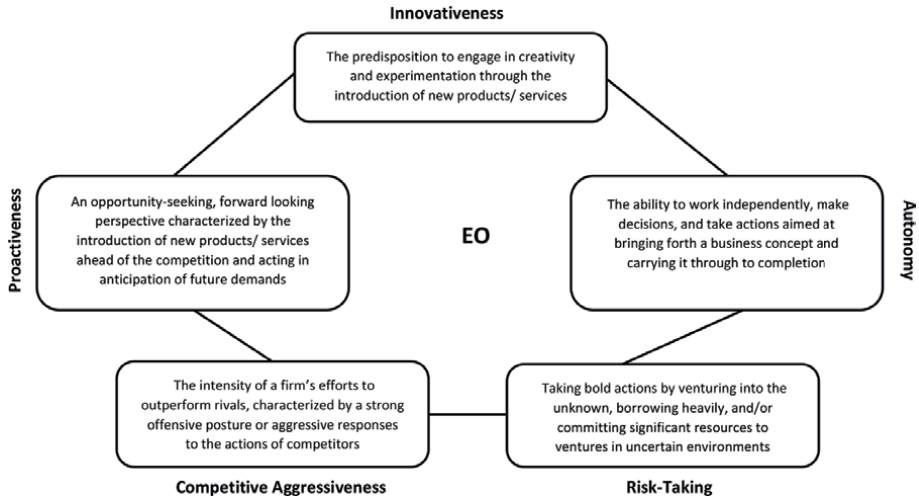

Figure 2.
Dimensions of entrepreneurial orientation [27].

1.3 Entrepreneurial performance

Performance has become something that is greatly important in running a business. In the context of entrepreneurship, performance is the output of entrepreneurs that can be measured. In addition, it is one of the most significant dependent variables and is widely used in research in the field of management or business. This is due to the fact that performance can explain how well an entrepreneur is at work [28]. Daft [29] in his research writes on business performance, namely ability in the process of utilizing resources owned by the organization, which includes knowledge, human resources, and raw materials to achieve the goals of effectiveness and efficiency. Entrepreneurial performance is defined as profit growth made by an entrepreneur [30] and taking the opportunity to develop business ideas in [31]. In this case, these advantages indicate the progress and good development of a business they manage. In addition, entrepreneurial performance is also defined as the capability of an entrepreneur/organization in achieving business goals [32, 33]. The goals can be seen from the high profits earned, adequate product quality, good financial wheels, etc. This performance can generally be analyzed through an objective or subjective perspective. In their research, many recommend that this performance measurement should include two important dimensions, namely from a financial and non-financial side that can measure what goals have been achieved and can predict the future [34]. The financial dimension, for example, is profit, turnover, and the financial wheel related with finance. On the other hand, non-financial dimension includes the ability to take risks, innovation, need for achievement, commitment, and sustainability of the business.

Kimatu and Bichanga [35] state that the performance of enterprises can be determined by their competitive strategy, which means the enterprise with a higher competitive advantage compared with its competitor will have better performance and vice versa. Entrepreneurial performance consists of two dimensions, namely financial performance and non-financial performance.

Financial aspect includes:

1. Profit, which is an assessment of MSMEs' performance through profits obtained from the business sales.

2. Sales, which is an assessment of MSME performance based on how the process of selling basic and other goods from the business.

3. Cash Flow, which is an assessment of MSME performance based on the flow of cash expenditures and cash receipts within a certain period.

Non-financial aspect includes:

1. Employee condition, which is an assessment of MSME performance based on the conditions of the employees who work for the business.

2. Valued customer, which is an assessment of MSME performance on the value of the products/services offered, such as attention, relevance, confidence, and satisfaction, recognized by customers.

3. Product Development, which is an assessment of MSME performance based on all stages that aim to develop products from a concept or idea that has been run by the business.

The framework used in this research can be seen in the **Figure 3**.

Developing on the base of logical relationships derived from the aforementioned theoretical background, which provided support for psychological capital being an antecedent of entrepreneurial performance with the intermediary effect of entrepreneurial orientation, this study proposes following hypotheses:

H1. Psychological capital has positive direct effect on entrepreneurial orientation.

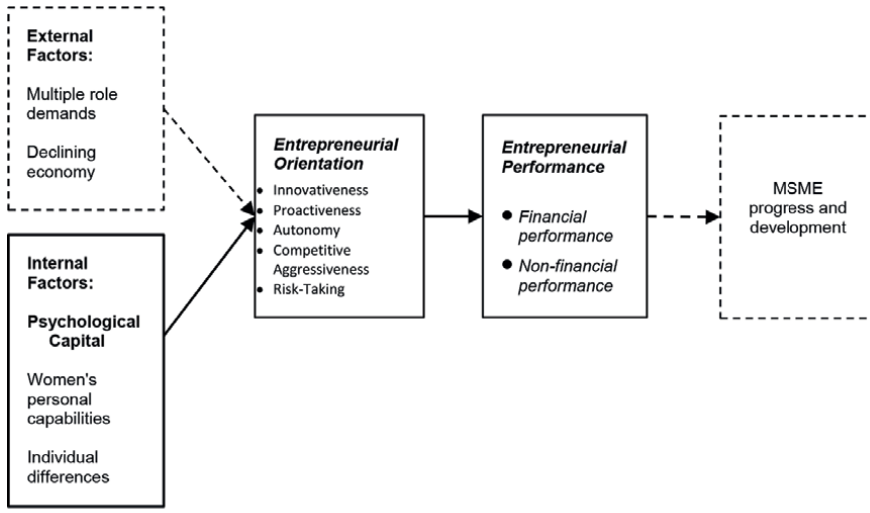

Figure 3.
Research framework.

H2. Psychological capital has positive direct effect on entrepreneurial performance.

H3. Entrepreneurial orientation has positive direct effect on entrepreneurial performance.

H4. Psychological capital has positive indirect effect through entrepreneurial orientation impacts on entrepreneurial performance.

In the empirical study, the relationship model of psychological capital, entrepreneurial orientation, and entrepreneurial performance as shown in **Figures 1–3** can be constructed based on the above hypotheses with each hypothesis being divided into sub-hypotheses to test the relationship between psychological capital and entrepreneurial orientation. The independent variables of this study are Psychological Capital, including Self-Efficacy, Hope, Optimism, and Self-Resilience. The intermediary variables are entrepreneurial orientation, including Innovativeness, Proactiveness, Autonomy, Competitive Aggressiveness, and Risk-Taking. The dependent variable is enterpreneurial performance, including Financial Performance and Non-Financial Performance. Based on the current entrepreneurial environment, psychological capital can positively affect the performance of enterprise through entrepreneurial orientation.

2. Methods

The method used in this research was descriptive quantitative. Descriptive quantitative research is research that aims to explain and describe a phenomenon based on numerical data to answer the research question. This method is also usually used by researchers to determine the status of human groups, an object, a set of conditions, a system of thought, or a class of events in the present, which aims to make a systematic, factual, and accurate description of the facts, characteristics, as well as the relationship between the phenomena examined. The research population was SMEs in Indonesia. Sampling was carried out on three provinces, including Province of the Special Region of Yogyakarta, West Java Province, and West Sumatra Province. The number of samples was 995 MSME actors.

The instrument used to measure Psychological Capital was Psychological Capital Questionnaire (PCQ), which was adapted from Luthans and Youssef et al. [3] with Cronbach's Alpha value of 0.905, indicating that PCQ is reliable. Meanwhile, the instrument used to measure Entrepreneurial Orientation was an instrument modified from the Individual Entrepreneurial Questionnaire [36]. Based on the analysis results, the adapted Individual Entrepreneurial Orientation Scale (IEO) had a Cronbach's Alpha value of 0.929, meaning that IEO is reliable. The instrument used to measure women entrepreneurial performance was an instrument adapted and modified from several previous studies on entrepreneurial performance, including Entrepreneurial Performance Questionnaire on the Non-Financial Performance aspect [35] and Entrepreneurial Performance Questionnaire on the Financial Performance aspect. This Entrepreneurial Performance instrument was then re-adapted by researchers from the original language into Indonesian and adapted to the research population. Based on the results, the value of Cronbach's alpha was .910, indicating that the instrument is reliable.

3. Discussion

Gender Equality and Women's Empowerment have become part of Indonesia's National Long-Term Development Plan for the period 2000–2025. Women as economic drivers of families and communities can be implemented through entrepreneurship activities and Micro, Small, and Medium Enterprises (MSMEs). In 2022, Indonesia has more than 64 million MSMEs that contribute to the National Gross Domestic Product (GDP) by 61%, of which 64% of MSME actors are women, and there has been an increase in the number of businesses led by women by 114%. Given that women constitute 48.4% of the total population of Indonesia, the potential of women must continue to be explored and empowered. Women play a big role in the economy for themselves, their families, and even for the country. Therefore, the empowerment of women must be carried out properly.

The economic condition in Indonesia currently continues to develop with the increasing number of MSMEs; hence, the competition faced will be even tighter. During the process, women who can take advantage of the situation and have consistency and confidence in their abilities will be able to move forward more easily than those who do not. If this is not addressed, there will be a continuing gap that makes it difficult for women-owned businesses to progress and develop, given the important role of women in Indonesia's economic progress. Women's empowerment is needed as it can be a solution for women in considering their strengths, weaknesses, opportunities, threats, and developing themselves to be able to move forward so as to open up the potential to change the lives of themselves, their families, and communities through their MSMEs. Further treatment is necessary because empowerment of women requires a positive psychological role from within in the form of psychological capital [2]. Psychological capital will be studied further as it plays significant role that can strengthen the role of women's empowerment. Psychological capital is an individual's positive psychological state of development and is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and when necessary, redirecting path to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining, and bounce back and even beyond (resilience) to attain success [3].

Based on the results, it was found that entrepreneurial orientation as a mediator has data as shown in **Table 1**.

The path analysis performed provides data as shown in **Table 2**.

The data above show that entrepreneurial orientation plays as a mediator that correlates psychological capital with entrepreneurial performance with an indirect

				95% confidence interval				
Effect	**Label**	**Estimate**	**SE**	**Lower**	**Upper**	**Z**	**p**	**% Mediation**
Indirect	a × b	0.475	0.0306	0.4153	0.535	15.55	<.001	79.9
Direct	c	0.120	0.0160	0.0882	0.151	7.48	<.001	20.1
Total	c + a × b	0.595	0.0329	0.5302	0.659	18.05	<.001	100.0

Table 1.
Mediation estimates.

Path estimates									
			Label	Estimate	SE	95% Confidence Interval		Z	p
						Lower	**Upper**		
PC	→	EO	a	0.655	0.0409	0.5748	0.735	16.00	<.001
EO	→	EP	b	0.726	0.0110	0.7039	0.747	65.67	<.001
PC	→	EP	c	0.120	0.0160	0.0882	0.151	7.48	<.001

Table 2.
Path analysis.

effect of 0.475. If there is no mediator, it provides a direct effect of 0.120. This can be seen in **Figure 4**.

Based on the analysis, Entrepreneurial Orientation plays a significant role in mediating the relationship between psychological capital and entrepreneurial performance. Before deciding to be an entrepreneur, a person must have an orientation in order that they can carry out their work with good performance and be able to overcome various difficulties. Therefore, entrepreneurial orientation is one aspect that needs to be considered. In accordance with the definition of entrepreneurial orientation that is a process, practice, and activity of deciding something that gives rise to a new course of action, then this is what will arise when they decide to be an online shop actor to take action for entrepreneurship and face all situations that will arise. The dimensions of entrepreneurial orientation consisting of innovativeness, proactiveness, risk-taking, passion, and perseverance can have an important role in performance.

If innovativeness possessed in a person, it will bring up a good image and reputation of the business. Therefore, it can increase the income earned and increase the efficiency of the operational costs that must be incurred [7]. If a person also has innovativeness, they will be able to answer the various needs requested by their consumers, resulting in satisfaction and retention.

Proactive individuals are able to adapt to change, to see the risks that will occur in the future, and to turn these risks into opportunities rather than challenges. They will also be able to identify gaps that occur and to close those gaps with the products and services offered [8]. In addition, those who are proactive will actively seek new opportunities and are able to outperform their competitors who are less willing to seek new opportunities [9].

Taking risks means having the courage to face the possibility of failure or success. Those who take risks enable them to stand out from their competitors to create new opportunities [8]. Those who take risks also enable them to act aggressively and explore new possibilities [10].

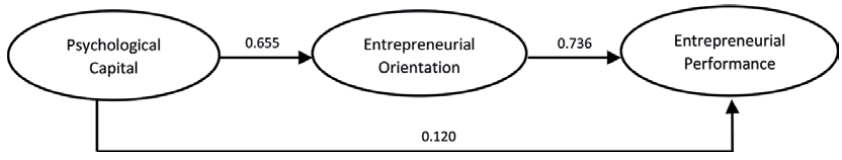

Figure 4.
Relationship between variables.

Those who have passion in doing their job will make them get wider recognition, take advantage of various opportunities ahead, be able to develop new ideas, and improve their performance [12]. Individuals who have perseverance or persistence will continue to strive to achieve the desired goals even though they are faced with various difficulties [12]. In addition, persistence is also positively related to income [13].

In general, if all the dimensions possessed in a person, it will have a positive impact on the performance of MSME actors both financially and non-financially. Given this positive impact, the performance of MSME actors will be much better. It will enable them to encounter the various difficulties and develop them to be entrepreneurs with improved abilities.

In entrepreneurship, there are various factors that can affect the orientation and performance of an entrepreneur, both internal and external [14]. Internal factors include personality and motivation [14], gender [15–18], age [19, 20], and education [21]. Meanwhile, external factors include cultural factors, assistance from government programs, business size, and length of business [14, 22].

In external factors, culture is one of the important elements in entrepreneurship as it can influence the attitude of an individual in entrepreneurship. Some cultures can make a person encouraged or even given up continuing to run the business. Assistance from government such as facilities, programs, or subsidies can also affect entrepreneurial orientation as it will further encourage business actors to strengthen their entrepreneurial activities [22]. In addition, a person's tenure has a negative relationship to entrepreneurial orientation because the longer working hours make a person hampered to innovate and avoid taking risks.

Psychological capital consisting of self-efficacy, hope, optimism, and self-resilience will encourage MSME actors to develop innovation, autonomy, proactive attitude, risk-taking, and competitive aggressiveness, which will drive the achievement of financial and non-financial performance of MSME actors, consisting of profit, sales, cash flow, employee conditions, valued customers, and product development.

The female MSME actors who come from different provinces and ethnic groups do not show any fundamental differences in terms of psychological capital, entrepreneurial orientation, or entrepreneurial performance. However, this indicates that female MSME actors can increase their psychological capacity to create entrepreneurial orientation that can support the better achievement of MSME performance results, in terms of both financial and non-financial.

4. Conclusions

Studies on the importance of improving psychological capacity have proven to be able to improve the performance of MSME actors mediated by Entrepreneurial Orientation. Based on entrepreneurial perspective, women can deal with problems despite doing housework and MSMEs at the same time by developing their psychological capacity. Psychological capital plays as psychological fuel in the form of optimism, self-efficacy, resilience, and hope, which will encourage women to create positive attitudes toward entrepreneurship, which in turn will help them solve problems, encounter problems, and compete in the industry in MSME sector. Development of this model of women entrepreneurship will improve gender equality that supports women to be more empowered and better able to participate in entrepreneurial fields in order that they can encourage changes in woman's entrepreneurial

behavior to become an accelerator of revitalizing the Indonesian economy in particular.

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Conflict of interest

The authors declare no conflict of interest.

Author details

Anissa Lestari Kadiyono[1*] and Indri Yuliafitri[2]

1 Faculty of Psychology, Padjadjaran University, Sumedang, Indonesia

2 Faculty of Economics and Business, Padjadjaran University, Sumedang, Indonesia

*Address all correspondence to: anissa.lestari@unpad.ac.id

References

[1] Statistik BP. Pertumbuhan Ekonomi. Jakarta: Badan Pusat Statistik; 2021

[2] Luthans F, Avolio BJ, Avey JB, Norman SM. Positive psychological capital: Measurement and relationship with performance and satisfaction. Personnel Psychology. 2007;**60**(3):541-572

[3] Luthans F, Youssef CM, Avolio BJ. Psychological Capital: Developing the Human Competitive Edge. Oxford: Oxford University Press; 2007

[4] Chawla S, Sharma RR. Enhancing women's well-being: The role of psychological capital and perceived gender equity, with social support as a moderator and commitment as a mediator. Frontiers in Psychology. 2019;**19**(10):1377

[5] Hmieleski KM, Carr JC. The relationship between entrepreneur psychological capital and well-being. Frontiers of Entrepreneurship Research. 2007;**6**(30):123-138

[6] Ambepitiya KR, Gao Y. The association between women's perceived empowerment and sustainability orientation of women's entrepreneurship in Sri Lanka: Moderating effect of psychological capital. International Journal of Organizational Innovations. 2019;**1**(3):170-182

[7] Peterson SJ, Luthans F, Avolio BJ, Walumbwa FO, Zhang Z. Psychological capital and employee performance: A latent growth modeling approach. Personnel Psychology. 2011;**64**(2):427-450

[8] Avey JB, Reichard RJ, Luthans F, Mhatre KH. Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. Human Resource Development Quarterly. 2011;**22**(2):127-152

[9] Csikszentmihalyi M, Seligman M. Positive psychology. American Psychologist. 2000;**55**(1):5-14

[10] Fredrickson BL. The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. American Psychologist. 2001;**56**(3):218

[11] Luthans F, Luthans KW, Luthans BC. Positive psychological capital: Beyond human and social capital. Business Horizons. 2004;**47**(1):45-50

[12] Avey JB. The left side of psychological capital: New evidence on the antecedents of PsyCap. Journal of Leadership & Organizational Studies. 2014;**21**(2):141-149

[13] Stajkovic AD, Luthans F. Self-efficacy and work-related performance: A meta-analysis. Psychological Bulletin. 1998;**124**(2):240

[14] Bandura A. Self-Efficacy: The Exercise of Control. Stuttgart, Germany: Macmillan; 1997

[15] Bandura A, Locke EA. Negative self-efficacy and goal effects revisited. Journal of Applied Psychology. 2003;**88**(1):87

[16] Çetin F, Basim HN. Psikolojik Dayanıklılığın İş Tatmini ve Örgütsel Bağlılık Tutumlarındaki Rolü. Is, Guc. The Journal of Industrial Relations & Human Resources. 2011;**13**(3):40-64

[17] Snyder CR, Harris C, Anderson JR, Holleran SA, Irving LM, Sigmon ST, et al. The will and the ways: Development and

validation of an individual-differences measure of hope. Journal of Personality and Social Psychology. 1991;**60**(4):570

[18] Snyder CR, editor. Handbook of Hope: Theory, Measures, and Applications. Academic Press; 2000

[19] Luthans F. The need for and meaning of positive organizational behavior. Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior. 2002;**23**(6):695-706

[20] Masten AS. Ordinary magic: Resilience processes in development. American Psychologist. 2001;**56**(3):227

[21] Masten AS, Reed MG. Resilience in development. Handbook of Positive Psychology. 2002;**74**:88

[22] Wrosch C, Scheier MF. Personality and quality of life: The importance of optimism and goal adjustment. Quality of Life Research. 2003;**12**(1):59-72

[23] Meiryani M, Setiawan DR. Government efforts to improve economic inequality In the framework of Indonesia's economic equity. Research In Management and Accounting (RIMA). 2022;**5**(1):34-45

[24] Miller D. The correlates of entrepreneurship in three types of firms. Management Science. 1983;**29**(7):770-791

[25] Lumpkin GT, Dess GG. Clarifying the entrepreneurial orientation and construct and liking it to performance. The Academy of Management Review. 1996;**21**(1):135-172

[26] Rauch A, Wiklund J, Lumpkin GT, Frese M. Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future. Entrepreneurship Theory and Practice. 2009;**33**(3):761-787

[27] Farsi J, Rezazadeh A, Najmabadi A. Social capital and organizational innovation: The mediating effect of entrepreneurial orientation. Journal of Community Positive Practices. 2013;**13**(2):22-40

[28] Aminu IM, Shariff MN. Determinants of SMEs performance in Nigeria: A pilot study. Mediterranean Journal of Social Sciences. 2015;**6**(1):156

[29] Daft RL. The Executive and the Elephant: A Leader's Guide for Building Inner Excellence. New Jersey, United States of America: John Wiley & Sons; 2010

[30] Shane S, Nicolaou N. The genetics of entrepreneurial performance. International Small Business Journal. 2013;**31**(5):473-495

[31] Sebikari KV. Entrepreneurial performance and small business enterprises in Uganda. International Journal of Social Sciences Management and Entrepreneurship (IJSSME). 2019;**3**(1):162-171

[32] Caylina E, Sari RN, Anugerah R. Faktor-Faktor Yang Mempengaruhi Kinerja Usaha Kecil Dan Menegah (Ukm) Di Provinsi Riau (Pada Sektor Industri Pengolahan Kelapa Sawit). Jurnal Akuntansi (Media Riset Akuntansi & Keuangan). 2019;**7**(2):137-147

[33] Iqbal I. The impact of Strategic HRM on the organizational growth: An empirical study of universities in Karachi (Doctoral dissertation, Dadabhoy Institute of Higher Education)

[34] Batjargal B. Social capital and entrepreneurial performance in Russia: A longitudinal study. Organization Studies. 2003;**24**(4):535-556

[35] Kimatu T. Determinants of loan defaults in saccos in Kenya: A case of metropolitan national sacco ltd in Kenya (Doctoral dissertation, University of Nairobi)

[36] Santos G, Marques CS, Ferreira JJM. Passion and perseverance as two new dimensions of an individual entrepreneurial orientation scale. Journal of Business Research. 2020;**112**(March):190-199

Chapter 9

Women Entrepreneurs as Vloggers: Turkish Beauty YouTubers in the Context of Simulative Labor

Aslican Kalfa Topates

Abstract

Vloggers and content producers have become famous by being active on platforms, such as YouTube and Instagram, which are essential components and mainstays of today's internet usage practices. In this context, YouTubers and content producers have become the most striking figures of virtual media in recent years, while beauty phenomena reach many followers and influence large audiences. With these aspects, the phenomena become the subjects of women's entrepreneurship activities and form a new type of virtual/digital entrepreneurship. On the other hand, the labor exerted by the phenomena while applying different practices to aestheticize the body in their videos can be conceptualized as "simulative labor." Based on this argument, this research aims to analyze the way of constructing simulative labor in the activities of beauty vloggers as virtual female entrepreneurs. In the context of the study, the videos of Duygu Özaslan and Danla Bilic, two of the beauty phenomena with the highest number of followers in Turkey, were subjected to content analysis within the scope of the qualitative research method. The main finding of the research is that both entrepreneurial beauty phenomena have become icons by performing simulative labor. However, the female identities represented by the icons produce simulations that differ significantly from each other.

Keywords: women entrepreneurship, YouTubers, simulative labor, internet culture, virtual culture

1. Introduction

Castells [1] states that today is a network society and argues that in this type of society, internet technologies shape life and are shaped by life, and create new communication styles. This fact leads to the formation of an Internet Galaxy, which he describes as "a new world of communication" [1]. While the dramatic effect of digitalization on the economy has led to the emergence of the "digital economy" concept [2] in this phenomenon of global capitalism, there is an abundance of digital information/digital meta, being an essential tool for analyzing social media [3]. The types of labor are also transforming, and new income-generating activities have the potential to provide high income to their performers. These activities, including YouTube and

Instagram influencing, which have emerged with the rise in social media usage since the 2000s, are becoming increasingly popular. Moreover, YouTube vlogging has become an online autobiography where people build their identities. In this context, vloggers periodically share their daily lives with their followers [4]. Such practices based on individual commodification and representation intersect with the notion of "spectacle" focused on by Debord [5], who introduced the concept of "society of the spectacle." This intersection creates new forms of work and categories of labor. In conjunction with these developments, academics began to question whether the practices mentioned are professions or have the nature of labor. Thus, social media has started to be studied by many different disciplines today [6].

Adapting the female body to patriarchal capitalist ideals, one of the essential components of the consumer society"s functioning, has increased the interest in vlogs organized around beauty. Thus, videos shared by many amateur women on virtual channels, based on practices that aestheticize the female body, have become gradually popular. As a result of this process, while some women turned into beauty phenomena and met with a large audience, the integrated structure of consumption and production shapes women vloggers' activities. This research argues that income-generating activities, considered a form of labor and realized through social media, are described as "simulative labor" with a Baudrillardian [7] perspective, asserting that vloggers' activities are based on simulation. In parallel with this, it aims to analyze how hierarchical relations between women are reproduced and how different women's identities are constructed through simulative labor. The literature has limited discussions on the relationship between Baudrillard's simulation theory and social media. However, his theory can provide a rich analytical framework for analyzing vloggers. In light of this argument, the research has the potential to be a pioneer as it makes a contribution to the literature on the conceptualization of entrepreneurial labor of beauty phenomena based on Baudrillard's theory. Moreover, the research will question the allegation put forward by third and fourth-wave feminist researchers that consciousness and initiative in beauty practices have functionality in terms of women's liberation.

The paper is organized as follows: First, the study will analyze labor and virtual culture in the simulation era. These discussions will implement a theoretical framework around visuality, visions, micro-celebrities, simulations, and simulative labor. In the field research part of the study, after introducing methodology, the research findings obtained by watching and subjecting to content analysis of the videos of Duygu Özaslan and Danla Bilic within the context of the qualitative research method will be presented. The following chapters will include findings on the relations between simulation and iconization, the dilemma of specialization and non-specialization, the death of sisterhood, and the enjoyment of iconization.

2. Theoretical framework

2.1 The new virtual culture in the simulation age

The technological part of the internet draws the boundaries of human behavior and is shaped by the social aspect of the internet, based on human relations. Thus, the internet encompasses the technological and social subsystems that make up a techno-social system [8]. Visuality and spectacle are the essential elements that structure the internet culture and the global patriarchal capitalism of our age. In this sense, it is not a coincidence that Debord [5] identifies today's world with the "society of the

spectacle" and Han [9], with the concept of the "society of exhibition." Hence, the virtual technology culture of global capitalism has the character of spreading, massifying, accelerating, and fluidizing the visual more and more. Social networking sites that create network-based communities where the development and evolution process continues [10] are intensified by visual forms supported by technology.

YouTube is a distinctive part of the visual internet culture. In partnership with Google, it is a popular social media application many users prefer [10]. It is increasingly adopting a television broadcast-like structure rather than social networks or group interaction [11]. YouTube and YouTubers' popularity originated from the recent transformation in the internet economy that went through a crisis in 2000. Although finance capital management has increased the market value of many internet companies, it has yet to reach profitability. This situation has resulted in the bankruptcy of many internet companies. Discussions about Web 2.0 and social media being new and different were intended to persuade investors to invest in internet companies after this crisis. Therefore, Web 2.0 and social media emerged as ideological tools to overcome the crisis and ensure the internet economy's capital accumulation [8]. The argument that Web 2.0 technologies will reinforce a participatory culture has also become popular. This concept often used to indicate the participation of users, viewers, consumers, and fans in creating culture and content can be exemplified by coediting an article on Wikipedia, uploading a video to YouTube, or sharing short messages on Twitter. The participatory culture model is the opposite of the broadcasting model, based on mass media, such as newspapers, radio, and television, where there is one sender and many receivers [8]. Based on the fact that users and viewers can actively produce the culture themselves, some scholars state that this process has made culture and society more democratic. However, according to Fuchs, this argument needs to be questioned. An internet environment dominated by companies that accumulate capital by exploiting and commodifying users is far from providing participatory democracy. The cultural meanings inherent in such an internet structure cannot express participation [8].

One of the concepts that started to be discussed as a result of these developments was platform capitalism. This concept is functional to analyze the "platform" defined by a combination of socio-technical and capitalist business practices. The platform is not just a manifestation of transformations in the relations and structures of contemporary capitalism. It should also be seen "as a discrete mode of socio-technical intermediary and capitalist business arrangement" [12]. In social media platforms, many strategies to turn leisure labor into income are followed, transforming cultural capital (taste) and social capital, including friends, admirers, followers, and members, into economic capital [13]. Thus, research on categories such as Instagram influencing, being a YouTuber, and blogging has revealed that creating social media content is a form of labor. The digital labor debate has also emerged within the scope of critical media and communication studies with the rise of social media. This discussion analyzes unpaid user labor required for capital accumulation [8]. "Especially used for social media activities on for-profit platforms" [8], digital labor "is labor that produces information through digital media" [2]. Some studies have found that this form of labor, although new, has similarities to the labor categories inherent in older forms of the media and culture industries [14].

In its early days, the amateur nature of the videos, rather than being daily, mundane, or newsworthy entertaining, was the principal and distinctive characteristic of YouTube [15]. Encouraging people to constantly make their broadcasts, present their representations and commodify themselves, YouTube accelerates the process of

becoming famous on the internet [11]. In this process, the internet started to create celebrities as an alternative to mass media, such as television and cinema [8]. As it became popular, vloggers became famous, gaining many followers on other social media platforms, publishing books, and starring in television series [13]. Today, many YouTubers have YouTube pages and channels and release music albums, act in movies and commercials, make their movies, and participate in television programs and even award ceremonies [16].

Activities such as content production on the internet or being a YouTuber gradually have become so profitable that the economic boom created by the income generated by these activities is called "wanghong jingji" (internet celebrity economy) in Chinese [17]. It is even claimed that internet celebrities and influencers create a new class. This development in social media is nourished by platform logic and visibility labor [18]. The emergence of the concept of fame labor, defined as emotional labor for the pressure of conforming to the micro-celebrity culture [19] reveals the significance of micro-celebrities in the new capitalism. Being a social reality that emerges in such a context, micro-celebrity [8], defined as the mentality and practices focusing on the private life of the micro-celebrity [20], incorporates strategies in which privacy and originality are the main components [11]. Micro-celebrity is a perception of reality that expresses the narratives and privacy of micro-celebrities in an accessible way [20]. The fact that privacy is such a foundation for micro-celebrity coincides with the argument in Bauman and Lyon's [21] analysis of social media that they emphasize the fluid character of today's surveillance practices and that privacy is violated by consent. It is possible to consider the relationship between micro-celebrity and privacy within Han's [9] conceptualization of the "exhibitionist society." The characteristics of the exhibitionist society are that each subject is "its advertising object," everything is measured by exhibition value, and everything is turned out, exposed, bared, stripped, and exposed [9]. On the other hand, in the context of fluid surveillance, where the characteristics of panopticism have disappeared, Bauman and Lyon assert that today's prisoners, unlike the prisoners in the panopticon, violate their privacy voluntarily via social media [21]. In the case of a YouTuber, this "consent violation" gains an exchange value and turns into an income-generating activity. On the other hand, the concept of "subcultural micro-celebrity" is suggested to define the concept and practices of vloggers called "micro-celebrity" [11]. In this framework, YouTube, which is increasingly commercialized, creates a culture that affects the individual representation of vloggers [11]. Hence, the internet makes its subculture, and simulative labor composes an essential pillar in this formation.

Media and popular culture are essential in disseminating myths and discourses about the positive aspects of careers shaped online [22]. Turned into a luxury career option, being a YouTuber offers many people a space of freedom with advantages, such as the comfort of working at home, the absence of long working hours, or the opportunity to work without being tied to an employer [23]. Internet celebrities also spread several myths about their existence and careers by "constructing their work as a mixture of pleasure, authentic self-expression, and autonomy." This situation allows them to hide the negative features of creative labor and create images with the quality of "model subject" [22]. Indeed, some scholars argue that YouTube creators are alienated from their jobs because of their exploitation by YouTube. For instance, tools, such as cameras, sound recorders, and computers, used by content creators are not provided by YouTube. Although creators can make videos voluntarily without coercion, there is no guarantee that many viewers will watch every video. Indeed, the fact that only a few viewers watch many YouTube channels causes content

creators to be unable to invite advertisers and not earn income through their videos [2]. Some approaches also emphasize the gap between the idealization of the social media entrepreneurship career and the precarious labor in the digital economy [22]. For example, a study revealed that experiencing unpredictable working conditions, platformed creative workers follow strategies to increase their likes, views, favorites, and shares to eliminate the threat of being invisible [14]. Although contradicting the fact that YouTube facilitates collaboration between other creators, content creators are also alienated from other people. Since the spirit of capitalism is based on individual competition, cooperation between content producers is far from the intention of building class solidarity [2].

2.2 A new form of women entrepreneurship and labor: beauty vlogging

Women's entrepreneurship has historically been considered a remedy for the increasing feminization of poverty and unemployment, with a gender-sensitive development perspective. Since the 1980s, women's entrepreneurship has started to be promoted by organizations, such as the World Bank, the International Monetary Fund, and the European Union, as a primary means of combating women's poverty and unemployment. In addition, women's entrepreneurship has become the focus of attention around the world, as it has the potential to enable women to overcome patriarchal barriers and participate in economic life [24]. Instead of being in paid employment, women's entrepreneurship activities are considered a more accessible goal in promoting gender equality [25]. In developing countries, there is a social structure, where society does not readily accept the role of women as family supporters due to the gender roles that are sometimes profoundly embraced even by women themselves. Although some women can become entrepreneurs by combating these factors that hinder their entrepreneurial activities, they are still expected to fulfill their household obligations, creating a severe work–family conflict [26]. Therefore, policies encouraging entrepreneurship are the most effective means of preventing women's unemployment and poverty in developing countries [27].

Women's entrepreneurship activities, shaped within the framework of today's internet world through practices, such as being YouTubers or influencers, have differed considerably from the origin of women's entrepreneurship. This new type of female entrepreneurship is based on the integration of women into virtual entrepreneurship, which provides the opportunity to get income. Like other internet celebrities, beauty vloggers have become part of virtual culture and entrepreneurs [17].

Women vloggers' activities are highly embedded in the visual internet culture. In analyzing the role of visuality in capitalism and gender in virtual culture, it may be appropriate to focus on "seeing" and "being seen" as starting points. In this context, Han [9], who speaks of "the compulsion for display that hands everything over to visibility," says that "value accrues only insofar as objects are seen." By associating his analysis of being seen with capitalism and Marx's theory of value, he constructs the concept of "exhibition value," which he describes as peculiar to the most advanced level of capitalism. Han associates the role of social media in this framework with Facebook. Accordingly, the age of Facebook reduces the human face, characterized by its exhibition value, to a "face." It is in question that the value of the exhibition requires beauty and vigor and is overly identified with them [9].

In the famous work of John Berger [28] entitled "Ways of Seeing," the basic assumptions about "seeing" and "being seen" are shaped by their relation to women in the patriarchal system:

> *"A woman must continually watch herself. Her image of herself almost continually accompanies her. ...From earliest childhood, she has been taught and persuaded to survey herself continually. ...She has to survey everything she is and everything she does because how she appears to others, and ultimately how she appears to men, is of crucial importance for what is normally thought of as the success of her life... Men act and women appear" [28].*

Today, vlogging within the framework of the dynamics of entrepreneurship of the self is affirmed. This reality refers to all social media, encompassing YouTube [15]. One of the fields of activity of vloggers and YouTube phenomena is the female body and beauty culture, which are crucial elements of consumer society. Famous for their vlogs, which include many practical themes, such as makeup, fashion, healthy life, and sports, female beauty phenomena, have become icons of virtual popular culture by reaching many followers.[1] Many brands have started working with YouTube celebrities to reach a fragmented audience [30]. The lifestyle they represent, which includes entrepreneurship, recognition, and influencing, has a feature desired by the followers. Moreover, some researchers have found that the popularity of beauty bloggers increased the demand for the cosmetic products they use in their videos [10, 17, 31].

The attempts of content producers to aestheticize the female body on virtual platforms have been interpreted by some feminists in the context of reproducing the roles imposed on women by patriarchal capitalism. One of these arguments is that YouTube supports hegemonic femininity forms reproduced by beauty vloggers with social and cultural capital. According to this approach, the YouTube algorithm rewards old teenage magazine culture content, such as consumption, beauty, fashion, friendship, or boyfriends [32]. This critical view coincides with second-wave feminism's analysis of the female body. However, discussions within feminism have risen, questioning the allegation that beauty phenomena contribute to reproducing patriarchal values. Third and fourth-wave feminism discusses that the capacity to make decisions about one's body, sometimes including bodily beautification, could be functional regarding women's liberation. In this context, arguments have risen that the videos of beauty vloggers incidentally combine feminism and beauty practices to create an alternative critical feminist language and that women can resist patriarchal pressures by using cosmetics [33].

Conceptualizing the labor processes based on the fact that beauty YouTubers' activities create value is crucial for vlogger research from a labor perspective. In the videos of beauty vloggers, first of all, the existence of esthetic labor and, in some cases, emotional labor is noticed. In addition, scholars made contributions to the literature with concepts, such as "visibility labor," "aspirational labor" [17], "hidden labor" [34, 35], and "creative labor" [14]. The activities of beauty vloggers should also be considered entrepreneurial labor [36]. Within the framework of this research, the concept of simulative labor, built on Baudrillard's simulation concept, suggested making sense of the effort exerted by YouTube's beauty phenomena. Simulation or hyperreal, defined by Baudrillard [7] as "the generation by models of a real without origin or reality," means "the product of an irradiating synthesis of combinatory models in a hyperspace without atmosphere" and now replaces reality. According to him, a simulation era has emerged with humanity's disconnection from reality. At this age,

[1] Contrary to the popular wisdom that beauty vloggers usually consist of young people, there are many beauty vloggers over sixty [29].

> *"Never again will the real have to be produced. ...A hyperreal henceforth sheltered from the imaginary, and any distinction between the real and the imaginary, leaving room only for the orbital recurrence of models and the simulated generation of difference" [7].*

As seen, the most crucial function of simulation or hyperreal is to eliminate the difference between the real and the imaginary [7]. This claim is based on the simulative labor that structures YouTube videos of beauty phenomena. The simulative labor process predicates eliminating the meaning of reality by creating simulations.

The phenomenon of prosumption is also an essential component in the content produced by beauty vloggers. Putting firstly forward, Toffler [36] argued that in today's capitalism, consumption and production merge, or the boundaries between the two become blurred. "Third wave civilization begins to heal the historic breach between producer and consumer, giving rise to the 'prosumer economics' of tomorrow" [36]. Ritzer and Rey [37], making a contemporary analysis of the relationship of prosumption with the internet, argue that it is not possible to separate production and consumption in the world of exchange relations intensified by the internet, and they state that the phenomenon of prosumption increasingly fits into today's postmodern era. Indeed, many social media platforms, such as YouTube, Google+, Facebook, Twitter, and WhatsApp, are based on user-generated prosumption activities [38]. There are assertions that multilayered identities created by prosumption activities encourage the formation of participatory culture in online communities. Prosumer capitalism reveals that sharing private life with others through prosumption activities in online communities has become prevalent [38]. The existence of a new virtual culture, in which prosumption, an essential activity of content producers, supports the consumption society, is in line with Castells' [1] argument that the behavioral practices of internet users create an internet culture. Besides prosumption, social media is "in relation to the blurring of leisure and labor time (play labor)" [39]. The tendency for unpaid labor to become commodity producers in the field of cultural consumption has gained strength with the rise of the internet and social media. Thus, historically, the trend toward the erosion of dualities, such as play and labor, working time and leisure, production and consumption, and factory and home, has been strengthened [39]. The following chapters will analyze how prosumption builds a female identity in the simulation created by micro-celebrities, which are beauty phenomena in today's internet culture.

3. Field research

3.1 Methodology

Within the scope of the research, a digital ethnographic perspective was adopted. Used in the research of digital tools and the new spaces created by them, it provides rich data in many disciplines [40]. Covering different types, such as "virtual ethnography, cyberspace ethnography, ethnography of new media, online ethnography, and social media/new media ethnography," allows the analysis of social problems in the digital field [41]. Because they are among the beauty YouTubers with the highest number of subscribers in Turkey [42], the five most viewed YouTube videos in which Duygu Özaslan and Danla Bilic show makeup applications were selected as the research sample. The reason for choosing the most viewed videos is to analyze which themes the viewers are mainly influenced by. Videos of both phenomena include

content about their daily lives, wedding preparations, travels, or answering questions about their private lives. However, these videos are about the micro-celebrity experiences of Duygu Özaslan and Danla Bilic, who emerged as beauty vloggers and turned into phenomena after their videos became very popular and are beyond the scope of our topic. Since the main problem of the research is the construction of the prosumer female identity through simulative labor, the videos of the mentioned vloggers' makeup applications were included in the scope of the study. The research's limitation is that the vloggers could not be interviewed.

In order to collect data within the framework of the qualitative research method, the following videos of the two phenomena were watched and subjected to content analysis: "We changed our makeup bags with Danla Bilic"[2] [43], "Instagram makeup | American style makeup"[3] [44], "I try the cheapest products-makeup with recommended affordable products"[4] [45], "I did makeup with techniques I hate—the thickest makeup I have ever done"[5] [46], and "My daily makeup"[6] [47] on Duygu Özaslan's YouTube channel; "The makeup of the girl who became popular in a short time"[7] [48], "The makeup themed 'I did not collapse, but I am not surviving'"[8] [49], "Yeditepe University[9] 50% scholarship girl makeup"[10] [50], "The makeup of a girl who becomes a DJ when she becomes a phenomenon"[11] [51], and "The makeup of the high school girl who says 'I applied only mascara' to her teacher"[12] [52] on Danla Bilic's YouTube channel. YouTube's videos of famous beauty celebrities feature themes, such as get ready with me, outfit of the day, monthly favorite products, nighttime beauty routines, and makeup tutorials [30]. As is seen, unlike Danla Bilic, Duygu Özaslan's videos are more similar to these themes.

3.2 Findings and discussion

3.2.1 Simulative icons from "The lovebird in the Amazon Jungle" to the makeup of a girl who becomes a DJ when she becomes a phenomenon"

Although the main finding is that Duygu Özaslan and Danla Bilic created a prosumer female simulation by simulative labor in their videos, the research revealed that the hyperreality created by both phenomena had different aspects from each other. In this context, Duygu Özaslan exhibits a "beauty and makeup guru" attitude in her videos, at a level of hegemonizing with technical terms and even the old series of many brands. Thus, she forms a relationship between the choice of making up and female subjectivity. The statements, "*makeup and makeup style is a completely personal preference; what you choose is very subjective*" and "*what you like or dislike is unique to*

[2] 33 minutes and 35 seconds long, uploaded on July 4, 2019, viewed 7,431,473 times.

[3] 12 minutes 36 seconds long, uploaded on August 7, 2016, viewed 4,053,477 times.

[4] 19 minutes and 9 seconds long, uploaded on March 15, 2019, viewed 3,034,410 times.

[5] 19 minutes 20 seconds long, uploaded on March 19, 2019, viewed 2,798,326 times.

[6] 10 minutes and 26 seconds long, uploaded on January 15, 2016, viewed 2,724,555 times.

[7] 20 minutes and 31 seconds long, uploaded on July 14, 2017, viewed 11,245,647 times.

[8] 29 minutes 8 seconds long, uploaded on July 14, 2019, viewed 7,405,954 times.

[9] Yeditepe University is one of the private universities in Istanbul, Turkey.

[10] 10 minutes long, uploaded on November 11, 2016, viewed 6418,032 times.

[11] 16 minutes and 21 seconds long, uploaded on November 11, 2016, viewed 6418.032 times.

[12] 18 minutes and 45 seconds uploaded on May 12, 2017, viewed 5,832,983 times.

you," remind third- and fourth-wave feminism's assumption that deciding on physical beauty is not independent of women's liberation.

Danla Bilic, unlike Duygu Özaslan, defines the makeup styles she applies in her videos as designed specifically for female identities ranging from "female student of the fashion design department" to "sneaky girlfriend," "club girl," to "girl who becomes a DJ when she becomes a phenomenon." She builds an identity of a woman who sets in ways, does not care, is free, sometimes even contentious, inclined to compete, has fun, and often laughs. Besides revealing her privacy, she does not hesitate to share the exciting and funny events she experiences daily with her followers. On the other hand, contrary to what was expected, she interestingly subordinates her makeup applications in her videos. What stands out in Bilic's videos is the "girl simulation" she creates instead of being a master of makeup. Although the fact that she uses the word "girl" rather than "woman" may seem that she addresses young women more, what lies in the subtext of this discourse is Bilic's lack of awareness of femininity. Thus, it is noticed that the word "girl" is often mentioned in the videos' titles of the well-known phenomenon, as mentioned above.

The fact that Danla Bilic's simulativity goes beyond makeup is also evident in choosing how to use her name. Bilic, originally Damla Neslihan Aktepe, chose the name she would use on YouTube as "Danla," as she constantly wrote it wrong. Furthermore, she explained that her surname was based on Slaven Bilic, one of the former coaches of the Beşiktaş.[13] In addition, the pop music singer Ece Seçkin, whom she hosted in one of her videos, called Danla Bilic "Daniella," and Bilic's expressions, "*I was born in Kütahya*[14] *and being born in Kütahya as a Russian is hard. I was born knowing Russian and crying in Russian," suggest that she creates "the desired 'other' woman simulation not belonging to this land*." The fact that the number of subscribers of Duygu Özaslan's YouTube channel is 1.42 million, while Danla Bilic's is 2.9 million, shows that these hyperrealities created by Bilic are attracted the attention of a wider audience.

The most outstanding common trait of both phenomena's vlogs is the creation of hyper-realities about different images of women, in conjunction with YouTube's feature of providing people with a way to build identities, as discussed in the theoretical framework. The first video on the YouTube channel that made Danla Bilic famous, titled "Yeditepe University 50% Scholarship Girl Makeup," is one of the examples of this argument. The content produced in this video builds the "girl from the Yeditepe University" simulation explained by Bilic:

> *"She even goes to 9 a.m. class in heels, wears full makeup… She is the type of girl I envy but can never be. She is very well-groomed and beautiful. If a girl studies at Yeditepe, her hair must be platinum for at least 1–1.5 years during her education period. It is like a rule. I used platinum hair color for 1.5 years in 2013, in the same way as well."*

This simulation built in this content is not limited to makeup application. However, it is strengthened by Danla Bilic's wearing a blond wig at the end of the video to embody her assertion: "*Now, if you will excuse me, I want to change my hair color*."

While producing content focusing more on makeup techniques and applications, Duygu Özaslan also creates simulations that shape different woman's identities. For example, in one of her videos, she makes herself look like "a love bird in the Amazon

[13] Beşiktaş is one of Turkey's three major football teams.

[14] Kütahya having a conservative social structure, is a small city in the inner west of Turkey.

jungle" with her eye makeup in vivid and bright green tones. In another video, applying American-style/Instagram makeup, she gives the clues of the "American Instagram phenomenon woman" simulation she will create with the following expressions: "*I was inspired by those accounts of the American vloggers we see on Instagram, love and watch a lot, while I was doing this makeup*." These words reveal a western-oriented approach to the notion of beauty, reflecting the internet culture's hegemonic structure. Besides, while explaining how much the preferences of making up vary at the international level, Özaslan makes us think about how she feels alienated in the virtual web universe:

> *"(In this video), I tried something that did not fit my style, was very different for me, and I felt very alienated too. I could not use this makeup daily. This makeup is not something I can do, and I do not prefer it. My face and eyelids have incredible density because this makeup changes masks and shades too much*."

That is, the necessity of exhibiting, in addition to exploiting the visible, eliminates the faces of individuals [9].

3.2.2 The dilemma between specialization and non-specialization: "There is nothing wrong with this table! Everything is right when you sit here! You are the most perfect!"

One of the exciting findings of the research is that, contrary to expectations, the two beauty phenomena do not have a distinctive teaching style about makeup; at least, teaching or technique does not compose a common theme in the contents. In this sense, in Özaslan and Bilic's videos, there is a tension between "specialization" and "non-specialization" regarding makeup. The level of tension changes in the videos of both phenomena. While Duygu Özaslan's demeanor manifests traces of more intense knowledge of makeup techniques, in Danla Bilic's videos, themes of self-focused small talk that reproduce her micro-famousness come to the fore. Therefore, it is possible to deduce that Özaslan's contents are in some measure labor-intensive and Bilic's are more "spectacular."

However, both phenomena sometimes exhibit a "makeup guru" attitude. The argument of specialization in video contents is revealed in the example of Duygu Özaslan, who explains in detail which makeup product she applies and why and uses technical terms, such as "corrector," "pigmentation," "cold color," "silicone base," "sweeping powder," and "baking." In the case of Danla Bilic, although makeup applications lag a bit, she creates a "makeup artist" simulation in some of her statements: "*I am a freestyle makeup artist. I say let us do some eye makeup. I am very good at this. I am pretty good.*" Bilic's statement that she is "pretty good" shows how hyperreality has replaced reality. In the video where Ece Seçkin is a guest, Bilic's "wise" answer after Seçkin consults Bilic about what color eye makeup she should wear reinforces the "makeup guru" simulation: "*Undertone, overtone, red, pink....*"

Two videos subjected to content analysis are almost like a "prosumption challenge." In the video titled "The makeup of the girl who became popular in a short time," where Danla Bilic hosted the pop singer Ece Seçkin, the two women are implicitly triggered by their humorous quarrels while wearing makeup. Makeup materials, masterliness, or the quality of makeup products reproduce the competition between women. Similarly, in the video titled "We changed our makeup bags with Danla Bilic," in which Bilic was a guest on Özaslan's channel, two women changed their makeup bags. They used each other's makeup products, manifesting the exchange of their

identities and simulations. They challenge each other in this video over how they are unfamiliar with or how they can make up with a small number of cosmetics. Here, it is seen that the prosumer woman identity created by simulative labor has a character that reproduces the competition between women.

On the other hand, the two phenomena sometimes suggest that they are experts in the field of makeup by showing their creativity by changing the usage areas of makeup materials or by violating the rules on applying makeup. This allegation is seen in Bilic's "*Take that blush and please use it as an eyeshadow, okay?*" expression. In another video, she figured that she has been using the foundation in a way since she bought it, which various makeup vloggers or cosmetics department employees advised her to "never use like that."

In the case of Bilic, non-specialization almost reaches the level of being proud of self-confidence, ignorance, and lack of technical knowledge, as is seen in her following statement: "*I love things that I have no idea about*." An example of the extra regular application of makeup techniques is ascended in Bilic's expressions challenging the criticisms against her on social media. Narrating that a user on Twitter asked why she enlarged her lips up to her nose with a lip liner on Twitter, the phenomenon says,

"*I do. I enlarge; I love it, I enlarge, it is that simple*" and "*My face is mine, the highlighter is mine, the contour is mine. I do whatever I want*."

Similarly, in the analyzed videos of Duygu Özaslan, the main conclusion is that she prefers "non-specialization" and challenges professional knowledge by lack of specialization or incompetence. Her expression, "*I will try to do it like a makeup artist now*," in one of her videos means that she admits to not being a professional makeup artist. Moreover, Özaslan sometimes confesses her minor makeup mistakes in her videos. In parallel with these findings, according to research conducted in China, almost all of the beauty vloggers interviewed were amateur-originated, and the desire to "share beauty skills with sisters" was the main point that started their vlogging activities. However, these amateur vloggers have unexpectedly turned into viral figures on social media [17]. This reality coincides with the participatory aspect of integrating social actors in today's consumer society, contrary to Weber's charismatic authority conceptualized through characterizing an individual's personality [53].

3.2.3 The death of the sisterhood: "I took an oath in my first video that I will be the end of them all"

Sisterhood has taken its place in feminist literature and the movement's history as a critical concept that will unite all women and enable them to fight against patriarchy. Bell Hooks, in her work emphasizing the importance of sisterhood, deals with the fact that the meaning of sisterhood has lost its deserved place in the feminist movement over time and the threats and risks posed by this fact:

> *"The vision of sisterhood that had been the movement's rallying cry seemed to many women to no longer matter. Political solidarity between women, which had been the force putting in place positive change, has been and is now consistently undermined and threatened. Consequently, we need a renewed commitment to political solidarity between women as we were when the contemporary feminist movement first began" [54].*

One of the most critical elements that threaten sisterhood is the creation of competition among women, which is a patriarchal strategy. By sowing the seeds of hostility between women, competition deprives the victims of the patriarchal system

of a common ground of struggle. This reality is noticed explicitly or implicitly in Danla Bilic's videos. For example, in her video where she hosted Ece Seçkin, Bilic humorously and sarcastically states that she has more advanced color knowledge than Seçkin, while graciously saying that she will not withhold her mastery of colors from her. Thus, she reproduces the hierarchy between women and the subtle ways of prevailing in the competition with her followers. Similarly, in Bilic's different videos, the scale between women is reproduced in a way that erodes sisterhood. In the video where she conveys her makeup tactics to high school girls at a level their teachers cannot notice, she has almost turned into a maternal or "big sister-style" authority figure:

> *"I brought this for my high school princesses with no skin problems. We apply this lipstick so that it should be a permanent lipstick and should never come off when your teacher tells you to take it off. I call out to high school girls: Never, ever stop yourself from dying your hair, applying your lipstick, and drawing your eyeliner."*

Similarly, a study on a famous beauty phenomenon named Zoe Sugg revealed that the vlogger adopted a kind of "big sister" attitude in her videos [55]. However, although Bilic's video has an older sister style, this is based on the construction of hierarchic relations, rather than a feminist sisterhood manner. There are examples of the death of the sisterhood in Danla Bilic's cynicism, which she adopted and almost turned into a style in her videos titled "Yeditepe University 50% scholarship girl makeup" and "The girl who became a DJ after becoming a phenomenon." In the first video, she states that the female students at Yeditepe University hide their demand for a trendy and affordable cosmetics brand. Besides, she portrays the phenomenon-DJ type she criticizes in the second video with witty theatricality.

In Bilic's videos, some discourses that abolish the sisterhood turn into hostility toward their fellows beyond the competition between women: "*Some YouTubers used to put on this foundation and appear before the camera as if they were wearing no makeup. Danla Bilic does not fall for a trick. I have an oath in my first video that I will finish them all.*" On the other hand, some of Bilic's expressions that destroyed sisterhood goes beyond defense against negative criticism against her on Twitter and turn into a counter-attack: "*They are trying to smear campaign against Danla Bilic. The funny thing is that the girls who do these are not even bloggers. They are 'Kezos'.*[15] *Kezos, who think they are bloggers, are trying to defame me. You know what? I will eat them alive.*"

The death of the sisterhood, which is one of the most important findings of the research, coincides with the creation of a hyperreality rather than the accurate means of struggle in the prosumption activities fictionalized on YouTube and the lack of conditions that will provide a basis for rational resistance practices and prevents women's liberation. Indeed, according to Baudrillard [56], liberation is nothing but a simulation in the "post-orgy state" of our age. Under these conditions, women must be competent to have a say over their bodies and deal with beauty practices. However, for women's freedom to be realized, it is essential to stop being enchanted by icons, perhaps to get rid of the enchantment in the "disenchanted world" that Ritzer [57] mentions, and turn into iconoclast sisters.

> *"Significantly, sisterhood could never have been possible across the boundaries of race and class if individual women had not been willing to divest of their power to*

[15] "Kezo" is an abbreviation of "Kezban," a rural-originated female name in Turkish used as slang to define rural-originated girls in cities.

> *dominate and exploit subordinated groups of women. As long as women are using class or race power to dominate other women, feminist sisterhood cannot be fully realized" [54].*

3.2.4 Enjoying pleasure and iconization beyond commodities: "I have the quality, I have the beauty."

In the videos analyzed, there is inevitably the fact of "commodity fetishism" based on the consumer products used during makeup applications, which Marx conceptualized with the claim that consumer products have a unique autonomous power in the capitalist system. Hence, makeup products' brand information is conveyed to the audience by approaching them with the camera before they are used in the videos. At this point, the exaggeration of "signs," one of the basic concepts of Baudrillard's [58] consumption theory, and the reproduction of the "sign value comes into question.

Parallel to the reality of commodity fetishism, the videos provided findings consistent with Baudrillard's analysis of societies of abundance and waste. For example, Bilic's friend can, a guest in one of her videos, says that Bilic does her clothing shopping without trying on the products, and if the clothes she buys do not fit her body, they "*rot away at home*." In another video, Bilic said she bought a costly cosmetic product on a foreign trip without checking the price: "*Then I looked at my credit card. It cost 700 dollars!*." In the video titled "Yeditepe University 50% scholarship girl makeup," she expressed: "*Some people are angry with me. They say 'you use costly products.' But you will see soon, I will not use this (expensive product).*" Although it can be thought that she criticizes the class inequalities embedded in the consumption of products, it is revealed in her video titled "The makeup of the high school girl who says 'I applied only mascara' to her teacher," that this is a strategic move: "*Maybe you will say, 'Danla, that foundation is costly. We are still in high school.' Then you will not eat or drink something (to save money to buy the foundation). Quality is never a coincidence.*" Indeed, the "Yeditepe University 50% scholarship girl makeup" video is the first on Bilic's YouTube channel, and it is possible that she aimed at increasing the number of subscribers of her channel (including the relatively low-income audience) with the promise of using affordable makeup products. Similarly, according to research conducted in Indonesia, beauty vloggers lead college students to waste, and watching beauty vlogs often increases the tendency to consume beauty products. Beauty vloggers establish hegemony on students with strategies, such as providing information about cosmetic products and their use, gaining confidence, increasing communication, and updating information about beauty products [59].

Similarly, it is possible to notice the wastage theme in Duygu Özaslan's videos. In the video where Özaslan applies affordable makeup products, she proves her wasteful consumerism behavior by showing a long shopping slip of cheap makeup products she bought due to her lack of knowledge about the product's quality. For instance, she shared her experience with a makeup product she did not like with the following expressions: "*I gave them all to someone.*" Furthermore, she advises her followers to use the products abundantly when applying makeup, saying, "*you should not use your hands with cowardice.*"

All these analyses coincide with Baudrillard's [58] definition of the wastefulness inherent in today's consumer society with "*throwaway society*" or "*garbage-can sociology*." He exemplifies the intrinsic nature of wastefulness in a consumer society with the advertising slogan, "*Smash up your car; the insurance will do the rest!*" [58] parallels the videos' discourses and the two vloggers' behaviors. Content similar to these analyzes is produced

in Duygu Özaslan's video titled "My daily makeup," in which she heralds that she will share the makeup products she uses most every month with her followers. In this video, her statement that she changes her blush every day is in line with Bauman's comments on the fluid, uncertain, variable structure of today's consumer society. The condition of being a good consumer is not to be tied to any consumer product [60]. Indeed, "*consumer goods have memento mori written all over them, even if with an invisible ink*" [60].

Despite these explanations, the most original finding of the research is that although commodity fetishism and wasteful consumerism are recommended in Danla Bilic's videos, these elements do not reach the level of the leitmotif of the videos. For example, Bilic says that the foundation she recommends to high school girls is "*one of the most amazing, water-like, most useless foundations in the world.*" Besides, she shares the secrets of creating simulations with her audience through the following statements: "*If you want to do an extremely natural makeup, if you want your teachers not to understand that you are wearing makeup, you can use this foundation.*" As is seen, the opposition of commodity fetishism is produced, and both phenomena can even make harsh criticisms of several makeup products, such as "overgross."

Based on the previous analyses, it is apparent that an "iconization" goes beyond commodities and prosumption activities, especially in Danla Bilic's videos. In the content produced by her, followers are not taught to make up, and makeup is a side element; it can be argued that her viewers follow Bilic as an icon rather than a makeup practice. As exemplified by the phrase "*I have the quality, I have the beauty, the honor, the dignity, it is all in me…*," the well-known phenomenon is positioned beyond the commodities by blessing herself. Indeed, through beauty vloggers' videos, followers often witness the transformation of the physical self. The vloggers, appearing without makeup at the videos' beginnings, transform into whom they want to be that day by making up during the video. As a result, although beauty vloggers have purposes such as teaching new makeup techniques and spreading up-to-date information about products through their videos, mainly vloggers' privacy sharing and self-representation practices come to the fore [4]. Hence, Bilic creates a simulation over prosumption. It can be thought that it made her a phenomenon. She never tolerates discourses and comments that she thinks may undermine her iconography. This attitude, exemplified in the statement, "*I will highlight more because somebody on Twitter said that I highlight much*," has a more striking dimension in the following expressions:

> *"Well, a crew has sprung up. Why is Danla Bilic famous? Who made her famous? It is none of your business. Whoever did it did it. Whoever loved me loved me. It is none of your business. They are so mad. Honestly, I like it. You know, I like to make people mad!"*

Moreover, Bilic's strong criticism and opposition to DJing offers show that she struggles with potential threats that would erode her iconicity, sometimes with discourses that include signs of aggression:

> *"Let us suppose that a sane venue manager will invite me to his/her place to entertain people and to be an appetizer for them. Think about it. A muckety muck will come. He will sit across from me, just for fun. He will make me open a bottle and send me some crappy drink. He will want me to play this. You know what? I will sit him on top of what is spinning in that DJ booth. I will spin him 70 laps on it. Never mind me again, but if you do not have 60 thousand 70 thousand Turkish liras—I have to share this detail—do not make an offer to be a DJ."*

As a result of all this, Bilic's videos confirming her iconicity turn into a feast where she enjoys being a phenomenon, being an icon, and her show: "*Yes, I am done with my makeup. I am ready for the night. I will do what suits me and make a very nice DJ closing. Now all I ask of you is to turn your headphones up and see how the DJ performs (with laughter).*" Indeed, in many of her videos, even routine dialogs or narratives are surrounded by laughter. It is seen that a happiness simulation is created by laughing even at things that cannot be laughed at. The fact that happiness-oriented attitudes and behaviors are simulative is confirmed by Bilic's having undergone many esthetic operations besides stomach reduction surgery [61]. Similarly, according to a study on social media content producers, content producers emphasize emotions, such as satisfaction and fun. The insistence on emphasizing a positive mood can indicate the emotional effort spent to increase the number of followers by transforming into a loved figure [22].

Although Duygu Özaslan's icon status lags behind Bilic, it is possible to see traces of iconization in Özaslan's videos. For instance, from her following expression in the video titled "My daily makeup," it can be deduced that she considers it uneccentric to share her daily life:

> *"I am in my home clothes; I just got out of the shower, and my hair is terrible, but let us get started. The point of the video is to get ready and get beautiful. In the meantime, I am having breakfast. Let me tell you from the beginning; this video has no interesting makeup. I would leave the house; I would get ready anyway."*

In Özaslan's video titled "I do makeup with techniques I hate—the thickest makeup I have ever done," it is apparent that hate is also a simulation and that she enjoys her iconicity. This statement parallels Bauman and Lyon's [21] argument about social media: "*We submit our rights to privacy for slaughter of our own will. Or perhaps we just consent to the loss of privacy as a reasonable price for the wonders offered in exchange.*"

4. Conclusion

The internet is one of the critical elements that make up the culture of YouTubers today and is organized around a unique structure and value judgments. This culture's new work and labor categories are formed, while visibility and visuality become essential. Women take an active part in this process and turn into new virtual entrepreneurs, and beauty vloggers become prominent figures. On the other hand, in the new virtual world of capitalism, the internet is also an area where women contribute to the reproduction of beauty ideals set up in the patriarchal system. Women's effort as beauty vloggers is based on creating simulations of the ideal female body. Therefore, the concept of simulative labor is proposed in the study. The activities of beauty vloggers should also be considered within the framework of prosumption, as they carry out a production process by wearing makeup while consuming the products. Some academic debates have interpreted the prevalence of female vloggers being occupied with the notion of beauty as women participating in the consumption culture by producing rather than being passive audiences and parties of the consumer society. According to this argument, women's use of self-care and beauty practices through their body perception and reconciliation with their bodies can sometimes create a strategy of resistance against the patriarchal system.

In order to question the claims mentioned above, the videos of Duygu Özaslan and Danla Bilic, the most popular female beauty phenomena with the highest number of followers in Turkey, were subjected to content analysis within the scope of this research. It is aimed to analyze different women identities' construction processes and how relations between women are formed and examine whether makeup videos can contribute to a liberation strategy for women in the context of simulative labor and prosumption relationality. The research findings reveal a tension between specialization and non-specialization regarding makeup techniques, where various simulations of women are created through makeup applications. The most striking finding is that there is a commitment to consumer products rather than a dependency; an implicit or explicit construction of an iconization goes beyond commodities, production, and consumption, sometimes accompanied by attitudes, such as contempt, criticism, and dislike. Although the effect of iconization is more substantial in Bilic's videos, it is apparent that both phenomena enjoy being icons.

These findings make the place of commodity fetishism in the virtual world in today's consumer society open to question. Are the phenomena of today's virtual culture located in a place above prosumption? Do simulations exceed prosumption? Is the concept of a virtual icon rather than a micro-celebrity more helpful in explaining today's YouTubers? These are questions that need to be answered by more extensive research. In addition, conducting research that will determine the followers of beauty vloggers and the comments of the viewers of their videos will make significant contributions to the literature. What is apparent; however, is that strategies based on acquiring competence for physical beauty cannot acquire a form of political struggle for women in a context where the capitalist consumer culture encompasses individuals' ontology and where consumption is encouraged to alienate individuals.

Notes

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Author details

Aslican Kalfa Topates
Faculty of Economics and Administrative Sciences, Department of Labor Economics and Industrial Sciences, Pamukkale University, Denizli, Turkey

*Address all correspondence to: atopates@pau.edu.tr

References

[1] Castells M. The Internet Galaxy-Reflections on the Internet, Business, and Society. 1st ed. Oxford: Oxford University Press; 2001. p. 292. ISBN 0-19-924153-8

[2] Ahmad PM, Hikami I, Zufar BNF, Syahfrullah A. Digital labour: Digital capitalism and the alienation of YouTube content creators. Journal of Asian Social Science Research. 2021;**3**(2):167-184. DOI: 10.15575/jassr.v3i2.44

[3] Cetin BN. Digital prosumer labour as covert labour in the context of Prosumption. Journal of Social Policy Conferences. 2019;**77**:349-382. DOI: 10.26650/jspc.2019.77.0099

[4] Kennedy Ü. Exploring YouTube as a transformative tool in the "the power of MAKEUP!". Movement M/C Journal. 2016;**19**(4):1-4. DOI: 10.5204/mcj.1127

[5] Debord G. The Society of the Spectacle. 1st ed. Berkeley: Bureau of Public Secrets; 2014. p. 150. ISBN 978-0-939682-06-5

[6] Highfield T, Leaver T. A methodology for mapping Instagram hashtags. First Monday. 2015;**20**(1):1-11. DOI: 10.5210/fm.v20i1.5563

[7] Baudrillard J. Simulations. 4th ed. Ann Arbor: The University of Michigan Press; 2006. p. 164. ISBN: 0-472-09521-8

[8] Fuchs C. Social Media-a Critical Introduction. 1st ed. London: SAGE Publications; 2014. p. 293. ISBN 978-1-4462-5730-2

[9] Han B. The Transparency Society. 1st ed. Stanford: Stanford University Press; 2015. p. 58. ISBN 978-0-8047-9460-2

[10] Chen J, Dermawan A. The influence of YouTube beauty vloggers on Indonesian Consumers' purchase intention of local cosmetic products. International Journal of Business and Management. 2020;**15**(5):100-116. DOI: 10.5539/ijbm.v15n5p100

[11] Raun T. Capitalizing intimacy: New subcultural forms of microcelebrity strategies and affective labour on YouTube convergence. The International Journal of Research into New Media Technologies. 2018;**24**(1):99-113. DOI: 10.1177/1354856517736983

[12] Langley P, Leyshon A. Platform capitalism: The intermediation and capitalization of digital economic circulation. Finance and Society. 2017;**3**(1):11-31. DOI: 10.2218/finsoc.v3i1.1936

[13] Homant E, Sender K. Queer immaterial labor in beauty videos by LGBTQ-identified YouTubers. International Journal of Communication. 2019;**13**:5386-5404

[14] Duffy BE, Pinch A, Sannon S, Sawey M. The nested Precarities of creative labor on social media. Social Media + Society. 2021;**7**(2):1-12. DOI: 10.1177/20563051211021368

[15] Arthurs J, Drakopoulou S, Gandini A. Researching YouTube. Convergence. 2018;**24**(1):3-15. DOI: 10.1177/1354856517737222

[16] Özbek B, Sofuoğlu Kılıç N. Current researches in humanities and social sciences. In: Babacan H, Tanrıtanır BC, editors. Current Researches in Humanities and Social Sciences. 1st ed. Montenegro: IVPE Cetinje; 2020. pp. 108-127. ISBN: 978-9949-46-024-2

[17] Guan Z. Chinese beauty bloggers: Amateurs, entrepreneurs, and platform labour. Celebrity Studies. 2021;**12**(2):326-332. DOI: 10.1080/19392397.2020.1737154

[18] Abidin C. Mapping internet celebrity on TikTok: Exploring attention economies and visibility Labours. Cultural Science Journal. 2020;**12**(1):77-103. DOI: 10.5334/csci.140

[19] Mavroudis J. Fame labor: A critical autoethnography of Australian digital influencers. In: Abidin C, Lindsay Brown M, editors. Microcelebrity around the Globe-Approaches to Cultures of Internet Fame. 1st ed. UK: Emerald Publishing Limited; 2019. pp. 83-93. ISBN: 1787567508

[20] Khamis S, Ang L, Welling R. Selfbranding, 'Micro-Celebrity' and the rise of social media influencers. Celebrity Studies. 2016;**8**(2):191-208. DOI: 10.1080/19392397.2016.1218292

[21] Bauman Z, Lyon D. Liquid Surveillance. 1st ed. Cambridge: Polity Press; 2013. p. 158. ISBN: 978-0-7456-6402-6

[22] Duffy BE, Wissinger E. Mythologies of creative work in the social media age: Fun, free, and "just being Me". International Journal of Communication. 2017;**11**:4652-4671. DOI: 1932-8036/20170005

[23] Holmbom M. The YouTuber: A Qualitative Study of popular Content Creators. [Internet]. 2015. Available from: http://umu.diva-portal.org/smash/get/diva2:825044/FULLTEXT01.pdf. [Accessed: November 23, 2022]

[24] Kalfa-Topates A, Topates H, Kidak E. Women's entrepreneurship in the dilemma of empowerment and gender roles. Calisma ve Toplum. 2022;**2**(73):1043-1074. DOI: 10.54752/ct.1061145

[25] Okpara JO, Halkias D, Nwajiuba C, Harkiolakis N, Caracatsanis SM. Challenges Facing Women Entrepreneurs in Nigeria. Management Research Review. 2011;**32**(2):221-235. DOI: 10.1108/01409171111102821

[26] Azmat F. Opportunities or obstacles? Understanding the challenges faced by migrant women entrepreneurs. International Journal of Gender and Entrepreneurship. 2013;**5**(2):198-215. DOI: 10.1108/17566261311328855

[27] De Vita L, Mari M, Poggesi S. Women entrepreneurs in and from developing countries: Evidences from the literature. European Management Journal. 2014;**32**(3):451-460. DOI: 10.1016/j.emj.2013.07.009

[28] Berger J. Ways of Seeing. 1st ed. London: Penguin Books; 1977. p. 165. ISBN: 0 14 021631 6

[29] Bliss M. Under the radar: Older women Youtubers and algorithmic influence. Feminist Media Studies. 2020;**20**(5):745-747. DOI: 10.1080/14680777.2020.1783806

[30] Rasmussen L. Parasocial interaction in the digital age: An examination of relationship building and the effectiveness of YouTube celebrities. The Journal of Social Media in Society. 2018;**7**(1):280-294

[31] Kabadayı ET, Koçak A, Cavdar Aksoy N, Sidar SC. An empirical study about the effect of micro-celebrities on Consumers' purchase intention. International Journal of Society Researches. 2019;**12**:230-261. DOI: 10.26466/opus.583856

[32] Bishop S. Anxiety, panic and self-optimization: Inequalities and the YouTube algorithm. Convergence. 2018;**24**(1):69-84. DOI: 10.1177/1354856517736978

[33] White M. Beauty as an "act of political warfare:" feminist makeup tutorials and masquerades on YouTube. Women's Studies Quarterly. 2018;**46**(1&2):139-156. DOI: 10.1353/wsq.2018.0027

[34] Weinzimmer L. Online and In the Spotlight: A Critical Analysis of The Beauty Vlogger [thesis]. 2018. Retrieved from the University of Minnesota Digital Conservancy. https://hdl.handle.net/11299/201063

[35] DenHerder T. Design and Simulation of PV Super System Using Simulink [Thesis]. San Luis Obispo: California Polytechnic State University; 2006

[36] Toffler A. The Third Wave. 1st ed. New York: William Morrow and Company, Inc.; 1980. p. 544. ISBN: 0-688-03597-3

[37] Ritzer G, Rey PJ. From 'solid' producers and consumers to 'liquid' prosumers. In: Davis M, editor. Liquid Sociology: Metaphor in Zygmunt Bauman's Analysis of Modernity. 1st ed. New York: Routledge Publishing; 2016. pp. 157-176. ISBN: 9781138271647

[38] Lam SS. Multi-layered identities by social media and Prosumption practices in digital and participatory communication. Journal of Digital Media and Interaction. 2019;**2**(3):7-22. DOI: 10.34624/jdmi.v2i3.3747

[39] Fuchs C. Digital Prosumption labour on social Media in the Context of the capitalist regime of time. Time & Society. 2013;**23**(1):97-123. DOI: 10.1177/0961463X13502117

[40] Özbaş Anbarlı Z. Digital ethnography: A method to understand digital space. Global Media Journal TR Edition. 2020;**10**(20):87-113

[41] Kaur-Gill S, Dutta MJ. Digital ethnography. In: Davis CS, Potter RF, editors. The International Encyclopedia of Communication Research Methods. 1st ed. New York: John Wiley&Sons, Inc; 2017. DOI: 10.1002/9781118901731.iecrm0271

[42] Genç M. The Politics of Beauty-YouTube Beauty Community. 1st ed. İstanbul: İletişim Publishing; 2020. p. 144. ISBN-13: 978-975-05-3007-4

[43] https://www.youtube.com/watch?v=6AaUf-fH9SA. [Accessed: September 5, 2022]

[44] https://www.youtube.com/watch?v=UEJKXRairfs. [Accessed: September 5, 2022]

[45] https://www.youtube.com/watch?v=nNLRChadK-o. [Accessed: September 5, 2022]

[46] https://www.youtube.com/watch?v=XmodfmaKJTU. [Accessed: September 5, 2022]

[47] https://www.youtube.com/watch?v=cfhjL6I6WSI. [Accessed: September 5, 2022]

[48] https://www.youtube.com/watch?v=WEGbLuktAZs. [Accessed: September 5, 2022]

[49] https://www.youtube.com/watch?v=YTHFz2hBFZY. [Accessed: September 5, 2022]

[50] https://www.youtube.com/watch?v=7WGCmwIJLus. [Accessed: September 5, 2022]

[51] https://www.youtube.com/watch?v=stC4pMPBWoI. [Accessed: September 5, 2022]

[52] https://www.youtube.com/watch?v=cpVaRagRJBc. [Accessed: September 5, 2022]

[53] Cocker HL, Cronin J. Charismatic authority and the Youtuber: Unpacking the new cults of personality. Marketing Theory. 2017;**17**(4):455-472. DOI: 10.1177/1470593117692022

[54] Hooks B. Feminism Is for Everybody-Passionate Politics. 1st ed. Cambridge: South End Press; 2000. p. 123. ISBN 0-89608-629-1

[55] Berryman R, Kavka M. 'I guess a lot of people see me as a big sister or a Friend': The role of intimacy in the Celebrification of beauty vloggers. Journal of Gender Studies. 2017;**26**(3):307-320. DOI: 10.1080/09589236.2017.1288611

[56] Baudrillard J. The Transparency of Evil-Essays on Extreme Phenomena. 1st ed. London: Verso; 1993. p. 174. ISBN 0-86091-387-2

[57] Ritzer G. Enchanting a Disenchanted World: Revolutionizing the Means of Consumption. 1st ed. London: Pine Forge Press; 1999. p. 258. ISBN: 0-7619-6101-1

[58] Baudrillard J. The Consumer Society-Myths and Structures. 1st ed. London: SAGE Publications; 1998. p. 208. ISBN: 07619 5691 3

[59] Ayuningsih P, Rahman A, Ayuningsih Y. Beauty vloggers Hegemonize student behavior as the beauty vlog viewers and cosmetic consumers. The Journal of Society and Media. 2021;**5**(2):271-284. DOI: 10.26740/jsm.v5n2

[60] Bauman Z. Work, Consumerism, and the New Poor. 2nd ed. New York: Open University Press; 2005. p. 131. ISBN 0335 21598 X (pb) 0335 21599 8(hb)

[61] https://www.ntv.com.tr/galeri/yasam/danla-bilic-bir-yerlerimi-saklamaktan-bunaldigimi-fark-ettim-mide-kucultme-amel,C3w3YWn6HUSjIhR_C4QxZA. [Accessed: August 31, 2022]

Chapter 10

The Role of Mentoring for Women Entrepreneurs

Alison Theaker

Abstract

The number of women entrepreneurs lags significantly behind that of their male counterparts. There have been, and continue to be, government support programmes to encourage women's entrepreneurship. Mentoring is often recommended as particularly relevant to women entrepreneurs. It often forms a part of the programmes aimed at encouraging women to start their own businesses. This aim of this chapter is to examine women entrepreneurs' experience of mentoring and whether it contributed to their success. Research questions cover the identification of elements of successful mentoring for women entrepreneurs and the evaluation of the contribution of mentoring to entrepreneurial success. In-depth interviews were conducted with 24 women entrepreneurs and six of their mentors and analysed to draw out several themes. Whilst most participants expressed the view that mentoring was important, it was only part of the menu of factors that led to success. In addition, the most significant form of mentoring was often asserted to be from peers. This has implications for mentoring programmes that need to include this form of mentoring. The research was carried out in a rural area of the UK with a small sample. However, it provides some important insights.

Keywords: gender, mentoring, entrepreneurship, women entrepreneurs, entrepreneurial success

1. Introduction

Whilst the number of women-owned enterprises has been increasing substantially in recent decades, women still create fewer enterprises than men. Government support programmes often include some form of mentoring. This is often suggested as a way of encouraging women into entrepreneurship as it is flexible, bespoke to the mentee, and provides a role model in the form of a successful woman business owner [1, 2]. Often, the "entrepreneur" is seen as typically male, so women have to manage this expectation which does not fit with their own experience [3, 4]. It has been suggested that women may have different criteria for success for their business than the stereotypical concentration on growth, such as work/life balance or social contribution [5–7].

The literature does not define how important mentoring is for female entrepreneurs, or what influence it may have on entrepreneurial practice. Whilst claims are

made for the importance of mentoring for business success [8–10], the components of successful mentoring have not been determined.

The research aim of this chapter is to examine women entrepreneurs' experience of mentoring and whether it contributed to their success. Research questions cover the identification of elements of successful mentoring for women entrepreneurs and the evaluation of the contribution of mentoring to entrepreneurial success.

By determining the characteristics of the successful mentoring relationship, it is hoped to provide pointers for entrepreneurial support programmes. In addition, evaluating whether mentoring is essential for success can provide further insights into how women entrepreneurs could be supported.

2. The importance of women's entrepreneurship

Economic policy has often emphasised women's entrepreneurship as a solution to underdeveloped areas. As the stereotypical picture of an entrepreneur is male, women also have to deal with the contradiction between their feminine identity and being a business owner [11].

In 2016 the Federation of Small Businesses (FSB) in the UK examined the importance of women's entrepreneurship to the UK economy. The report found that flexibility was a major draw for women in running their own business, as they could continue to be involved in childcare and family life. Whilst women entrepreneurs faced the same challenges as male-led small and medium sized enterprises (SMEs), there were particular areas of difference. For women, mentoring was particularly important to develop self-confidence in their own skills and abilities [12].

Some researchers have suggested that women entrepreneurs in particular benefit from institutional support and that this is vital to their success [8–10]. Institutions set out the "rules of the game" that shape an individual's behaviour and beliefs and it is "essential for female entrepreneurs to gain institutional approval" [13].

3. What is mentoring?

Mentoring has been defined as "a formal learning relationship" where "mentors support and challenge the mentees to recognise their career potential", with the result that "both parties perceive they are learning and gaining from the relationship [14]. Mentors support mentees by providing advice in an empowering way [15]. Mentors may be motivated by the possibility of 'giving back' [16]. Other sources suggest that mentoring offers the opportunity to learn from others' experience who have "been there and done that" [17]. St Jean [18] defines the mentor as a person who "kindly watches over a younger individual".

St Jean [18] sets out nine roles for the mentor. The first four are psychosocial functions. Mentors give reflective feedback, enabling the mentee to identify what they do well and could do better. They may also reassure the mentee to enable them to put things into perspective and relieve stress. Motivation improves the mentee's self-confidence. Finally, being a confidant enables the mentee to use them as a sounding board. The next categories are career-related. Helping the mentee by introducing them to contacts means they can be integrated in the business community. Mentors

may pass on knowledge of management, legal and industry considerations. The mentee may be confronted by the mentor which encourages reflection and problem solving. The role of guide is the final function in this category. The mentor may also act as a role model. This framework was used to measure the most effective elements of the mentor relationship with women entrepreneurs.

Mentoring style is also relevant. This could be facilitative, collaborative or instructive. St Jean and Audet [19] refer to a maieutic or non-directive approach, which is both facilitative and collaborative. This is evidenced by open questioning so that "individuals … become aware of the knowledge within them" [20]. This allows mentees to retain their autonomy. St Jean [18] originally suggested the mentor as an older, experienced person but this seems to contradict that definition.

Women mentors can provide role models for those women who are starting their businesses. The European Commission states that "mentoring programmes would be beneficial for women entrepreneurs", and should use "successful women entrepreneurs as mentors" [21]. This clearly envisages mentors fulfilling the role model function as mentioned by St-Jean [18] above.

Thus the literature suggests mentoring as particularly important for women and recommends a collaborative approach [1, 2, 22, 23]. The role of a female mentor as role model is put forward as a reason why this form of support is important to address the gender imbalance in entrepreneurship [2].

4. Business success

Quantitative measures of business success include external, financial measures such as profit and turnover which are often cited as the main reasons for entrepreneurship. Qualitative measures may be survival, stability, job creation, recognition and personal development [24]. Motivations for starting a business will impact on the criteria the entrepreneur uses to define success. Whilst life events for men and women may be similar, it has been suggested that women may tend to be less focused on profit as a success criterion because they have always been portrayed as nurturers. This may be connected with societal stereotypes [5–7]. It may be that survival would be a better measure of success rather than growth or profit [25]. Other measures can include work-life balance, employee satisfaction, social contribution, goal achievement and effectiveness [26]. This suggests a more nuanced approach to motivation than binary classifications.

5. Are mentoring and success linked?

Whilst mentoring has been used in many programmes for entrepreneurs and in entrepreneurial learning, it is not yet known if there is a link between mentoring and business success. In most studies, there is no evaluation of how mentoring translates into long term success. Mentoring can be "more important than hard work, talent and intelligence" [27]. The "ability to learn on a continuous basis is now viewed as a key determinant of competitive success," and "effective learning for female entrepreneurs is well served through mentoring" [9]. Despite this bold statement, there was no examination of what effect the mentoring experience might have had on the business success of the mentees.

Figure 1.
Conceptual framework.

Learning from mentors was a consistent factor in different models of mentoring [8], to the extent that they suggested that linking to mentors could provide knowledge to avoid failure. There was little examination of the claim that mentoring was linked to the direct success of the business.

In summary, women entrepreneurs may benefit from institutional support and mentoring in order to overcome additional barriers they may experience. Whilst many assertions are made linking mentoring to entrepreneurial success, there is limited evidence to support these claims. The conceptual framework derived from the literature used in this study is as follows (**Figure 1**).

In this simple conceptual framework, the entrepreneur starts their business. Then the experience of mentoring is suggested here to be directly instrumental in the success of the entrepreneurial venture. At this stage, this simplistic model reflects the literature's emphasis on the need for mentoring to achieve success [2, 9].

6. Methodology

Semi-structured in-depth interviews were conducted with a sample of women entrepreneurs. Participants were sourced through some of the local business networks that the author attends, which include the South West Women in Business (SWWIB) and Women in Southern Enterprises (WISE).

As the role of mentoring was considered in relation to business success, this required a definition of what was meant by 'success'. Survival was used as the criterion and was used to identify participants. Survival rates for small businesses vary: different sources suggest 60% fail within three years [28]; 50% fail in first two years [29]; 30% fail within three years [30]; and the FSB [31] reported that one third of small businesses may not reopen after the COVID19 lockdown. Survival for more than three years was used as the criterion for success.

A representative from each of the five FSB [12] categories mentioned above was included. In addition, as the major industries in the location studied are farming, food and drink production and tourism, women entrepreneurs were selected who operated in these areas. Interviews with a sample of mentors were also conducted, found by snowball sampling of participants' own mentors.

Twenty four women entrepreneurs and six mentors were interviewed.

An initial thematic analysis was undertaken. As each theme emerged, a rich picture developed. The three steps suggested by Braun and Clarke [32] were used. First, themes were identified to develop broad topics, then reviewed in relation to the research questions. Lastly themes were named to provide a coherent story. In addition the method devised by Gioia, Corley and Hamilton [33] who set out to bring what they term "qualitative rigor" to the presentation of qualitative, inductive research was used. This starts with informant-centric codes (1st order) and then progresses to researcher-centric concepts (2nd order). The final stage is the devising of aggregate dimensions. In a review of the methods of presenting qualitative research, the so

called "Gioia approach" is suggested as the most suitable where data is collected by interviews [34].

Transcripts were transferred into word files to enable the identification of codes. Codes were then collated into themes, with data tables being drawn up to ensure that relevant data was identified.

7. Findings

An initial review of the data produced a picture of the participants. Ages ranged from 35 to 68, with most (12) of the women being in their 40s. Many (seven) businesses were around three to four years old, the same number had been in business five to ten years, with a few (three) more than 20 years old. One serial entrepreneur had run four businesses during this time, another had taken over a family business and one had run several businesses whilst also doing freelance work. Most were sole traders (15), with several (three) in partnership with their husbands and two who had employed their husbands in their business. A table of participants is provided in Appendix 1.

Several of the participants (four) were in property related businesses, including holiday accommodation and estate agency. Only five made products, including food and drink, and clothing and footwear. The majority had services-based businesses. Several were health related (physiotherapy, fitness training, personal development, hypnotherapy, nutrition, and kinesiology,). Others provided business services (video production and public relations, social media strategy, coaching). A quarter ran multiple businesses.

A variety of sources had been used to access mentoring. Three participants had had the same mentor from a funded programme through Business Information Services (BIP). Free mentoring from the FSB was used by one participant.. Some had used professional associations. A minority had paid for professional mentoring, mostly at a mature stage of their business. Interestingly, peer mentoring was mentioned by the majority of participants.

Snowball sampling accessed six mentors who agreed to be interviewed. Their ages ranged from 44 to 73. Half of these mentored on the free-at-delivery programmes, the others charged for their services. One of the former was the mentor from BIP. Four of the mentors were women and two were men. Details are provided in Appendix B.

Initially, thematic analysis identified six themes: upbringing; motivation to become an entrepreneur; elements of mentoring; gender; rural context; success. Some are included in **Table 1**.

I decided to then use the Gioia et al. [33] method to draw up a data structure (**Table 2**). First order codes were identified and then, second order concepts were devised: early influences, parent occupation, role models, environment, inner qualities, definitions of success, qualities of mentor, sources of mentor, gender of mentor. Overarching aggregate dimensions were: entrepreneurial enablers, entrepreneurial motivation and entrepreneurial support. These themes and dimensions overlapped somewhat with those identified from the initial thematic analysis.

Thematic analysis was also carried out on the mentor data (**Table 3**). Identified themes were: success criteria, mentoring and peer mentoring. Mentors were also asked their opinion on whether they thought mentoring contributed to business success.

Upbringing was a clear influence, as nearly half of the participants had parent entrepreneurs. The childhood environment was also influential; "I was surrounded by

Theme	Sub themes
• Motivation to be entrepreneur	• Never wanted to work for anyone else again • Business meant - Something other than a mother • Time with family • Living in rural area was motivational as surrounded by entrepreneurs • Relative showed what could be done in business
• Elements of mentoring	• Mentors don't tell, help to find out • Professional association specific mentoring • Mentoring vital at start up • Right person gives good advice with no judgement • Look with different eyes • Mentors as guides • Bounce ideas off • Ask questions • Look up to • Golden nuggets • someone who has been there and done it • Somebody to be accountable to • Building confidence • Challenging • Looking at things differently • Giving confidence to take the next step • Empowered
• Success	• Time with family • What is important • Success criteria changed • Connection with people important • Be happy, love what you do • Teach others what you know • Driven by success • Success get out of bed and be excited

Table 1.
Mentees: Thematic analysis.

very successful people … I saw myself as somebody who would do quite well," (E8). Some had found this a negative experience: "At school, the expectations were very low for everyone … I would never have thought I was going to run my own business one day," (E15). "School probably put me off it," (E14). Role models produced positive and negative reactions. "I saw entrepreneurship as a reaction to my mother's role (as a housewife)" (E1). "My aunt was an incredible businesswoman, my motivation to succeed came from her" (E5). 'Entrepreneur 'was regarded as a negative term by some who felt unwilling to identify themselves as such. "I have negative connotations around entrepreneurship which is maybe why I might be hesitant to think of myself as an entrepreneur." (E14). Images of entrepreneurship, particularly in the media, did not fit the women's lived experience.

Many talked about their own qualities when asked about their motivation to start a business. This included self-confidence (E5), wanting to inspire others (E4), self-awareness (E17), being driven by success (E5), being a natural leader (E3) and being adventurous (E14).

1st order concepts	2nd order themes	Aggregate dimensions
• Brought up in 80s • Women in business on TV • Mum homemaker, rebelling against that • School not very motivational • Working class background • Couldn't be unemployed • Raised to be a wife • No expectations to have business at school	• Early influences	• Entrepreneurial enablers
• Parents always ran their own business • Dad was a manufacturer • Family business • Entrepreneurship as reaction to mother's domestic role • Parent business – hard work	• Parent occupation	• Entrepreneurial enablers
• Inspiration from successful female relative • Image of independent business women	• Role models	• Entrepreneurial enablers
• Living in rural area was motivational as surrounded by entrepreneurs • Running business in rural area accepted	• Environment	• Entrepreneurial enablers
• Driven by success • Fantasised about own business • Wanted to have product • Risk taker	• Inner qualities	• Entrepreneurial motivation
• Connection with people important • Happiness • Provide what is needed • Get out of bed and be excited • Inspire others	• Definition of success	• Entrepreneurial motivation
• Look with different eyes • Confidential advice • Knowledge and experience • Mentors don't tell, help to find out • Bounce ideas off • Ask questions • Learn from mistakes • Look up to • Mentors as guides • Information, observation	• Qualities of mentor	• Entrepreneurial support
• Professional association specific mentoring • Peer mentoring • Mother encouragement vital • NEA scheme mentoring	• Sources of mentoring	• Entrepreneurial support
• Gender unimportant • Value from both male and female mentors • Right person gives good advice with no judgement • Men think big • Like mentoring from woman • Complex male female mentor relationship	• Gender of mentor	• Entrepreneurial support

Table 2.
Mentees: data structure using Gioia et al. [33] method.

Themes	Codes
Success criteria	Define their own success criteria A lot want something beyond profit Don't have to make loads of money or burnout In America, not considered success unless had a few failures
Mentoring BUT	Working with an individual Guidance Use own experience See what they can't see Signpost to others Help them do their best Information and advice, listening, empathy Some can't help people grow outside existing paradigm
Peer mentoring	Women good at supporting each other Peer support is the most valuable element Group insights
Contribution of mentoring to success	25% of success is mentoring Some clients' shifts are negligible, some are incredibly successful. Mentoring can be really impactful and accelerate success. More sustained success with mentoring

Table 3.
Mentors: thematic analysis.

Personal circumstances had caused some to start a business: "I needed to go freelance to sustain an income" (E13). For others, tedious work provided the push. "I didn't really want to sit there doing the same thing day in, day out" (E18).

Life changes caused some to set up a business when this had not previously been something they had considered:

> *"I was caught in a Catch-22 situation of not being able to work and not being able to afford childcare. I became an entrepreneur because of necessity, I had no alternative really." (E3)*

> *"It became clear very early on it wasn't going to work having a full time career and wanting to be there for my daughter." (E15)*

External life events have been added to the simple model developed from the literature.

Several definitions of success were mentioned. Some participants did mention quantitative measures such as profit, but more spoke about wanting to have a better work/life balance. Being able to spend time with their family was important to many. Inspiring others and being happy in what they did, so that they would get out of bed feeling excited was a common goal.

The majority of women found mentoring a positive experience, with one considered it was "100% vital" (E16). "Golden nuggets" of advice were valuable. For one participant, mentoring had been a major influence in setting up her business. "An advisor said to me, you can do it. I never expected to be an entrepreneur."(E3). Thus the third aggregate dimension identified was entrepreneurial support.

St Jean's (2012) [18] roles were used when analysing the mentoring relationship viewed by entrepreneurs and mentors. No other functions were evident (see **Table 4**).

Mentor roles	Illustrative quotes
Reflector	They helped me look at things with different eyes (E16) A mentor can help you understand what you have done so you can repeat it (M4)
Reassurance	I remember saying 'I can't do this', and he said, 'yes, you can' (E3) Nurturing (M1) Hand holding (M3)
Motivator	It gave me boundaries and frameworks … someone who would push back on me (E24)
Confidant	They can give you confidential advice (E1)
Contacts	I was encouraged to network (E24) Signposting people to each other (M2),
Information support	The right person gives good advice with no judgement (E1) Giving information (M1)
Challenging	It stretched me and made me look at things I wouldn't have looked at (E19)
Guide	It gave me confidence I was going in the right direction (E22) Sounding board (M1)
Role model	He just knew how to run a business (E20) I've been there, this is how you do it (M5) Sharing your experience of what worked and what didn't (M3).

Table 4.
St Jean [18] mentor roles.

A different note was sounded by one participant who declared that mentoring had been a "waste of time".

> *"I've never really had a Eureka moment. It was not life-changing." (E6).*

The direct relationship between mentoring and success suggested by the literature which was used to develop the original conceptual model does not seem to be borne out here.

Unusually and unexpectedly, several participants referred to getting what they considered mentoring by following influencers online (E4, E9, E16, E23). One mentioned learning from her clients who were successful businesspeople (E5). These mentors would not be aware of any mentoring relationship, which contradicts the literature.

Peer mentoring was regarded as very important.

> *"… they were talking about how peer to peer support was so important and how women support women and … how helpful that can be." (E3)*
> *"(Other business owners were) asking things like, did you realise you could do this or call me if you want to do this. I felt supported. "(E12)*
> *"The value that I get from that is remarkable because it is specific to my business."(E9)*

One of the participants had set up her own peer mentoring network as a result.

> *"People could meet up once a month and talk about their challenges in business and also their personal and emotional challenges, of trying to keep the show on the road facing different challenges from somebody who is going into the office 9 to 5." (E3)*

Mentors also mentioned peer mentoring. "A critical friend is really useful." (M5). They suggested that peers "provide role models for each other..and can offer insights" (M6). Peer mentoring was not referred to in the literature to any great extent.

Mentoring style gave rise to varied opinions amongst mentors. Asking questions, or making a "gentle enquiry" (M5) was a common component. Allowing mentees to develop their own answers was also part of the package. One warned that not all mentoring might be successful. "Some can't help people grow outside the existing paradigm because they don't know anything else."(M4)

Mentees and mentors disagreed about whether it was necessary for women to be mentored by other women: "I have had mentoring from my father in law and my female friends" (E7; "I have mostly had mentoring from men, gender wasn't important" (E2); "Successful women are happy to give back" (M2); "Women initially feel happier talking to other women" (M3); but "Not all women want another woman to succeed" (M4).

8. Discussion

Interviewing women entrepreneurs about how their experience of mentoring contributed to the success of their business, several themes emerged. Early influences, such as their parent's occupation, powerful role models and where they had grown up all played a part. They were motivated by their own inner qualities and how they defined success. Mentoring provided entrepreneurial support.

Positive female role models, as suggested by the FSB [12] study were important ("Images of independent career women on TV" E1). However, negative role models led to women being determined to follow a different route ("I wanted to be something other than a mother" E6).

Mentors were asked if mentoring contributed to success. One (M1) estimated mentoring contributed about 25% to success. Another felt mentoring could be "really impactful" (M4). Several entrepreneurs agreed, calling mentoring "vital" (E16). Some felt they may not have started their business (E3, E17) or not have been as successful without it (E20). One woman said, "It was critical in giving me the confidence to keep going." (E17).

Others were less definite , feeling "Mentoring didn't create the business, it just got it off the ground quicker" (E1). Only one felt that none of the mentoring was valuable. ("Mentoring was not successful. It was not realistic" E6). So the declarations in the literature about the necessity of mentoring for women entrepreneurs were not completely borne out [22, 35]. Rather than the main element which leads to business success, it is just one of several factors.

Literature suggested a non-directive maieutic style was the most effective [19], but this was contradicted by entrepreneurs who often valued more directive advice: "It's about practical help" (E2); "I wanted practical things to do" (E12).

Peer mentoring was not suggested as being particularly significant by the literature, but most participants mentioned its importance. Support and advice from someone who had been through the same journey was highly regarded. "The value that I get from that is remarkable because it is specific to my business" (E9). A mentor who is in the same business and who may just be slightly ahead in their business journey appears to be more impactful than an expert. The latter may be too far advanced to provide specific insights for the mentee. It was found that artisan entrepreneurs trading on Etsy (an American e-commerce company focused on handmade

or vintage items and craft supplies) regarded peer support from others in the same industry as extremely valuable [36]. Thus it is important to add this to the consideration of the characteristics of mentoring.

The literature emphasised that a mentoring relationship should be agreed explicitly by both parties [9, 14, 15, 18]. This was not always the case for the respondents to this study. Online mentors were more aspirational than simply being peers and tended to be those who had achieved great success Classifying successful clients almost as 'stealth' mentors was not mentioned at all. Some research found that artisan entrepreneurs had received online advice from a peer that they had never met [37], but not from such successful sources.

Mentors referred to their satisfaction at being able to help ("it lights me up, working with small businesses" (M4)) and regarded a "critical friend" as useful (M4). One said that "women prefer to be mentored" (M3) suggesting they were less confident than men and they appreciated "someone who has been there … helping them get the best out of themselves" (M3). Growing women's confidence was also mentioned (M1). All mentors felt that giving advice was an important part of their role. This agrees with the literature [9, 14, 15, 18].

To summarise, there was some agreement with the literature suggesting that women entrepreneurs benefit from mentoring [12], although it was not as causal as implied by some studies [2, 9, 27] but just part of the menu. Whilst some valued experienced mentors which confirm previous research [18], many mentioned wanting more practical advice, rather than the maieutic style suggested by St Jean and Audet [19]. Peer mentoring as suggested by Kuhn and Galloway [36] was definitely valued.

Measures of success certainly included more qualitative measures, so agrees with previous research [2, 9, 27]. Positive female role models were also important, although not necessarily as business mentors, so the FSB research [12] is only somewhat confirmed (**Figure 2**).

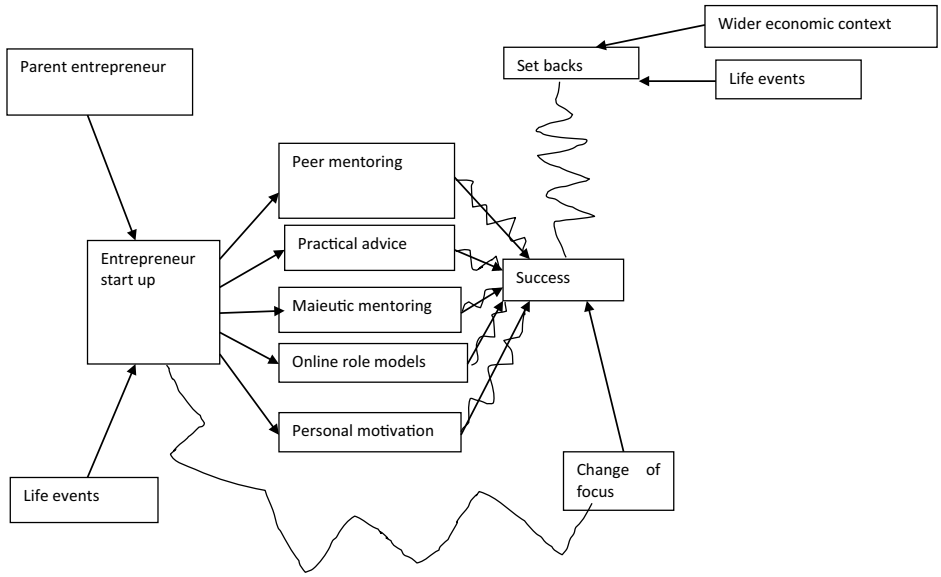

Figure 2.
Revised conceptual framework.

A revised conceptual framework is suggested. Mentoring now consists of maieutic mentoring and practical advice. Peer mentoring has been added and given more prominence. Other additions are online role models and personal motivation. All these were mentioned by the entrepreneurs as contributing to their business success.

The linear nature of the previous model has been changed. Things do not always go to plan. Setbacks, from the economic context or personal experience, can cause bumps in the road. Life events can produce a change of focus which leads to a redefinition of business goals. Even with the benefit of mentoring and advice, success is not guaranteed.

9. Conclusion

The main elements of the St Jean [18] mentoring model were found to be relevant to women entrepreneurs. In addition, peer mentoring was revealed as significant. This should be examined in more detail. Using online role models and others who were not engaged in a formal mentoring relationship shows that the definition of mentoring is changing to include mentors who are not aware of their influence.

These additional elements add to the theory of mentoring roles and also provide some practical implications for the content of business support programmes. Entrepreneurial start up and support programmes need to recognise the value of peer mentoring. The identification of peer mentoring as a vital part of business support to encourage women to engage in entrepreneurship is an important development.

Although a successful mentoring relationship supported women in their business development, it was not the singular element that led to business success. This challenges theory and previous studies [2, 9, 27] which set out the premium importance of mentoring. The influence of personal motivation could be more important, which would lead to the need for more support for entrepreneurial ambitions at school age. None of the entrepreneurs interviewed felt that they had received such support.

The research had several limitations. Whilst it was applicable to the nature of the research aim and questions being investigated that a subjective approach was undertaken, this is an account of a relatively small number of participants. Qualitative research is by its nature concerned with smaller numbers than larger scale quantitative studies. As I am a woman entrepreneur and mentor living in the location which was investigated, I am an actor in the environment studied. This could be regarded as creating biased findings. Conversely, I viewed this as an advantage in gaining access to research participants. Personal contact is "the condition under which people come to know each other," and interviews could be more collaborative [38]. I followed a reflexive route, "mindfully distancing (myself) from embedded circumstances" [39]. By researching friends and contacts, I could "benefit from knowing (my) co-participants well and being able to rely on shared experience" [40]. This led to trust, and empathy.

For the future, the revised model could be tested on a wider sample of participants to examine the experience of women entrepreneurs in more depth.

For this study, only those women who were classed as successful and had been mentored were interviewed. Successful women entrepreneurs who had not been mentored may have a different experience. Alternatively, women who had mentoring yet did not create a successful business could also add to the picture. Thus future studies could include these groups.

Whilst the research was carried out in a small area of the UK it is envisaged that it will help to understand the issue more generally. Future research could test the model on women entrepreneurs in other locations.

Appendix A. Entrepreneur research participants

Mentee	Age	Industry	Business status
E1	44	Footwear manufacturing	Employer
E2	40	Vodka production	Employer
E3	51	PR, video production	Sole trader
E4	42	Cosmetics network marketing, Personal development	Sole trader
E5	55	Director, estate agency	Director
E6	51	Retail, children's wear, property, complementary therapy	Sole trader
E7	35	Farming, livery, accommodation	Partnership with husband
E8	44	Hypnotherapy	Sole trader
E9	43	Physiotherapy	Employer
E10	45	Holiday accommodation	Sole trader
E11	68	Complementary therapy	Sole trader
E12	63	Celebrant	Sole trader
E13	45	Nutritionist, charity founder	Sole trader
E14	53	Coach, personal development	Sole trader
E15	51	Social media strategy and marketing	Sole trader
E16	44	Social care, nursing, leadership	CIC, employer
E17	44	Animal pain, outdoor expeditions	Sole trader
E18	48	VA	Sole trader
E19	59	Food manufacturing	Employer
E20	63	Clothing, property	Sole trader
E21	43	Farming, accommodation	Partner with husband
E22	54	Food production	Partner with husband
E23	47	Health, fitness	Sole trader
E24	60	Coaching, mediation	Sole trader

B. Mentor research participants

Mentor	Age	M/F	Paid/free
M1	64	F	Free
M2	51	F	Free
M3	56	F	Paid
M4	44	F	Paid
M5	59	M	Paid
M6	73	M	Free

Author details

Alison Theaker
University of Bath, United Kingdom

*Address all correspondence to: at2313@bath.ac.uk

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References

[1] Laukhuf RL, Malone TA. Women entrepreneurs need mentors. International Journal of Evidence Based Coaching & Mentoring. 2015;**13**(1):70-86

[2] McMullan L, Price A. We don't need no education: The role of mentoring in the wider enterprise eco-system. International Journal of Gender and Entrepreneurship. 2012;**4**(2):196-205

[3] Kobeissi N. Gender factors and female entrepreneurship: International evidence and policy implications. Journal of International Entrepreneurship. 2010; **8**(1):1-35

[4] Wilson F, Tagg S. Social constructionism and personal constructivism. International Journal of Gender and Entrepreneurship. 2010; **2**(1):68-82

[5] Baker T, Welter F. Come on out of the ghetto, please! – Building the future of entrepreneurship research. International Journal of Entrepreneurial Behavior & Research. 2017;**23**(2):170-184

[6] Hovorka AJ, Dietrich D. Entrepreneurship as a gendered process. The International Journal of Entrepreneurship and Innovation. 2011; **12**(1):55-65

[7] Sharafizad J, Coetzer A. Women business owners' start-up motivations and network content. Journal of Small Business and Enterprise Development. 2016;**23**(2):590-610

[8] Overall J, Wise S. The antecedents of entrepreneurial success: A mixed methods approach. Journal of Enterprising Culture. 2016;**24**(3):209-241

[9] Sarri KK. Mentoring female entrepreneurs: A mentors' training intervention evaluation. Journal of European Industrial Training. 2011; **35**(7):721-741

[10] Terjesen S, Sullivan SE. The role of developmental relationships in the transition to entrepreneurship. Career Development International. 2011;**16**(5): 482-506

[11] Swail J, Marlow S. Embrace the masculine; attenuate the feminine – gender, identity work and entrepreneurial legitimation in the nascent context. Entrepreneurship & Regional Development. 2018;**30**(1-2):256-282

[12] FSB (Federation of Small Businesses). Women in Enterprise: The untapped potential. 2016. Available at: https://www.fsb.org.uk/docs/default-source/fsb-org-uk/fsb-women-in-enterprise-the-untapped-potential. (Accessed 19 December 2018)

[13] Kazumi T, Kawai N. Institutional support and women's entrepreneurial self-efficacy. Asia Pacific Journal of Innovation and Entrepreneurship. 2017; **11**(3):347-349

[14] Jones J. An analysis of learning outcomes within formal mentoring relationships. International Journal of Evidence Based Coaching and Mentoring. 2012;**10**(1):57-72

[15] Starr J. The Mentoring Manual: Your Step by Step Guide to Being a Better Mentor. Harlow, England: Pearson; 2014

[16] Maclean M, Harvey C, Gordon J, Shaw E. Identity, storytelling and the philanthropic journey. Human Relations. 2015;**68**(10):1-30

[17] Sarri KK. Mentoring female entrepreneurs: A mentors' training

intervention evaluation. Journal of European Industrial Training. 2011; **35**(7):722

[18] St-Jean E. Mentoring as professional development for novice entrepreneurs: Maximizing the learning. International Journal of Training and Development. 2012;**16**(3):200-216

[19] St-Jean E, Audet J. The effect of mentor intervention style in novice entrepreneur mentoring relationships. Mentoring & Tutoring: Partnership in Learning. 2013;**21**(1):96-119

[20] St-Jean E, Audet J. The effect of mentor intervention style in novice entrepreneur mentoring relationships. Mentoring & Tutoring: Partnership in Learning. 2013;**21**(1):101

[21] McMullan L, Price A. We don't need no education: The role of mentoring in the wider enterprise eco-system. International Journal of Gender and Entrepreneurship. 2012;**4**(2):199

[22] Neube LB, Wasburn MH. Strategic collaboration and mentoring women entrepreneurs: A case study. Academy of Entrepreneurship Journal. 2010;**16**(1): 71-94

[23] Stavropoulou O, Protopapa S. A strengths-based approach to mentoring women entrepreneurs: How to free the strengths within them. Time and Space. 2013;**2**(1):1-10

[24] Cabrera EM, Mauricio D. Factors affecting the success of women's entrepreneurship: A review of literature. International Journal of Gender and Entrepreneurship. 2017;**9**(1):31-65

[25] Greer MJ, Greene PG. Feminist theory and the study of entrepreneurship. In: Butler JE, editor. New Perspectives on Women Entrepreneurs. Greenwich CT: Information Age Publishing; 2003. pp. 1-24

[26] Wilson F, Tagg S. Social constructionism and personal constructivism. International Journal of Gender and Entrepreneurship. 2010; **2**(1):79

[27] Sarri KK. Mentoring female entrepreneurs: A mentors' training intervention evaluation. Journal of European Industrial Training. 2011; **35**(7):734

[28] May R. Starts ups across the UK are going bust. The Telegraph. 2019. https://www.telegraph.co.uk/politics/2019/01/24/start-ups-across-uk-going-bust-need-careful-management-economy/ (Accessed 1 November 2020)

[29] McIntyre G. What percentage of small businesses fail? 2020. https://www.fundera.com/blog/what-percentage-of-small-businesses-fail (Accessed 1 November 2020)

[30] Mansfield M. Start up statistics - The Numbers You Need to Know. 2020. https://smallbiztrends.com/2019/03/startup-statistics-small-business.html (Accessed: 1 November 2020)

[31] FSB. One in three closed small firms fear they'll never reopen amid widespread redundancy plans. 2020. Available at: https://www.fsb.org.uk/resources-page/one-in-three-closed-small-firms-fear-they-ll-never-reopen-amid-widespread-redundancy-plans.html (Accessed: 1 November 2020)

[32] Braun V, Clarke V. Thematic analysis. In: Cooper H, editor. APA Handbook of Research Methods in Psychology. American Psychological Association; 2012. pp. 57-72

[33] Gioia DA, Schultz M, Corley KG. Organizational identity, image and

adaptive instability'. Academy of Management Review. 2012;**25**(1):63-81

[34] Reay T, Zafar A, Monteiro P, Glaser V. Presenting findings from qualitative research: One size does not fit all! In: Zilber TB, editor. The Production of Managerial Knowledge and Organizational Theory. Bingley, UK: Emerald; 2019. pp. 201-213

[35] Kazumi T, Kawai N. Institutional support and women's entrepreneurial self-efficacy. Asia Pacific Journal of Innovation and Entrepreneurship. 2017; **11**(3):345-365

[36] Kuhn KM, Galloway TL. With a little help from my competitors: Peer networking among artisan entrepreneurs. Entrepreneurship Theory and Practice. 2015;**39**(3):571-600

[37] Kuhn KM, Galloway T, Collins-Williams M. Near, far and online: Small business owners' advice-seeking from peers. Journal of Small Business and Enterprise Development. 2016;**23**(1): 189-206

[38] Harding N. Feminist methodologies. In: Cassell C, Cunliffe AL, Grady G, editors. The Sage Handbook of Qualitative Business and Management Research Methods. London, UK: Sage; 2020. pp xx

[39] Maclean M, Harvey C, Chia R. Reflexive practice in the making of elite business careers. Management Learning. 2012;**43**(4):385-404

[40] Vuorinen P.. Doing research among family and friends. 2020. Available from: http://lepo.it.da.ut.ee/~lehti/Oralhistory/3.6.Pihla.htm [Accessed: November 01, 2020]

Chapter 11

A Review of the Impact of Covid-19 Pandemic on Women Entrepreneurs

Sameera Henri, Andrisha Beharry and Pfano Mashau

Abstract

This chapter provides an overview of the positive and negative impacts the Covid-19 pandemic has on women entrepreneurs in South Africa. The chapter recognises the role that women entrepreneurs play in the economy and society. The research objectives for this study were to first identify the importance of female entrepreneurs. Secondly, to determine the positive and negative impacts that Covid-19 has had on South African women entrepreneurs, and lastly, to identify the assistance provided to women entrepreneurs by the government. The methodology used to conduct research was desktop research. Information was collected from online databases in the form of articles, journals and textbooks. Only information relevant to the research objective was selected for this study. The findings revealed that female entrepreneurs play a vital role in the South African economy by creating employment opportunities, decreasing poverty and contributing to the gross domestic product (GDP). The findings revealed that lockdown restrictions implemented by the government due to Covid-19 led to many women-owned businesses not being able to operate, a decrease in sales, a drastic drop in revenue, lack of digital knowledge among women, increase in anxiety experienced by women and women entrepreneurs. The findings also suggest a lack of digital knowledge among women entrepreneurs and a lack of financial assistance provided by the government. Regulators and policymakers are challenged to invest in efforts that create an environment where female entrepreneurs are capacitated and provided with information to withstand the challenges brought by the pandemic.

Keywords: Covid-19, coronavirus, women entrepreneurs, South African women entrepreneurs, positive impacts of Covid, negative impacts of Covid

1. Introduction

Coronavirus, also known as Covid-19 originated in Wuhan, China in December 2019 [1]. The virus has rapidly spread among humans worldwide, claiming the lives of the young and old. People who contract the virus experience flu-like symptoms. In worst cases, it can affect the lungs and ultimately lead to death. There are currently over 49 million cases reported globally and over 1 million deaths that have occurred due to the virus [1]. On 11 March 2020, the World Health Organisation (WHO) declared the Covid-19 virus a global pandemic.

This required many countries to implement actions that would help control the spread of the virus.

A necessary action taken by most countries was the implementation of a nationwide lockdown. Leading to regulation that restricts the movement of citizens and for the infected to quarantine in their homes for a specified period. Only essential services and workers were permitted to operate during the lockdown period. Some governments, like in South Africa, restricted trade and travelling between countries during the lockdown. The rapid spread of the virus and government restrictions, Covid-19 caused a drastic impact on business operations, the economy and people's livelihoods. Due to the restrictions imposed by the government and the harsh lockdown, many businesses could not survive and had to close down.

Covid-19 also impacted entrepreneurs across the world, including South Africa. Most businesses owned by women fall under the SME. This means women are likelier to own businesses in the service industry than in the technological or manufacturing industry [2]. Women entrepreneurs own various businesses ranging from child care services, to salons and law firms. The productivity levels of women entrepreneurs are often impacted due to their responsibilities at home, such as taking care of kids to household responsibilities [2]. However, female entrepreneurs are still emerging in numbers [3].

In South Africa women entrepreneurs make up 52% of the population, with the largest ethnic group of self-employed women being classified as black women [4]. Women entrepreneurs are often self-employed and employ other individuals or solo entrepreneurs who have no other employees who work for them [2]. In South Africa, women entrepreneurs are producers of employment opportunities, suppliers of jobs, and contributors to a decrease in poverty, thus contributing to the development of the economy [4]. Women entrepreneurs form part of the sectors in the economy that were drastically impacted by Covid-19 and experienced a major decline in consumer demand. Therefore, Covid-19 created a risk of the possible closure of many women-owned businesses and an increase in job losses [5].

Due to the coronavirus, women entrepreneurs now face challenges such as financial, and mental health stability, a decrease in consumer demands, disruptions in the supply chain network, and worker support [6]. However, many researchers have failed to conduct research on how women entrepreneurs have been affected by Covid-19 [5].

This study will analyse the positive and negative impacts created by Covid-19 on women entrepreneurs in South Africa and contribute to research conducted in the space of female entrepreneurship. It will also be helpful to female entrepreneurs and potential female entrepreneurs to clearly understand the impact of a global pandemic and how to secure their businesses against unforeseen circumstances in the future.

2. Literature review

An entrepreneur thinks of an innovative business idea, and is willing to take a risk and advantage of an opportunity [7]. A woman entrepreneur can be defined as an individual who is looking for an opportunity, with a unique vision, has remarkable perseverance and, above all, a female who is willing to take chances with the uncertain because of the upbeat attitude she holds [8]. For many years women have worked jobs such as child care, cleaning their homes and taking care of the sick family without any pay [9]. These roles have gradually changed over the years due to an increase

in women wanting to gain independence and professional life [10]. Women have acknowledged their power and ability to do exactly what men can do in business.

Many countries worldwide have acknowledged the vital role that female entrepreneurs play in contributing to economic growth [11]. According to Agarwal & Lenka [8], without women entrepreneurs, the economy will be unbalanced. Researchers have stated that countries that have economies which can survive an unexpected financial crisis have a high number of women entrepreneurs [12]. In South Africa, female entrepreneurs are not only considered contributors to economic growth, but they are also responsible for helping decrease the unemployment and poverty rate, as well as contributing to the differentiation of entrepreneurship in the economy [10]. They also operate in the informal sector, for example, spaza shops [3].

In 2017 women entrepreneurship increased to 17% globally and continued to rise yearly [13]. In South Africa, 34.3% of women are able to start up their own business. According to [14], the South African population consists 51.1% of females and 40% of South African homes are run by females who are the sole breadwinners. Women entrepreneurs in South Africa take part in the retail and personal sectors (bakers, cooks, salon owners etc.) [10]. The number of women wanting to start up their business venture varies according to women who want to start a business due to monetary gains (54%), women wanting to be their own bosses and set their own terms or rules (50%), and lastly, those females who aim to transform their passion into a business and career path (40%). According to a survey carried out by SME South Africa, nearly 47% of South African SMEs are owned by females, which is a 6% increase when compared to the 2019 findings [15].

In 2018 Facebook research regarding female entrepreneurs was conducted. The findings stated that women entrepreneurs could boost the South African economy by R175bn by the year 2022 [16].

2.1 The positive and negative impacts of covid-19 on women entrepreneurs

The Covid-19 pandemic has impacted women entrepreneurs both negatively and positively. Due to the lockdown regulations, many female-owned businesses were impacted for a longer period as compared to male-owned businesses [17]. The lockdown regulations in South Africa permitted the operation of many businesses (restaurants, salons, spas etc.) during specific levels. This meant that most businesses owned by women entrepreneurs had to be closed during this period. According to Kipnis [6], 90% of women-owned small and medium enterprises in South Africa experienced a decrease in sales due to the lockdown. The lockdown regulations also severely impacted the cash flows of women-owned businesses [17]. As a result of the lockdown regulations, many female-owned businesses were not able to survive due to having no sales and ultimately had to close down [6]. Women entrepreneurs whose businesses had to be shut down due to Covid-19 stated they could no longer afford to pay staff salaries or even sustain their personal home expenses [17].

Many women experienced mental health issues such as anxiety and depression due to Covid-19 [18]. Research has stated that nearly 34% of women-owned small and medium enterprises experienced stress and a lack of productivity during the lockdown [6]. The number of females and female entrepreneurs who experienced anxiety increased due to women not being able to cope with added stress from their businesses, families and work [19]. According to [6], 27% of women-owned small and medium enterprises experienced an increase in care demands which required them to home-school kids and take care of their elderly and family. As each level of

the lockdown was gradually lifted, certain businesses were allowed to operate. Many women could not return to their businesses because childcare services (schools, daycare) were still not permitted to open [19]. This led to women neglecting their business needs and not being able to receive an income because there was no one else to look after their kids [17].

The disruptions in global and local supply chains harmed female entrepreneurs. Many businesses could not get their goods and raw materials delivered to them due to transportation/shipping restrictions and delays [6]. Some women owned businesses were not able to acquire raw materials needed to carry out their business operations as a result of the South African government placing strict restrictions on the movement and trade of goods. Due to this many woman owned businesses could not operate leading to possible closure or loss of sales [6].

While many businesses were able to make sales during the lockdown period, women entrepreneurs who had no formal knowledge of technology, social media, or a business website experienced difficulty making sales during the lockdown period [20]. The majority of businesses owned by women do not participate in e-commerce activity [17]. For example, women in townships running spaza shops or small takeaway shops do not offer their services online and have therefore suffered detrimentally due to Covid-19. Some women have failed to transform their businesses to digital platforms because they need to gain digital knowledge [21]. This places great importance on women entrepreneurs gaining digital knowledge such as website, e-commerce and marketplace knowledge [6].

According to Ukala [17], many women entrepreneurs also lacked basic information regarding what steps to follow to sustain their businesses through the pandemic. They also needed to gain knowledge on how to apply for financial loans for their SME or SMME during Covid-19. It is essential to educate females in finance so they can acquire credit for their businesses easily. This lack of basic information is crucial for the survival of women entrepreneurs [13]. Women entrepreneurs also found it challenging to acquire loans during the pandemic [21]. This affected the survival of their business.

Covid-19 has also had some positive impacts on South African women entrepreneurs. Many women entrepreneurs were able to sell their products or services online by the use of e-commerce, business websites, online sales (Gumtree) and Facebook marketplace [20]. This allowed them to still make sales from the comfort of their homes.

During the lockdown, some female entrepreneurs have been able to adapt their business operations and products to meet the needs of consumers more effectively and efficiently [22]. For example, women who own restaurants have been offering delivery services. This has allowed them to differentiate their business from competitors.

Many women entrepreneurs expanded their businesses by identifying business opportunities in the market due to Covid-19. For example, dressmakers who could not operate started making face masks and selling.

2.2 Assistance provided by the government

The South African government has allocated a R500 million-rand relief fund to be allocated among SMEs, especially women-owned enterprises that will be given first preference when applying for this funding [23]. However, all applicants' especially female entrepreneurs, will have to go through an application process before getting approved.

An initiative called the Ecosystem Development for Small Enterprises in South Africa (EDSE) has been providing funding to small and medium enterprises. An amount of R467 million has been paid to small businesses, with 45% funded to women owned businesses such as spaza shops and hairdressers [21]. This will help women entrepreneurs sustain their businesses through the pandemic reducing the financial pressure felt by female owners.

The South African Innovation Summit (SAIS) launched a Fem-In-Tech, which aims at educating South African female entrepreneurs on the technology they would need when starting up businesses or growing their already established businesses. This is aimed at helping women entrepreneurs transform their businesses to digital platforms. To operate effectively and efficiently in a modern economy, technological development in a business is vital [24]. This is also aimed to assist with closing the digital gap between male and female entrepreneurs, allowing female SMEs and SMMEs to take part in the e-commerce market and adapt their business practises to an economy after Covid-19 [17]. Numerous initiatives are being launched to help women entrepreneurs gain digital knowledge. According to [21] by educating women entrepreneurs on how to use technology, women become more independent and are able to keep themselves better informed.

The government helped women entrepreneurs by providing grace periods for loans taken by women-owned businesses [17]. Both these measures can help sustain women-owned businesses, thus saving jobs and livelihoods.

The Inter-American Development Bank (IDB) received an amount of $14.71 million from the American government for its initiative to provide women entrepreneurs with support, finance and training to help sustain their businesses [25]. It will also help women entrepreneurs withstand global economic downturns.

African governments have vowed to be more acknowledging of the current challenges women entrepreneurs are now facing due to Covid-19. They plan to release more funding to women-owned businesses and placed great urgency on launching digital knowledge and support programs for these women [26].

The European Bank for Reconstruction and Development plans to help women-owned small and medium enterprises in Egypt, Morocco and Mongolia by providing them with digital knowledge, financial support and more access to different supply chain markets and suppliers [25].

The World Bank has created a programme to provide skills development and support to female entrepreneurs. It also plans to close the finance gap that women entrepreneurs have been experiencing [25].

Women entrepreneurs play a vital role in the economy. They create employment opportunities, decrease poverty and contribute to the gross domestic product (GDP) of a country. The recent pandemic (Covid-19) has made many negative impacts on female entrepreneurs and, in some cases, led to the closure of women-owned businesses. However, Covid-19 also positively impacted women entrepreneurs.

2.3 Entrepreneurial activities post Covid-19

Covid-19 has evolved how entrepreneurs conduct business by highlighting the importance of innovation and digitalisation as vital factors of business survival post-covid-19. According to [27], entrepreneurial sustainability and continuance rely heavily on innovation.

Businesses need to have the ability to create new products as this improves a business's endurance in the face of economic uncertainty [28]. It also creates opportunities of diversification and relevance in the economy [29].

Great emphasis is placed on the utilisation of technology in the form of a business website or a business social media account which are critical components for a business. Technology mitigates the risks associated with future unforeseen circumstances, such as a pandemic or restrictions on physical remoteness [28]. According to Liguori & Pitts [29], technology also provides search engines which help entrepreneurs to build and maintain relationships with their consumers as well as stay relevant. It also helps entrepreneurs sell their products to customers [30].

Entrepreneurs have acknowledged that having a sustainable team plays a vital role in the survival of a business post Covid-19. A sustainable team is one that displays efficiency, effectiveness, strong motivation, and capabilities. These employees also help a business get through unforeseen circumstances [30].

Government policies relating to financial support for entrepreneurs have also played an important role in the survival of entrepreneurs. Many governments have also adopted new policies that make it easier for entrepreneurs to gain access to financial aid when faced with unforeseen circumstances [31].

3. Methodology

To provide a review of the impact that Covid-19 had on women entrepreneurs in South Africa a desktop research study.

Data was collected from online databases in the form of academic journals, online articles and textbooks. Desktop research is simply seeking applicable, already accessible knowledge on the subject at hand. Secondary data is collected through desktop research. Information that is publicly accessible and relevant to women entrepreneurs in South Africa was used for this study. Numerous sources are utilised for secondary data collection. A researcher will analyse which source to use depending on the research conducted.

The search began on the 5th of November using academic databases such as Google Scholar, EbscoHost, Scopus and textbooks. The search for information was limited to 5 years old. This meant that only articles, journals and textbooks published between 2015 and 2020 could be used for this study.

When researching academic databases, the terms "women entrepreneurs", "South Africa women entrepreneurs", Covid-19 impact on female businesses". By using these search terms, the majority of the data found was in the form of articles and research papers. The initial search resulted in over 30 results which had to be narrowed down.

The following themes were identified during the literature review. They were used as search words to locate research papers suitable to interrogate the research question: "women entrepreneurs", "women entrepreneurs in South Africa" and "Covid-19 impact on female businesses" To classify the positive or negative impact of Covid-19 on female entrepreneurs the findings of each research paper was viewed.. The search conducted revealed that majority of the information was in the form of articles. Since the study focused on women entrepreneurs impacted by Covid-19, only those articles and journals that were relevant were selected. A total of 20 articles were selected. The articles were sources from the following databases; EbscoHost (Five articles), Scopus (three Articles), and Google Scholar (11 articles).

The lead researcher identified and categorised the required information and article that relates to the aim of the study. The data collection method that guided the analysis of data is known as the content data analysis method. All data were read and

analysed to understand how the relevant research could add valuable information to the current study.

4. Findings and discussion

The main aim of this chapter is to document the positive and negative impact Covid-19 has had on women entrepreneurs in South Africa. This study also provided an understanding of the essential roles that female entrepreneurs played in the economy and compared the actions taken to help female entrepreneurs by the South African government and other governments.

4.1 The importance of female entrepreneurs

Although the number of female entrepreneurs in the country are far less than male entrepreneurs, female entrepreneurs play a vital role in contributing to the economic well-being of a nation. These businesses contribute to the GDP of the economy. This means that women entrepreneurs also form part of the backbone of the country's economy. Many women who own their businesses are also the breadwinners in their homes and therefore rely on the revenue their business earns. Since many women entrepreneurs fall under the SME and SMME, these sectors were the most vulnerable and largely impacted by Covid-19.

The findings demonstrate that female entrepreneurs create jobs, decrease poverty, motivate other females and contribute to the overall well-being of the economy. According to [3], nine out of a hundred females participate in early entrepreneurial activity. The findings in this study further revealed the lack of importance placed on female entrepreneurs in South African countries and the lack of research conducted on female entrepreneurs in South Africa. Women entrepreneurs also play an essential role in society by empowering one another and providing jobs to locals.

4.2 The positive and negative impacts that Covid-19 has had on south African women entrepreneurs

This study further revealed that Covid-19 than positively impacted more negatively impacted women entrepreneurs in South Africa. The implementation of a harsh lockdown by the South African government left many women entrepreneurs financially unstable. Many of these women had to borrow money from family and friends in order to provide for their homes or to help them get back into the business once the government permitted them to operate again. It also affected their mental and social well-being. Many female-owned companies suffered more during the lockdown than male-owned businesses due to operating restrictions.

The findings suggested that women entrepreneurs suffered financially from the lockdown implemented by the government. According to Kipns [6], many women-owned businesses had to cut their business costs and decrease the number of workers. Some women entrepreneurs who own businesses located in hotspot areas (high number of Covid-19 cases) suffered more financially than other female businesses. This is due to consumers' fears of going to such stores or locations. This led to a reduction in worker morale and emphasised the importance of financial support provided by the government to assist with paying workers' salaries.

The findings of the study also revealed that numerous female entrepreneurs lack the necessary tools and funding needed to sustain their businesses through the global pandemic. A large number of South African entrepreneurs needed to gain digital knowledge. Covid-19 has placed great importance on digital expertise and a business's ability to transform into a digital platform. This required many businesses, especially SMEs to change from an offline enterprise status to an online enterprise status. This needed to be done to ensure the business's survival ([32, 33] p.4). This knowledge gap has led to many women-owned businesses closing and individuals losing their jobs. Many women had no access to technological devices such as laptops, computers or cellular phones that allowed web browsing. In some cases, women entrepreneurs owned at least one of the three technological devices but had no access to the internet due to them being located in rural areas or not having enough money to purchase data to access the internet.

Further findings suggested that women entrepreneurs faced extra responsibility during the lockdown. Some found this added responsibility to be stressful, leading to difficulty managing their businesses. Women entrepreneurs in South Africa also lacked access to information and knowledge of how to apply for the necessary funding provided by the government for SMEs. Too much paperwork, long waiting periods and not being well-informed led to many women entrepreneurs not using on time or not applying at all for funding by the government. Disruptions in global and national supply chains led to a shortage of stock and many businesses being unable to operate without any stock. This negatively impacted the revenue of women-owned businesses.

The findings revealed the positive impacts that Covid-19 has had on women entrepreneurs. This includes the importance for women entrepreneurs to adapt to market changes and bring about innovative changes to their business operations to ensure their business remains relevant. Some female entrepreneurs could extend the range of products or services they offer. While others were able to take this time during the lockdown to better understand how to meet consumer needs. This creates a better relationship with consumers and helps women entrepreneurs be more attentive to their consumers.

The findings also suggest that more research needs to be conducted on how the virus impacted women entrepreneurs. More research is needed to address the impacts of covid-19 on female entrepreneurs in the formal and informal sectors in the economy.

4.3 The assistance provided to women entrepreneurs by the government

More funding needs to be allocated to sole female entrepreneurs (spaza shops etc.) and female entrepreneurs who are located in rural areas. The government should also provide sole and rural women entrepreneurs with programs that will better educate them on how to manage their businesses. This funding will help them grow their businesses.

These findings revealed that the South African government acknowledged that more significant steps needed to be taken on their part to assist women entrepreneurs. A primary form of action taken by the South African government is financial assistance, which prioritises women entrepreneurs. Governments across the world provide financial assistance to women entrepreneurs.

The findings also revealed that the South African government had acknowledged the importance of providing female entrepreneurs with funding to help them through the

pandemic. They have also encouraged large corporate firms to create programs that will help educate women entrepreneurs on how to transform their businesses into a digital platforms.

Further findings show that governments worldwide have acknowledged the importance of digital education among women entrepreneurs. Most governments state that female-owned businesses are closed due to women lacking digital knowledge [3]. The South African government and other governments agree that women need more financial support, and more government discussions should focus on female entrepreneurs.

5. Limitations

The study is a systematic review using desktop research. It is possible that certain information relating to the impact of the COVID-19 pandemic on women entrepreneurs in South Africa still needs to be collected. The research findings of this study are based on secondary data that was already published. This is a limitation as empirical research was not conducted.

6. Recommendations

Women entrepreneurs within the same area should form support structures for one another. This can be done by creating female entrepreneur support groups within each region. This way they can provide support, exchange business knowledge and motivate one another through difficult times. Women supporting one another creates an unbreakable chain of strong women.

Large South African firms should provide funding to female entrepreneurs only when needed. These firms could acquire the money from either shareholder or deduct a percentage of their annual revenue that would be used to help fund female entrepreneurs. The financial support provided by these companies will help female entrepreneurs sustain their businesses through difficult times.

The government should provide more financial support to female entrepreneurs and prioritise women-owned businesses in economic discussions. The government can provide financial support in the form of financial support programmes. These programmes can equip female entrepreneurs with the knowledge and skills they need to operate their daily businesses, even during unforeseen circumstances.

The government should also change financial policies so women entrepreneurs can gain financial loans much easier from banks and financial assistance from the government. Such changes to financial policies will help save many women-owned businesses.

Technological companies should provide female entrepreneurs in the formal and informal sectors with digital training to help them start their e-commerce business ventures. This will help many females diversify their business and reach a larger target market.

Besides digital and financial advice, female entrepreneurs need training, more information on how to best manage a business and mentoring. If equipped with such knowledge, they can better manage their businesses and know what steps to follow when an economic crisis occurs.

The public and private sectors can provide incentives to people who invest in women-owned enterprises [13]. These sectors can provide incentives such as funding and partnership.

Women entrepreneurs should have more than one supplier. Having more than one supplier will help in ensuring that their business never runs out of stock in future when a global pandemic occurs.

Government should provide more initiatives to support women's mental health.

Entrepreneurs need to build and maintain relationships with consumers on social platforms.

Entrepreneurs should also be innovative in their practices and skills to overcome unforeseen circumstances.

7. Conclusion

Coronavirus unexpectedly occurred, causing disruptions in businesses, travel, supply chains, people's lives and the world economy. No one could prepare for such a destructive pandemic that changed the way of life for everyone. This pandemic spared no human, business or country. Covid-19 has negatively and positively impacted South African women entrepreneurs.

This study shows that women entrepreneurs in South Africa lacked digital knowledge to sustain their businesses. Many women entrepreneurs needed to learn how to utilise social media platforms to engage with consumers, while some needed access to digital devices. It drastically impacted the financial status of women-owned businesses. Disruptions in supply chains affected various women-owned businesses. Mental health issues increased among female entrepreneurs due to added financial stress and the possibility of a business failure. However, this study also found some positive impacts of covid-19 that led to some women-owned businesses serving consumers more efficiently by better understanding their needs, expanding business operations by providing delivery services and selling goods through e-commerce during the harsh lockdown.

Government should allocate more funding and initiatives to help sustain women-owned businesses in the future. Women's entrepreneurship should be more prioritised during government discussions.

Future research should be conducted on women entrepreneurs in rural areas impacted by Covid-19 as there needs to be more data on this topic. Future research is needed on how women entrepreneurs can sustain their businesses for a more extended period during a pandemic. Future studies comparing women entrepreneurs in first-world countries and third-world countries should also be conducted. This will help better understand how different countries value and provide assistance to women entrepreneurs in need. Future studies should also be conducted on women entrepreneurs who are disabled, as few studies have been conducted in this area.

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Author details

Sameera Henri, Andrisha Beharry and Pfano Mashau*
University of KwaZulu-Natal, South Africa

*Address all correspondence to: mashaup@ukzn.ac.za

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References

[1] WHO. World Health Organisation. 2020. Available at: https://www.who.int/docs/default-source/documents/gs4dhdaa2a9f352b0445bafbc79ca799dce4d.pdf [Accessed: November 25, 2020]

[2] WEKH. The Impact of Covid-19 on Women Entrepreneurs. 2020. Available from: https://wekh.ca/research/women-business-owners-and-the-impact-of-covid-19/. [Accessed: July 20, 2022]

[3] Louw E. OPINION: Why South Africa Needs to Stimulate Female Entrepreneurship. 2020. Available from: https://www.iol.co.za/business-report/opinion/opinion-why-south-africa-needs-to-stimulate-female-entrepreneurship-42609192. [Accessed: November 7, 2020]

[4] Mandipake F. Overview of Women Entrepreneurs in South Africa. 2018. Available from: https://www.researchgate.net/publication/293317495_Overview_of_Women_Entrepreneurs_in_South_Africa#:~:text=...,%2Denterprise%20projects%20%5B14%5D%20. [Accessed: September 10, 2020]

[5] Foss L, Henry C. Women's entrepreneurship in the wake of Covid-19 crisis. International Journals for Gender and Entrepreneurs. 2020;**1**(1)

[6] Kipnis H. Challenges and Opportunities Faced by Women-led Businesses during Covid-19 and IFC'S Response. 2020. Available from: http://www.womenentrepreneurshipplatform.org/uploads/1/0/9/4/109400817/ifc_-_challenges_and_solutions_for_women_business_owners.pdf. [Accessed: November 7, 2020]

[7] Rawal C, Rajguru P. Impact of Covid-19 on First Generation Women Entrepreneurs. 2020. Available from: http://journalstd.com/gallery/14-sep2020.pdf. [Accessed: November 8, 2020]

[8] Agarwal S, Lenka U. Study on work life balance of entrepreneurs. Emerald Insight. 2015;**47**(7):356-362. Available from: https://www.academia.edu/en/20396708/Study_on_work_life_balance_of_women_entrepreneurs_review_and_research_agenda. [Accessed: September 2, 2022]

[9] Kevehazi K. Importance of Female Entrepreneurship. 2017. Available from: https://kgk.uni-obuda.hu/sites/default/files/10_Kevehazi.pdf. [Accessed: November 7, 2020]

[10] Chinomona E, Maziriri ET. Women in Action: Challenges Facing Women Entrepreneurs in the Gauteng Province of South Africa. 2015. Available from: https://clutejournals.com/index.php/IBER/article/view. [Accessed: November 8, 2020]

[11] Meunier F, Krylova Y, Ramalho R. Women's Entrepreneurship. 2017. Available from: https://openknowledge.worldbank.org/bitstream/handle/10986/28902/WPS8242.pdf?sequence=1. [Accessed: November 7, 2020]

[12] Yadav V, Unni J. Women Entrepreneurship: Research Review and Future Directions. 2016. Available from: https://www.researchgate.net/publication/308976679_Women_entrepreneurship_research_review_and_future_directions. [Accessed: November 7, 2020]

[13] Quintos K. Four Ways to Boost the Number of Entrepreneurs. 2020. Available from: https://

www.bizcommunity.com/Article/196/713/180488.html. [Accessed: November 6, 2020]

[14] Dumisa L. Sunlight to Support Female Owned SMEs through More Than You Expect Hero Initiative. 2020. Available from: http://www.google.com/amp/s/www.iol.co.za/amp/business-report/companies/sunlight-to-support-female-owned-smes-through-more-than-you-expect-hero-initiative. [Accessed: November 8, 2020]

[15] Perumal J. Female Entrepreneurs have a Better Risk Profile for Loans. 2020. Available from: https://www.businesspartners.co.za/en-za/media-centre/media-releases/south-africa/female-entrepreneurs-have-better-risk-profile-for-business-loans. [Accessed: November 5, 2020]

[16] Ntshingila N. Women Entrepreneurs can Boost South Africa's Economy by R175bn. 2020. Available from: https://www.bizcommunity.com/Article/196/713/180488.html. [Accessed: November 6, 2020]

[17] Ukala E. Transformative Policy Solutions to Support Women–led Businesses in an Africa Post Covid-19 World. 2020. Available from: https://www.tralac.org/documents/resources/covid-19/regional/3980-policy-brief-transformative-policy-solutions-to-support-women-led-businesses-in-africa-in-a-post-covid-19-world-july-2020/file.html. [Accessed: November 5, 2020]

[18] Suhkraj S. Women's Month See Depression and Anxiety Escalate for Women, During Lockdown. 2019. Available from: https://femaleentrepreneursa.co.za/womens-month-sees-depression-and-anxiety-escalate-for-women-during-lockdown/ [Accessed: November 5, 2020]

[19] Chambers B. How women entrepreneurs are navigating the effects of covid-19, Forbes. 2020. Available from: https://www.forbes.com/sites/brittanychambers/2020/03/26/how-women-entrepreneurs-are-navigating-the-effects-of-covid-19/?sh=5a0828d6246d [Accessed: May 25, 2023]

[20] Gakou N. The impact of covid-19 on women: Senegalese female entrepreneur, Africa. 2020. Available from: https://africa.unwomen.org/en/news-and-events/stories/2020/06/the-impact-of-covid19-on-women-nicole-gakou [Accessed: May 25, 2020]

[21] Kionka R. The Impact of Covid-19 on Women and Their Businesses. 2020. Available from: https://mg.co.za/special-reports/2020-08-28-the-impact-of-covid-19-on-women-and-their-businesses/. [Accessed: November 5, 2020]

[22] Manlova TS, Brush CG, Edelman LF. International Small Business Journal: Researching Entrepreneurship. 2020. Available from: https://journals.sagepub.com/doi/full/. [Accessed: November 7, 2020]

[23] Felthun G, Atkinson C. Covid-19: South African Government Financial Assistance Measures. 2020. Available from: https://www.whitecase.com/publications/alert/covid-19-south-african-government-financial-assistance-measures. [Accessed: October 10, 2020]

[24] Kamberidou I. Distinguishing Women Entrepreneurs in the Digital Economy and Multitasking World. 2020. Available from: https://innovation-entrepreneurship.springeropen.com/articles/10.1186/s13731-020-0114-y. [Accessed: November 7, 2020]

[25] Bekkers A. Women Entrepreneurs Finance Initiative Invests in over 15,000 Women-led Businesses Amidst COVID-19 Crisis. 2020. Available from: https://www.worldbank.org/en/news/press-release/2020/08/20/women-entrepreneurs-finance-initiative-invests-in-over-15000-women-led-businesses-amidst-covid-19-crisis. [Accessed: November 6, 2020]

[26] Ebo GN, Kerubo A. Supporting Women-led Businesses in Sub-saharan Africa During COVID-19: Strategies to Survive and Thrive. 2020. Available from: http//nextbillion.net/supporting-women-led-businesses-in-africa/. [Accessed: November 5, 2020]

[27] Adam NA, Alarifi G. Innovation Practices for Survival of Small and Medium Enterprises (SMEs) in the COVID-19 Times: The Role of External Support. 2021. Available from: https://www.researchgate.net/publication/351917293_Innovation_practices_for_survival_of_small_and_medium_enterprises_SMEs_in_the_COVID-19_times_the_role_of_external_support. [Accessed: August 31, 2022]

[28] Jolevski F Muzi S Ueda K, Viganola D. Surviving the Pandemic: A Business Perspective. 2021. Available from: https://blogs.worldbank.org/developmenttalk/surviving-pandemic-business-perspective. [Accessed: August 6, 2022]

[29] Liguori EW, Pittz TG. Strategies for Small Business: Surviving and Thriving in the Era of COVID-19. 2020. Available from: https://www.researchgate.net/publication/343000401_Strategies_for_small_business_Surviving_and_thriving_in_the_era_of_COVID-19?enrichId=rgreq-a74c940be1d863a05d66e18631c9fa1c-XXX&enrichSource=Y292ZXJQYWdlOzM0MzAwMDQwMTtBUzo5Mzc1MDEyNzU0ODAwNjZAMTYwMDUy. [Accessed: August 21, 2022]

[30] Rashid S, Rattern V. Entrepreneurial Ecosystems during COVID-19: The Survival of Small Businesses using Dynamic Capabilities. 2021. Available from: https://www.emerald.com/insight/content/doi/10.1108/WJEMSD-09-2020-0110/full/html. [Accessed: August 31, 2022]

[31] Belitski M Guenther C Kritikos A, Thurik R. Economic Effect of COVID-19 Pandemic on Entrepreneurship and Small Businesses. 2022. Available from: http://www.researchgate.net/publication/354540717_Economic_effect_of_COVID-19_pandemic_on_entrepreneurship_and_small_businesses. [Accessed: August 31, 2022]

[32] Devi RR, Subbulakshmi C. Impact of Pandemic on Women Empowerment. 2020. Available from: https://books.google.co.za/books?id=4kj9DwAAQBAJ&pg=PA45&lpg=PA45&dq=Impact+of+Pandemic+on+Women+Empowerment+Devi,+R.R.,+and+Subbulakshmi&source=bl&ots=WDouCRlsgk&sig=ACfU3U0GXJgRkCVU28KgVPgNGMVY0V8VwA&hl=en&sa=X&ved=2ahUKEwjcmIDdvdv7AhXfTEEAHeMmAE0Q6AF6BAhEEAM#v=onepage&q=Impact%20of%20Pandemic%20on%20Women%20Empowerment%20Devi%2C%20R.R.%2C%20and%20Subbulakshmi&f. [Accessed: January 10, 2021]

[33] Sekaran U, Bougie R. Research Methods for Business: A Skills Building Approach. 7th ed. Chichester, West Sussex, United Kingdon: John Wiley & Sons; 2016. pp. 51-60

Chapter 12

Role of the Family in Fostering Student's Entrepreneurial Intention

Moindi Rose Meroka

Abstract

Entrepreneurship has been viewed as solution to the global unemployment challenges facing youths. It is on this backdrop that this field has drawn the attention of most governments to see to it that their youths have necessary entrepreneurial competencies through the introduction of entrepreneurship education in the school curriculum. However, majority of the youths are still unemployed. The theory of planned behaviour identifies three antecedents which focus on the student that influence their entrepreneurial intention. The objective of the study was identifying aspects of the family (family background, family role modelling, birth order and financial literacy) that influence the student's entrepreneurial intention. The study adopted a qualitative analysis of different studies which addressed the different sources entrepreneurial intention among students. The study established that aspects of the family that fostered student's entrepreneurial intention included family entrepreneurial background, role modelling, birth order and financial literacy. These aspects place the students a notch higher in entrepreneurship education. This information would guide policy makers in developing appropriate educational curriculum in line with the needs of the students and will add knowledge in the field of entrepreneurship education.

Keywords: entrepreneurship education, family, parents, birth order, planned behaviour

1. Introduction

Entrepreneurship is viewed as the solution to unemployment and economic growth ([1], p. 237, [2], p. 17). It is on this backdrop entrepreneurship education was introduced in tertiary institutions with the aim of enabling students to acquire the necessary entrepreneurial competencies as a precursor to be prosperous entrepreneurs ([2], p. 17). However, the theory of planned behaviour identifies three antecedents which influence entrepreneurial intentions, these are; 'personal attitude', 'subjective behaviour' and 'perceived behaviour control' [3]. These antecedents have an intertwining relationship in the student's choice in embarking on an entrepreneurial career path. In the model subjective norm is placed at the centre which implies that social pressure to take up entrepreneurship is influenced by both personal attitude as well as perceived behaviour control [3]. Social pressure according to Rachmawan et al. [4] denotes to the referral people whom in this case are teachers, classmates, siblings and parents and an extension family members. However, the study by Eccles

and Davis-Kean [5] showed that parents would take a greater per cent in the process of nurturing the student's social pressure to become entrepreneurs.

The role of parents in influencing entrepreneurial intention cannot be overemphasised this is because family business contributes 50 to 80% employment opportunities consequently contributing 70% of the country's Gross Domestic Product (GDP) in developing countries [6]. This implies that families have a great contributing factor in perpetuating enterprises. Parents are driven by dynasty perpetuation and the desire to extend family legacy [7–10]. However, the desire to extend the family legacy is met by ambivalence stemming from different codes in the parent offspring relationships.

Entrepreneurial intention is described as the willingness to undertake an entrepreneurial venture [11]. The willingness to take up an entrepreneurial venture would emanate from the family as a role model. The family can either pose positive entrepreneurial intentions or negative entrepreneurial intentions depending on the family relationships. Studies have also shown that parents who are entrepreneurs would influence their students to take up entrepreneurial ventures as a means of perpetuating the family business, or readily support their children to start up new ventures [11–13]. On the other hand the children may take up entrepreneurial ventures out of family necessity [12] even in cases where parents or members of the family were not entrepreneurs.

The current study seeks to conduct a content analysis of available literature to assess the extent with which aspects family background; family income, exposure to role models in this (case parents), parental relationships and parental educational experiences would affect student's entrepreneurial intention. In this study the family is not limited to the nuclear family but also the extended family which includes uncles, aunties and grandparents.

2. The theory of planned behaviour

Ajzen's theory of Planned Behaviour identifies three antecedents which influence entrepreneurial intentions, these are; personal attitude, subjective behaviour and perceived behaviour control [3]. These antecedents revolve around the student; the student's personal attitude, subjective behaviour, and perceived behaviour towards entrepreneurial intention. While focusing on the student, it is important to assess what revolves around the student in the process of making intentions. Aspects of decision making that revolve around the student are, to a great extent are influenced by persons who are closes to the student who in most cases are the members of the family [3, 14, 15].

Ajzen [3] observed that perceived behaviour control to encompass people's perception on the ease or difficulty of performing the behaviour of interest. This antecedent would be to a great extent be influenced by the members of the family. The social learning theory according to Bandura [16], observed that people learn well through social interactions. These interactions would increase the amount of information at the disposition of the learner. Bandura further described self-efficacy as with how well one will be able to perform a certain task. This ability will depend on the amount of information at the deposition. This means that one with sufficient information will perform the task more efficiently compared with one who has the intention to perform a task but does not have any information concerning the task. This infers that if the student has sufficient information about entrepreneurship then they would develop entrepreneurial intention more compared to a person with limited information. Members of the family would to a great extent provide sufficient information

on entrepreneurship thus influencing ones perception in the ease or difficulty in performing tasks.

Subjective norm describes a perception of significance towards certain action as a result of people's attitude [17]. In the theory of planned behaviour, people close to the student will approve or disapprove certain behaviour. The current study sought to assess the available studies on the role of parents in approving or disapproving student's entrepreneurial intention. Parental approval of their children being entrepreneurs could stem from the fact that either the parents were or were not entrepreneurs or if they could provide support in form of encouragement or finance towards an entrepreneurial venture.

Attitude towards a particular behaviour is described as the degree to which a person has a favourable or unfavourable evaluation of the behaviour [3]. Sabah [17] observed that attitude can be learned such that the favourable the personal attitude the stronger the intention. Thus students can learn to accept or deny a particular attitude. If the attitude is perceived as desirable persons will act towards that particular behaviour on the other hand if they learn that the attitude is not favourable then they would act against the particular behaviour. In the process of influencing a student's attitude towards being entrepreneurs, parents act as the role models in influencing the student's attitude. For instance if a student observed that positive entrepreneurial experiences this would pose positive attitude towards entrepreneurship consequently encouraging students to venture in entrepreneurship and vice versa.

3. Objective of the study

The objective of the study was to;

1. Identify aspects of the family (family background, family role modelling, birth order and financial literacy) that influence the students entrepreneurial intention.

3.1 Methodology

To explore the families' role in the process of influencing the student's entrepreneurial intention, a qualitative analysis of different studies which addressed the sources of entrepreneurial intention were identified. Identification of the sources of entrepreneurial intention were based on Ajzen's theory of planned behaviour; personal attitude, subjective behaviour and perceived behaviour control of the student. The analysis of the studies was based upon items concerning family background which included; family entrepreneurial background, family role models, birth order and family financial status. Analysis of these items in the different studies provided an insight on the role of the family in influencing the student's entrepreneurial intention.

4. Results

Studies have shown that one's family background plays a key role in influencing entrepreneurial intention [18, 19]. Family background would vaguely refer to the birth, childhood, residence, economic conditions and the jobs of the parents. Families therefore would have different levels of influencing the students EI. Family influence will depend on the child's birth order in the family, place of residence, parental economic

conditions as well as the jobs parents engage in. Other definitions of family background have included aspects of succession or inheritance [7, 8, 10]. These aspects of the family background influence student's entrepreneurial intention as observed from results obtained in different studies as presented in the following sections.

5. Family entrepreneurial background

The theory of entrepreneurial opportunity identification identifies entrepreneurial personality traits, social networks, and prior knowledge as antecedents to entrepreneurial alertness [20]. According to this theory, each person's idiosyncratic prior knowledge creates a knowledge corridor that allows them to recognise certain opportunities. These opportunities conferring to Ardichvili et al. [20] would place such persons in a better position to recognise certain opportunities compared to the others. This theory supports the fact that students whose parents have entrepreneurial background predispose their children to entrepreneurial knowledge more compared to students whose parents lack entrepreneurial background.

Different studies have recognised the role of parents in influencing their students EI [18, 19, 21, 22]. Studies by Nguyen [11] and Ranwala [13] have shown that there is a strong relationship between family entrepreneurial backgrounds with their children's entrepreneurial intention. This is attributed to the fact that families pose to the students not only the most reliable role models but also entrepreneurial families are more reliable and agreeable to support business ventures compared to families with no entrepreneurial venture [11–13]. For instance the study by Rachmawan et al. [4] showed that there is a mean difference in EI of students who have no experience in entrepreneurship compared with students with experience in entrepreneurial activities. This is because students with entrepreneurial parents tend to acquire entrepreneurial acumen in their interactions with their parents and the business. This gives them prior experiences of the needs of the clients and the market. This observation is similar to the studies by [21] and Kamitewoko [23] who observed that individuals whose parents have a business have about 10.2% higher like hood to being entrepreneurs. The studies attributed this to the fact that the students were not only observers of their family business but also participated over the years concerning their family business this subjective exposure to entrepreneurial activities impact on the student's career choice.

The study by Molina [12] showed that not all entrepreneurs emanate from entrepreneurial families; some persons have become entrepreneurs out of economic necessity. However, the economic necessity stems from the needs of the family. This implies that families with limited entrepreneurial knowledge would appreciate their children's entrepreneurial venture as long as it sustains the family economic needs. Consequently, while students with entrepreneurial background have prior exposure to entrepreneurship, students with no entrepreneurial background would become entrepreneurs drawn from family necessity and consequently learn while engaging in the entrepreneurial venture.

6. Family role modelling

Role models can be drawn from two constructs, role which is the tendency to identify with others or role modelling which is described as a psychological matching of cognitive skills between an observer and the person being observed

[24]. Role models drawn from the student's direct environment such as family members tend to have strong ties with the entrepreneur or in this case the student Boldureanu [25]. Such role models will not only fit to be the role but also role model the student this is because they are closest to the student. For instance there are families that introduce their children to their businesses at a tender age and help in carrying out the activities of the family in the business this relationships form strong entrepreneurial ties [16, 26]. Therefore family role models are described as an important source of social capital.

While it might seem easy to measure parental influence, it is important to assess the relationship between the parental gender and the student's gender. In role modelling, Carli [27] observed that male and female take up different roles such that while females tend to take up caretaking domestic roles which are perceived to be of lower status, males are perceived to take up higher status occupational roles. This tends to disadvantage females compared to males in level of influence such that people would tend to resist female influence compared with male influence. However, the assumption that females have limited social influence could be limited to situations where they have succeeded socially and their performance is superior to that of their male counterparts [27].

The study by Rocha and van Praag [28] showed that female entrepreneurs are able to break gender stereotypes while at the same time influence their female employees especially those with no family entrepreneurial background. Their study further showed that female entrepreneurs are 60–90% more likely to influence their female employees to become entrepreneurs with similar age, educational background and birthplace as theirs. This strong influence is based on the role of the female entrepreneurs acting as role models to their juniors. The strong female influence is also supported by the study by Rachmawan et al. [4] which showed that mother's occupation has a significant influence on the EI of their students such that mothers who are entrepreneurs influence EI more among their children compared with mothers who worked as civil servants.

Entrepreneurship has been stereotyped to be associated with masculinity. This is attributed to accident's such the "need for achievement" and the "need for power" which have been associated with aspects of masculinity in comparison to femininity [29–31]. These attributes according to these studies have affected daughters more compared to the sons where they are limited to taking up their family business and business identity. This aspect pulls out prospective female entrepreneurs from pursuing entrepreneurship or alternatively pushes them to start their own business venture. However the study observed that despite gender stereotype in entrepreneurship, fathers encourage their daughters to be entrepreneurs and vise versa.

Whilst role modelling is viewed as a strong precursor to entrepreneurship [28] the studies by Karimi et al. [32] and Van Ewijk and Belghiti-Mahut [33] showed that subjective norm influenced females to be entrepreneurs compared to the males. This was attributed to the fact that females are more sensitive to social approval. Thus through role modelling and social approval females would be influenced to be entrepreneurs.

7. Birth order in the family

Birth order has always taken a central position in influencing the human tradition since time memorial. Birth order is described as the numerical sequence in the

child's arrival into a family [34]. Key in the birth order is the first born children. Paulhus [34] further observed that apart from the first born being regarded as their parent's companions hence assigned tougher responsibilities and enjoying family limited resources; the primogeniture tradition gives the first born a special status in the family inheritance. This aspect predisposes the first born to the inheritance of family wealth and this is true in most African cultures where first born sons act as the family spokesperson and controller of family wealth [34]. This implies that first born children and in most cases sons are the inheritors of family business in situations where the parents were entrepreneurs.

Sulloway [35] has explained the difference in the intelligence of the first born in comparison with the later born using Zajonc's confluence model of intellectual ability. According to this model, first born with siblings are the tutors and this gives them intellectual advantage compared to the later born in the family. However this association provides limited information with regards to entrepreneurial intention. A study by Robinson and Hunt [36] showed that there was no relationship between entrepreneurship tendencies and birth order. Adler [37] as quoted by Robinson and Hunt [36], the way the child is raised shapes their personality and consequently their entrepreneurial tendencies. This fact refutes the earlier belief the family order would influence entrepreneurial intention. However, while Robinson and Hunt [36] based their research on the birth order and entrepreneurial tendencies, it is important to note that the birth order theories described by Sulloway [35] and Paulhus [34] tried to express the birth order advantage of first born in comparison with the later born. It is the birth order advantage that influences EI among siblings especially in situations where parents were entrepreneurs.

Last born children tend to break the family norms or traditions [35]. This could be true in cases where either family member were not entrepreneurs in such situations the last born children who tend to be more outgoing and parental strictness less diminished. This prompts them to venture in other professional lines other than family ties.

8. Financial literacy

Whilst financial muscle has been observed as an important ingredient for one to be an entrepreneur [38], the study by Molina [12] observed that entrepreneurs from families which are not financially endowed are more likely to be necessity motivated to be entrepreneurs. This suggests an aspect of finance which is necessary for one to become a successful entrepreneur that is financial literacy. Financial literacy is described as knowledge of financial concepts and skills to manage financial resources. Studies by Aldi et al. [39] and Skica et al. [40] have shown that students who have financial literacy are more likely to be successful entrepreneurs. On the other hand erroneous financial decisions can impact negatively on an entrepreneurial venture. While financial literacy can be taught in a school setting, Antoni et al. [41] showed that parents have a significant role of modelling and reinforcing their student's financial literacy. According to their study, if family would possess responsible financial behaviour then they would most likely teach their students the same. This implies that entrepreneurial members of the family have knowledge on financial literacy and consequently are in a better position to teach their children the same.

9. Summary

The family plays a central role in fostering the antecedents of entrepreneurial intention (personal attitudes, subjective norm and perceived behaviour control) of their students. Aspects of the family that would foster EI are; family entrepreneurial background, family role models, birth order and financial literacy. The study showed that in each of these aspects, the family plays a key role in influencing the students entrepreneurial intention. Consequently students from Entrepreneurial families are more likely to become entrepreneurs compared to children from families that are not entrepreneur. However, the study showed that students can also develop entrepreneurial intention due to family economic needs or a need to break from the family norms.

10. Conclusion and recommendation

The role of the family members in influencing entrepreneurial intention is enormous. Aspects of family background which would have a contributing influence on the student's entrepreneurial intention are family entrepreneurial background, family role modelling, birth order and financial literacy. These aspects when viewed from different angles would have different contributing influence on the students EI. However, Entrepreneurship education would provide students with required competencies that would bring students with different backgrounds on the same platform. This consequently creates a springboard for entrepreneurs. While this would profit students with entrepreneurial background, students with no entrepreneurial background wound also benefit by gaining entrepreneurial competencies. It is therefore important that governments to provide entrepreneurship education to students as a means of imparting requisite entrepreneurial competencies which will be necessary in influencing entrepreneurial intention to the nascent entrepreneurs.

Author details

Moindi Rose Meroka
Department of Educational Foundations, Kisii University, Kenya

*Address all correspondence to: moindirose@gmail.com

References

[1] Imm Song S, Thominathan S, Khalid N. Entrepreneurial intention of UiTM students and the mediating role of entrepreneurship education. Asian Journal of University Education. 2021;**17**(2): 236-251. DOI: 10.24191/ajue.v17i2.13405

[2] Lackeus M. Entrepreneurship in education, what, why, when, how, entrepreneurship 360. In: Background Paper. Paris: OECD; 2015. pp. 17-18

[3] Ajzen I. The theory of planned behavior. Organizational Behavior and Human Decision Processes. 1991;**50**(2):179-211

[4] Rachmawan A, Lizar AA, Mangundjaya W. The role of Parent'sInfluence and self efficacy on entrepreneurial intention. The Journal of Developing Areas. 2015;**49**(3):417-430. DOI: 10.1353/jda.2015.0157

[5] Davis-Kean PE. The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. Journal of Family Psychology. 2005;**19**(2):294-304. DOI: 10.1037/0893-3200.19.2.294

[6] Osunde C. Family businesses and its impact on the economy. Journal of Business and Financial Affairs. 2017;**6**:1. DOI: 10.4172/2167-0234.1000251

[7] Hammond NL, Pearson AW, Holt DT. The quagmire of legacy in family firms: Definition and implications of family and family firm legacy orientations. Entrepreneurship Theory and Practice. 2016;**40**(6):1209-1231

[8] Shapero A, Sokol L. The social dimension of entrepreneurship. In: Kent CA, editor. Encyclopedia of Entrepreneurship. Englewood Cliffs, NJ: Prentice-Hall; 1982a

[9] Sexton DL, Vesper KH. Encyclopedia of Entrepreneurship. Englewood Cliffs, New Jersey: Prentice-Hall. pp. 72-90

[10] Shapero A, Sokol L. The social dimension of entrepreneurship. In: Kent CA, Sexton DL, Vesper KH, editors. Encyclopedia of Entrepreneurship. New Jersey: Prentice-Hall, Englewood Cliffs; 1982b. pp. 72-90

[11] Nguyen C. Entrepreneurial intention of international business students in Viet Nam: A survey of the country joining the trans-Pacific partnership. Journal of Innovation and Entrepreneurship. 2017;**6**:-7. DOI: 10.1186/s13731-017-0066-z

[12] Molina JA. Family and entrepreneurship: New empirical and theoretical results. Journal of Family and Economic Issues. 2020;**41**:1-3. DOI: 10.1007/s10834-020-09667-y

[13] Ranwala RS. Family background, entrepreneurship education and attitude towards entrepreneurship in venture creation: The moderation effect of gender. Entrepreneurship and Innovation Management Journal. 2016;**4**(4):172-186

[14] Engle RL, Schlaegel C, Delanoe S. The role of social influence, culture, and gender on entrepreneurial intent. Journal of Small Business & Entrepreneurship. 2011;**24**(4):471-492

[15] Wolff F, Wigfield A, Möller J, Dicke A-L, Eccles JS. Social, dimensional, and temporal comparisons by students and parents: An investigation of the 2I/E model at the transition from elementary to junior high school. Journal of Educational Psychology. 2020;**112**(8):1644-1660. DOI: 10.1037/edu0000440

[16] Bandura A. Self-efficacy: Toward a unifying theory of behavioral change.

Psychological Review. 1977;**84**(2):191-215. DOI: 10.1037/0033-295x.84.2.191

[17] Sabah S. Entrepreneurial intention: Theory of planned behavior and the moderation effect of start-up experience. In: Entrepreneurship - Practice-Oriented Perspectives. London, UK: InTech Open; 2016. DOI: 10.5772/65640

[18] Georgescu M, Herman E. The impact of the family background on students' entrepreneurial intentions: An empirical analysis. Sustainability. 2020;**2020**(12):4775. DOI: 10.3390/su12114775

[19] Gunarso MT, Selamat F. The influence of entrepreneurial education, and family background on entrepreneurship intention with self-efficacy as a mediating variable in final year undergraduate students in Jakarta. In: The 2nd Tarumanagara International Conference on the Applications of Social Sciences and Humanities (TICASH 2020). Jakarta, Indonesia: Atlantis Press; 2020. DOI: 10.2991/assehr.k.201209.097

[20] Ardichvili A, Cardozo R, Ray S. A theory of entrepreneurial opportunity identification and development. Journal of Business Venturing. 2003;**18**(1):105-123. DOI: 10.1016/S0883-9026(01)00068-4

[21] Hsueh JW, Zellweger TM. A Gift or a Curse? The Influence of Family Business Background on Next-Generation Entrepreneurship. St. Gallen: HSG-CFB; 2018

[22] Mwange A, Chilinda MM, Marien M. An assessment of selected antecedents of entrepreneurship intentions and the level of entrepreneurial intention among final-year undergraduates at the University of Zambia. IJRDO - Journal of Business Management. 2020;**6**(7):49-86. DOI: 10.53555/bm.v6i7.3777

[23] Kamitewoko E. Exploring entrepreneurial intentions in Marien Ngouabi university students. Open Journal of Social Sciences. 2021;**9**:75-93. DOI: 10.4236/jss.2021.911007

[24] Bosma N, Hessels J, Schutjens V, Van Praag M, Verheu J. Entrepreneureship and role models. Journal of Economic Psychology. 2011;**33**:410-424. DOI: 10.1016/j.joep.2011.03.004

[25] Boldureanu G, Ionescu AM, Bercu A, Grigoruta MV, Boldureanu D. Entrepreneurship education through successful entrepreneurial models in higher education institutions. Sustainability. 2020;**12**(3):1-33

[26] Carr JC, Sequeira JM. Prior family business exposure as intergenerational influence and entrepreneurial intent: A theory of planned behavior approach. Journal of Business Research. 2007;**60**:1090-1098. DOI: 10.1016/j.jbusres.2006.12.016

[27] Carli LL. Social influence and gender. In: Harkins SG, Williams KD, Burger J, editors. The Oxford Handbook of Social Influence Oxford Library of Psychology. online ed. Oxford Academic; 2014. DOI: 10.1093/oxfordhb/9780199859870.013.16

[28] Rocha V, van Praag M. Mind the gap: The role of gender in entrepreneurial career choice and social influence by founders. Strategic Management Journal. 2020;**41**(5):841-866

[29] Lerchundi IP, Alonso CM, Pérez V, María A. Does family matter? A study of parents' influence on the entrepreneurial intention of technical degrees students in Spain. In: "IFKAD 2014 - Knowledge and Management Models for Sustainable Growth", 11-13 June 2014. Italy: Matera; 2014. pp. 1-15

[30] Minniti M, Allen E, Langowitz N. The 2005 Global Entrepreneurship Monitor Special Topic Report: Women in Entrepreneurship. Babson Park, MA: Center for Women Leadership, Babson College; 2006

[31] Sentuti A, Cesaroni FM, Pediconi MG. Daughter entrepreneurs between birth family and gender stereotypes. In: Paoloni P, Lombardi R, editors. Gender Studies, Entrepreneurship and Human Capital. Springer, Proceedings in Business and Economics; 2020. DOI: 10.1007/978-3-030-46874-3_5

[32] Karimi S, Biemans HJA, Lans T, Chizari M, Mulder M. Effects of role models and gender on students entrepreneurial intentions. European Journal of Training and Development. 2014;**38**(8):694-727. DOI: 10.1108/EJTD-03-2013-0036

[33] van Ewijk AR, Belghiti-Mahut S. Context, gender and entrepreneurial intentions: How entrepreneurship education changes the equation. International Journal of Gender and Entrepreneurship. 2019;**11**(1):75-98. DOI: 10.1108/IJGE-05-2018-0054

[34] Paulhus DL. Birth Order. In: Haith MM, Benson JB, editors. Encyclopedia of Infant and Early Childhood Development. San Diego: Academic Press; 2008

[35] Sulloway FJ. Birth order and intelligence. Science New Series. 2007;**316**(5832):1711-1712

[36] Robinson PB, Hunt HK. Entrepreneurship and birth order; fact or folklore. Entrepreneurship and regional Development. 1992;**4**(287-298):56-57

[37] Adler A. The Education of the Individual. New York: Greenwood Press; 1958

[38] Peng Z, Lu G, Kang H. Entrepreneurial intentions and its influencing factors: A survey of the university students in Xi'an China. Creative Education. 2012;**3**:95-100. DOI: 10.4236/ce.2012.38B021

[39] Aldi B, Herdjion EI, Maulang G, Fitriani. The influence of financial literacy on entrepreneurial intention. In: Conference Paper. 2019. DOI: 10.2991/icame-18.2019.7

[40] Skica T, Mikus J, Holienka M. Financial literacy and new business entry. Financial Internet and Quarterly. 2022;**18**(2):42-66. DOI: 10.2478/fiqf-2022-0012

[41] Antoni ZL, Rootman C, Struwig FW. The influence of parental financial socialisation techniques on student financial behavior. International Journal of Economics and Finance Studies. 2019;**11**(2):1309-8055

Chapter 13

Entrepreneurial Intention, Life Satisfaction, and Impulsivity in University Students

Azucena de María Arredondo Perez
and Sheyla Verónica Morales Palma

Abstract

The study sought to determine the relationship between entrepreneurial intention, life satisfaction, and impulsivity of students at an university in Cusco. The stratified sample consisted of 150 students from the professional career in Management and Psychology. There were considered in the study the entrepreneurial intention subscale, the life satisfaction scale, and the Dickman impulsivity inventory. There was found a relationship between entrepreneurial intention and impulsivity (p = .044), so impulsivity would play an important role in entrepreneurship. Likewise, a significant difference was found between Psychology and Management students regarding their entrepreneurial intention, so there is a greater intention of entrepreneurship among Management students.

Keywords: entrepreneurship, entrepreneurial intention, life satisfaction, impulsivity, functional, dysfunctional

1. Introduction

It has been observed that the professional training provided by universities in the Peruvian region, for the most part, offers a limited education since it only focuses on subjects exclusive to the science of study, from which many student competencies are not identified and developed, such as entrepreneurial skills, as part of the solution to the economic and social problems facing our country.

Thus, the Universidad Andina del Cusco, during these last years, has been holding different events on various topics, one of which is one of the topics that has been addressed has been entrepreneurship; however, many of these events have been sectorized, that is, they have only occurred in some professional schools, as is the case of Expoandina, Expoempresa, and Start-Up, the first is related to science, innovation, and technology, and the last two are directly linked to entrepreneurship. However, when students from the Professional Career of Psychology and other Professional Career of Health Sciences were consulted about their knowledge and participation in both events, most of the students indicated that they did know about were unaware of these events.

At present, most university students who are about to graduate face complicated situations (unemployment, not practicing the profession for which they were trained, or inadequate working conditions), which can lead to low life satisfaction. Likewise, since most of them are adolescents and young adolescents and young people, they present characteristics of their life cycle, such as impulsive behaviors, which can affect the way they face these types of situations.

Therefore, this study was conducted following the codes and principles of professional ethics, through which informed consent has been requested as well as access to the population, which has allowed to focus the problem from the university education provided in the university population of Cusco, describing the problem, methodology, results, discussion, and bibliographical references.

2. Problem description

Within the university context, there are different age groups; however, most of them are made up of adolescents and young people, who face the adjustments and changes proposed by the academic entity to develop their training projects, and in turn, these changes are accompanied by the personal and social development of each student as part of their life cycle; therefore, they face complex situations but in an inadequate manner, and it is reflected in the various inappropriate behaviors disfavoring the academic, personal, labor and social areas, and above all, affecting the professional development.

These complex situations manifest themselves with greater intensity when students are about to graduate since the search for and insertion into the labor market is often an uncertain scenario and quite different from previous aspirations; therefore, they begin their working life in different areas where they were not prepared, or in any case, they work in inadequate conditions generating low satisfaction in the various areas of their lives, as well as, they may feel stress, frustration, anxiety, among others.

Consequently, the International Labor Organization [1] stated that economic consumption has shown that labor inactivity has increased, of which, in 2015, 197.1 million people with this problem were witnessed, covering all contexts, as well as, this entity refers that professionals work in various fields of action without having the respective preparation or training, or in any case, they work in irregular jobs.

Likewise, the Organization for Economic Cooperation and Development [2] indicated that one-fifth of the 163 million young people living in Latin America work in informal jobs, as well as the other fifth neither work nor study nor are in training, mostly, evidenced in those populations whose prevalence are more disadvantaged socioeconomic groups. On the other hand, in Peru, this problem is no different, as shown by official data from the National Institute of Statistics and Informatics, which states that most university graduates finish their studies between 21 and 30 years of age, of which only 25.2% of this population is working [3].

Therefore, the action of entrepreneurship generates a necessary and important role for national and regional economic growth, as shown by the studies of the Global Entrepreneurship Monitor (GEM) [4] where it refers that entrepreneurship allows the increase of greater job opportunities, as well as the development of technical innovation accompanied by economic progress. Likewise, GEM Peru in 2018 stated that young people have greater skills and opportunities for entrepreneurship, which will allow boosting inclusive economic development [5].

Thus, entrepreneurship is considered a professional way out of unemployment, it also allows one to obtain happiness and balance, and this is reflected in the study developed at the University of Camilo de Cela where they found that entrepreneurs have a greater sense of well-being and above all satisfied with their lives, compared to those who are not involved in the management of their own business [6].

On the other hand, university students, being in the life phases of adolescence and youth, mostly show different behaviors, among them, impulsivity and risky decision-making, for which they respond in a little consensual and immediate way to new circumstances, as reflected in the behaviors associated with the initiation and progress of alcohol and other substance's consumption [7].

Thus, impulsivity is considered as the personal ability to act quickly without much deliberation, that is, without evaluating the consequences that could arise; however, even though many studies show negative consequences of impulsivity, Dickman [8] found that people who show impulsive behaviors perform better than individuals who are not impulsive; as in the case of very simple experimental tasks, where very impulsive people developed immediate responses and with fewer errors as opposed to those who were not impulsive; on the other hand, in tasks with short time, impulsive individuals responded accurately.

Therefore, most adolescents and young people are predisposed to perform impulsive behaviors that are linked to risky events, responding positively (adequate interpersonal, vocational, intrapersonal relationships, and optimal development in various personal areas), as well as negatively (aggressive behavior, substance use, among others), and also negatively (aggressive behaviors, substance use, among others), since they are in the stage of seeking various new sensations and immediate reinforcements; however, these negative behaviors would be avoided, as long as the level of satisfaction with their life is high [9, 10].

In conclusion, if the university is made up of adolescent and young graduates, whose particular characteristic is the search for new sensations and risk, this could be used by the academic environment to propose new circumstances with positive risk, such is the case of entrepreneurship, allowing them to adequately face the work environment, as well as to increase the levels of satisfaction with life. Likewise, if the level of satisfaction with life is low, it would serve to promote and generate new opportunities, because it provides new experiences that generate challenge and commitment. In turn, GEM [11] refers that entrepreneurship originated from necessity rather than an opportunity.

For this reason, it was established as a research objective to determine the relationship between entrepreneurial intention, life satisfaction, and impulsivity in ninth and tenth-cycle students of the Professional career of Psychology and Administration at the University Andina of Cusco, 2017, and also, several specific objectives were established descriptively for each variable, as well as comparisons according to cycles.

2.1 Methodology

A quantitative, non-experimental approach has been considered for the development of this study, under a correlational–transactional design, since the variables were not manipulated, and the phenomena were observed as they occur in their natural context, at a specific time, as well as to determine the relationship between the variables [12].

On the other hand, the population consisted of 247 students from both professional careers (Administration and Psychology), from which the stratified

probability sample was estimated, obtaining 150 students, 94 students for the career of Administration, and 56 students for Psychology, in turn, the instruments of the subscale of the entrepreneurial intention questionnaire (CIE), satisfaction with life scale (SWLS), and Dickman's impulsivity inventory were used.

Concerning the entrepreneurial intention questionnaire, its origin is Spain, the author Francisco Liñan, whose administration is individual and group, where the application time is estimated between 5 minutes (subscale) and 15 minutes (complete questionnaire); it has four subscales: professional attraction; subjective norm, self-efficacy, and intention, of which, each scale is composed of a Likert scale from 1 to 7 [13].

Regarding the validity and reliability of the instrument, both in Spain and Taiwan, its psychometric properties were verified [13–15]; on the other hand, in Peru, a factor loading of .71 to .85 was found for the entrepreneurial intention subscale, as well as a reliability value of .90 [6]. On the other hand, for the development of this study, construct validity was determined using exploratory factor analysis, using the principal component's method, of which the KMO tests obtained a value of .874 and Barlett's test of sphericity was also statistically significant ($p < .000$; $X^2 = 1161.650$; gl = 15). These values indicate that the test items are correlated and can form factors; on the other hand, when performing the analysis, 81.8% of the total variance was obtained, with factor loading ranging from .721 to .975; likewise, internal consistency was obtained using Cronbach's alpha coefficient, obtaining .951.

The satisfaction with life scale (SWLS) has American origin, whose author is Ed Dienner, its form of administration is individual and group, so it consists of 10 items, with a Likert scale from 1 to 5, whose administration time is 5 minutes, in turn, about the validity and reliability was found a single factor that explained 57.63% of the total variance and a Cronbach's alpha of .81 [16].

The impulsivity inventory, whose author is Scott Dickman, also had a Spanish adaptation by Eduardo Pedrero [17] and consists of 23 items divided into two subscales: 11 items for functional impulsivity and 12 items for dysfunctional impulsivity, whose responses are dichotomous; of which, concerning the psychometric properties, the internal consistency was obtained by Cronbach's alpha coefficient, obtaining a coefficient of .74 for the IF scale and .86 for the ID scale [17].

In turn, for the application of the instruments, authorization was obtained from the academic heads of both professional careers, and the participants also signed the informed consent; on the other hand, for the data analysis, an exploratory factor analysis of the entrepreneurial intention subscale was carried out, as well as the internal consistency for all the instruments. Chi-square and Student's t-square statistics were used, and SPSS version 20.0 was used for data analysis.

2.2 Results

2.2.1 Preponderant levels

It was found that both entrepreneurial intention and satisfaction with life presented a high level; concerning impulsivity, students reflected functional impulsivity with a higher percentage (**Table 1**).

2.2.2 Difference between professional career

To determine if there are differences between professional careers, a significant difference was found between the entrepreneurial intention according to

Level or type	Management	Psychology
Entrepreneurial intention		
High	90.4%	67.9%
Average	6.4%	16.1%
Low	3.2%	16.1%
Life satisfaction		
High	55.3%	71.4%
Average	42.6%	28.6%
Low	2.1%	0%
Impulsivity		
Functional	51.1%	58.9%
Disfunctional	48.9%	41.1%

Table 1.
Entrepreneurial intention, life satisfaction, and impulsivity according to a professional career.

professional career (t = 5.205; p = .000), that is, the career of administration presents greater entrepreneurial intention as opposed to the psychology students. On the other hand, life satisfaction (t = −1.501, p = .135) and impulsivity (X^2 = .874; p = .350).

2.2.3 Correlation between variables

To determine the relationship between the entrepreneurial intention and impulsivity variables, a relationship was found with an X^2 = 6.265 and a p-value of .044. On the other hand, no relationship was found between the entrepreneurial intention and life satisfaction variables (X^2 = 3.906; p-value of .419) and between life satisfaction and impulsivity (X^2 = 2.122; p-value of .346). Also, as a complementary analysis, the business motive was found to be related to entrepreneurial intention (X^2 = 16.442, p = .036).

2.2.4 Validity and reliability of the entrepreneurial intention subscale

The maximum likelihood procedure and exploratory factor analysis were used (**Table 2**).

2.3 Discussion

One of the results found was that there is no relationship between satisfaction with life and entrepreneurial intention, which differs from the study conducted by Paredes in a sample of Peruvian university students, where he aimed to establish the relationship between satisfaction with life and entrepreneurial intention, finding the correlation between the variables mentioned, applying in that study the point biserial correlation with a p = .05 value. However, despite the existence of a relationship between both variables, it obtained a statistically very low result, which leads to the conclusion that it is necessary to replicate the study to confirm or deny the existence of a relationship between both variables [6].

Factor	Correlation element-corrected total	Cronbach's alpha if the element is removed	Initial eigenvalues			Sums of squared extraction saturations			Factorial matrix
			Total	% Of variance	% Accumulated	Total	% Of variance	% Accumulated	
1	.883	.941	4.913	81.883	81.883	4.657	77.621	77.621	.778
2	.901	.936	.513	8.546	90.429				.721
3	.900	.936	.334	5.562	95.991				.867
4	.783	.952	.112	1.859	97.849				.967
5	.824	.945	.084	1.405	99.254				.946
6	.917	.941	.045	.746	100.000				.975
Extraction method: Maximum Likelihood									

Table 2.
Validity and reliability.

On the other hand, no relationship was found between entrepreneurial intention and satisfaction with life; however, the study conducted by Hinojosa and Albornoz allows hypothesizing the existence of an inverse relationship between both variables, which was executed in 3958 adults of Chilean nationality, and the study was carried out on 3958 adults of Chilean nationality, whose ages ranged between 18 and 64 years, measuring happiness through the life satisfaction scale whose result was more significant, concluding that individuals showed a higher degree of happiness and satisfaction with their life and therefore were less likely to invest the intention to undertake; therefore, there was an inverse relationship, that is to say, if there is greater happiness, there will be a lower probability of intention to undertake; otherwise it will be the other way round [18].

In turn, no relationship was found between satisfaction with life and impulsivity, as well as, no antecedents linking both variables were found; however, the research conducted by Paramo, Straniero, Garcia, Torrecilla, and Escalante was located where they considered the objective of correlating personality traits and psychological well-being in undergraduate psychology students, deducing that some personality traits such as intuition, sensation, sociability, extraversion, decisiveness, innovativeness (creative and risk-taking), and dominance (dominant and socially aggressive) present intense association with psychological well-being, therefore, psychological well-being forms a part of life satisfaction, as well as, personality traits tend to correlate with impulsivity, since, among the traits is the propensity to risk [19].

On the contrary, in the present study, a relationship was obtained between entrepreneurial intention and impulsivity; however, despite being statistically significant, it is weak in intensity, since it goes beyond the standard error, in which the participants presented 58.5% of high entrepreneurial intention correlated with 54% of functional impulsivity. Although there are no antecedents that establish a similar relationship between both variables, as previously indicated, impulsivity is related to some personality traits such as risk propensity, for which, the study of Sanchez [20] was found whose sample was in university entrepreneurs and its purpose was to understand the relationship of the five personality traits based on business practice preferences and entrepreneurial intentions, in which he concluded that entrepreneurial intention is positively related to personality traits such as emotional stability, extraversion, conscientiousness, agreeableness, and openness to experience, the latter being linked to risk-taking.

Also, another of the studies found by Wiklund, Wei, Tucker, and Marino elaborated on MBA alumni, who graduated from a university in the southern United States, whose objective was to establish the influence that impulsivity has on entrepreneurial action, which they concluded that there is a great influence of impulsivity in entrepreneurial practice since it is a trait that arises in entrepreneurs more frequently, unlike the rest of individuals, in turn, it intervenes in different phases of entrepreneurship [21].

About the existence of significant differences between schools, a difference was found between the students of the Professional Schools of Psychology and Administration, where a greater entrepreneurial intention predominates in the Professional School of Administration in contrast to the Professional School of Psychology, and this result is similar to Bernales' study, which found a high entrepreneurial intention in students of administration or economics careers and was contrasted with students of humanities careers [22]. On the other hand, concerning sex, the present study highlights that this factor is not associated with entrepreneurial

intention and corroborates with the study of Bernales, who indicates that neither age nor sex plays a determining role when it comes to entrepreneurship; however, as a complementary analysis, it was found that the business motive is related to entrepreneurial intention.

Finally, this study also shows that there are no significant differences in the intention to undertake between men and women; however, Toledano [23] obtained in his study results that men have greater intention to undertake compared to women, that is to say, that women have many limitations given by extrinsic and intrinsic factors, as is the case of perception, since they tend to appreciate themselves and their environment as unfavorable, compared to men who perceive the opposite, on the other hand, another limitation apart from cultural barriers is that women have a lower propensity to risk, they will invest in a business that has a lower risk even if the profit is not very high, unlike men.

3. Conclusions

- A statistically significant relationship was found between entrepreneurial intention and impulsivity, in turn, functional impulsivity is related to high entrepreneurial intention.

- No relationship was found between satisfaction with life and entrepreneurial intention, despite students presenting high satisfaction with life and high entrepreneurial intention.

- No relationship was found between satisfaction with life and impulsivity, despite higher cases of the presence of functional impulsivity in the study population and a high level of satisfaction with life.

- Students from both professional careers (Management and Psychology) presented a high level of the variables entrepreneurial intention and satisfaction with life.

- The students who were evaluated presented with a higher percentage of a functional impulsivity type.

- A significant difference was found between entrepreneurial intention and both professional careers, meaning that the career of management presented higher entrepreneurial intention.

- Concerning the life satisfaction and impulsivity variables, no significant differences were found in both careers, since they presented a high level of life satisfaction and functional impulsivity for both.

- The gender variable was not considered as a factor associated with entrepreneurial intention, since no significant difference was found.

Conflict of interest

The authors declare no conflict of interest.

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Author details

Azucena de María Arredondo Perez* and Sheyla Verónica Morales Palma
Andean University of Cusco, Cusco, Perú

*Address all correspondence to: azucena12arredondoperez@gmail.com

References

[1] OIT. Social Prospects and Employment in the World. Ginebra: International Labor Organization; 2016

[2] CEPAL. Latin American Economic Outlook 2017: Youth, Skills, and Entrepreneurship. Paris: Economic Commission for Latin America and the Caribbean. p. 2017

[3] National Institute of Statistics and Informatics Peru: Evolution of Employment and Income indicators by department, 2007-2016; 2017

[4] Reynolds P, William B, Erkko A, Cox L, Hay M. Global Entrepreneurship Monitor. Londres: Ewing Marion Kauffman Foundation; 2002

[5] Serida J, Alzamora J, Guerrero C, Borda A, Morales O. Global Entrepreneurship Monitor. Lima: ESAN y GEM; 2018

[6] Caña M, Michelini Y, Acuña I, Godoy J. Effects of impulsivity and alcohol consumption on decision making in adolescents. Health and Drugs. 2015;**15**(1):55-66. DOI: 10.13140/RG.2.1.4639.1842

[7] Paredes C. Relationship between entrepreneurial intention, aspirations and satisfaction with life in university students in Lima [thesis]. Lima: Universidad Peruana de Ciencias; 2015

[8] Dickman S. Impulsivity and perception: Individual differences in the processing of the local and global dimensions of stimuli. Journal of Personality and Social Psychology. 1985;**48**(1):133-149. DOI: 10.1037/0022-3514.48.1.133

[9] De Sola J, Rubio G, Rodriguez F. Impulsivity: The prelude to behavioral addictions? Health and Addictions. 2013;**13**:145-155. DOI: 10.13140/RG.2.1.2083.2804

[10] Tirado M. Evaluation of psychosocial variables related to risk perception and health behaviors in emerging adulthood [thesis]. España: Universidad Miguel Hernández; 2017

[11] Global Entrepreneurship Research Association. Global Entrepreneurship Monitor Global Report 2016/17; 2017

[12] Hernández R, Fernández C, Baptista P. Investigation Methodology. 6th ed. México D.F: McGraw Hill; 2016

[13] Liñán F. Development and validation of an Entrepreneurial Intention Questionnaire (EIQ). In: 15th Internationalizing Entrepreneurship Education and Training Conference. 2005. pp. 1-14

[14] Alonso P. The configuration of entrepreneurial intention among academics responsible for research projects in Spain. A gender approach [hesis]. España: Universidad de Cantabria; 2012

[15] Martínez G, Campos G. Entrepreneurial intention among university students: The case of the university of Deusto. Boletín de Estudios Económicos. 2014;**69**(211):15-172

[16] Martínez P. Future time perspective and life satisfaction throughout the life cycle. PSICO. 2004;**22**(2):217-252

[17] Pedrero E. Assessment of functional and dysfunctional impulsivity in substance abusers using the Dickman Inventory. Psicothema. 2014;**21**(4):585-591

[18] Hinojosa S, Albornoz C. Willingness to undertake and happiness: An exploratory study based on the global entrepreneurship monitor in Chile. Journal of Technology Management and Innovation. 2012;**8**(1):76-89

[19] Páramo M, Straniero C, Torrecilla M, Escalante E. Psychological well-being, personality styles and life objectives in university students. Pensamiento Psicologico. 2012;**10**(1):7-21

[20] Sánchez F. Relationship between entrepreneurial intention, business practice, and personality traits in undergraduate university entrepreneurs [thesis]. Lima: Pontificia Universidad Católica del Perú; 2017

[21] Wiklund J, Wei Y, Tucker R, Marino L. ADHD, impulsivity and entrepreneurship. Journal of Business Venturing. 2017;**32**(6):627-656

[22] Bernales M. Entrepreneurial intention and immigration factors in Peruvian university students [thesis]. Lima: Universidad Peruana de Ciencias Aplicadas; 2010

[23] Toledano N. Entrepreneurial prospects of university students: An empirical study. Revista de educación. 2005;**341**:803-828

Chapter 14

Digital Entrepreneurship in Vocational High School Student Level

Darma Rika Swaramarinda, Badrul Isa, Noorhayati Mohd. Yusof and Mohd. Ali Bahari Abdul Kadir

Abstract

Digital entrepreneurship is becoming more popular, so now is a great time to learn more about it. This research aims to find out how digital entrepreneurship knowledge in Vocational High School Students. The novelty of this present study is that it looks at digital entrepreneurship using a mixed-methods and focuses on Vocational High School Students as its subject. The sample used was twelve student respondents who had met the saturation criteria in the qualitative phase; from the results of the qualitative phase, several themes came up from the interview process using inductive code on the thematic analysis. However, the researchers only focused on the digital entrepreneurship theme based on the need for this theme at the vocational high school level. Then, the quantitative phase investigates in deep of other data and is processed using questionnaires. The result begins with a validity test in which R calculates each indicator its value above the table R-value of 0.576, while for the test the reliability of Cronbach's Alpha value 0.966 has high reliability. Furthermore, using the Kolmogorov-Smirnov normality test found the data was normally distributed and homogeneous. Independent Sample t Test is known that there is a difference in digital entrepreneurship knowledge between Male and Female Students.

Keywords: digital entrepreneurship, students, vocational high school, technological advancements, digital era

1. Introduction

In the twenty-first century, often known as the era of technological advancement, there are numerous elements and sciences pertaining to everything, one of which is the digital area. In this digital era, everyone is essential to keep up with technological advancements and improve their skills, as the digital area is currently very beneficial to the advancement of science. The use of mobile phones, laptops, electronic gadgets, and social media devices is one of the innovations we can observe nowadays.

Since digital entrepreneurship has become more prevalent in recent years, now is a great time to study this topic. So, digital entrepreneurship can be a growth driver in a world after a pandemic [1]. The topic of digital entrepreneurship in the field of

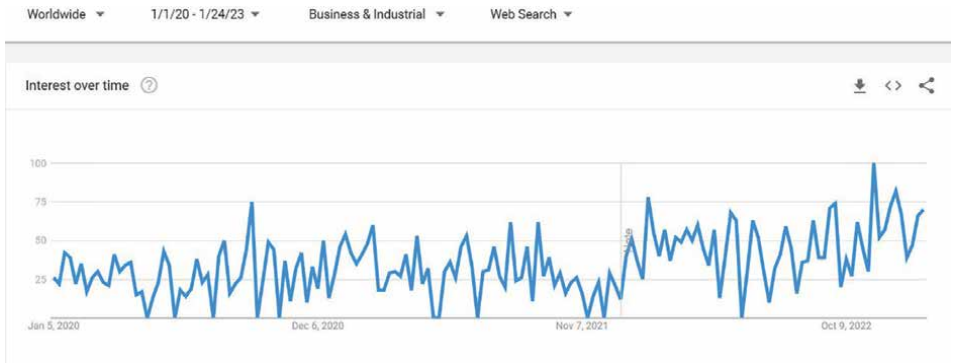

Figure 1.
Google trends of digital entrepreneurship. Source: (https://www.google.com/trends).

industry and business in the world is also exciting in line with the covid 19 pandemic, where digital is inevitably applied in people's daily lives today. The following google trends also show that people's interest in digital entrepreneurship has started to increase since the beginning of the pandemic in 2020 (**Figure 1**).

Next, with a population of 273 million, the Unitary State of the Republic of Indonesia is one of the countries with the most significant population; hence it can be argued that Indonesia has a tremendous human resource potential. However, the government needs to maximize this potential. In addition, many Indonesian residents are forced to study for up to twelve years, following which they are free to attend college or seek employment. Currently, numerous infractions are committed by Vocational High School Students; consequently, issues result from the above causes. Many graduates of vocational high schools lack the necessary knowledge, making it difficult for them to make decisions about their future. According to statistics from the Central Statistics Agency from 2022, The level of Open Unemployment for Secondary Students is 10.38%, and the unemployment rate for vocational high school students is higher than for other education graduates [2].

One way to deal with this is for vocational high school graduates to start their businesses so they can stay alive in a world that is becoming more advanced. This aligns with the government's efforts to help these graduates run their businesses through the MSME program. One way to help a country develop is to stop it from being a consumer country. However, Indonesia still needs to work on moving forward because only 3.18 percent of its people are entrepreneurs, which is far behind Singapore and even other ASEAN countries [3]. At the moment, Indonesia is one of the best places for the creative industry to grow. This industry can make a significant economic difference, create more jobs, and increase the country's GDP. If people want to start their business in this digital age, they can use marketplaces like Shopee and even Tiktokshop to help them. So that it can help promote the process and use marketing to put it into place. In this digital age, entrepreneurs can make a lot of money quickly because Indonesians are very consumerist and have never been without their own gadgets. As Hassan [4] stated that with all the different apps that can be accessed through the internet, it helps a business grow all over the world. Through digital entrepreneurship, many traders or business owners use online tools like blogs, Facebook, Instagram, and even e-business apps to reach more customers and make it easier to sell and buy goods.

Nevertheless, technology development in Indonesia needs to keep up with the culture, so the 2016 National Financial Survey by the Ministry of Development and Protection of Consumers found that openness to public information still needs improvement. Only 4.4% of Indonesians are financially and economic literate [5]. Then, anyone can do digital entrepreneurship, including students and the general public. This means that people can do these activities to buy things they need and get better at what they already know how to do. Vocational students also learn about entrepreneurship so that they are ready to start their own businesses in this digital age. It's easy to run a business from anywhere as long as you can get online. The phenomenon in the field is that there is already a policy to study entrepreneurship in vocational schools for twelve hours a week for two years, but the reality is that graduates who become entrepreneurs is still low. Therefore, this present study also needs to examine about what vocational high school students know about digital entrepreneurship. This present study aims at what both male and female vocational high school students' digital entrepreneurship knowledge. Furthermore, this present study focuses on digital entrepreneurship at the vocational high school level, which students do.

So that the researcher reviewed at past studies to figure out what new research will be done. In the study, Jaenudin [6] discussed about how students' interest in business and digital technology affects them. Zulafwan [7] researched Digital Entrepreneur Training during the COVID-19 Pandemic at Informatics and Computer Management Academy Dharma, and Ninik et al. [8] researched Digital Entrepreneur Training with 240 students from 91 different colleges. In line with Gunawan's [9] following research on digital entrepreneurship training to create an entrepreneurial generation at Cikarang High School, the research above is also accurate. Hazwardy [10] also talked about how the Digital Entrepreneurship training at Senior High School 1 Cikarang helped millennials learn how to be entrepreneurs. Also, Netrawati et al. [11] said that digital business was introduced to younger people to help Alawiyah Madrasah students develop an entrepreneurial spirit. Yusuf et al. [12] said that counseling was done to help students improve their ability to be entrepreneurs. Hence, it can be seen that past studies used training and counseling to change students' minds about starting their own businesses, and much research is still done on college and senior high school students. Based on what has been said about previous studies, the new thing about this present study is that it looks at digital entrepreneurship by using mixed-methods research method and focuses on Vocational High School Students as its subject. As Vejayaratnam et al. [13] stated that there are not many studies on digital entrepreneurship, especially among students in TVET programs. This is the contribution of this study for the current literatures. This present study can also be used by the government and school administrators to find out how much students know about digital entrepreneurship. This will help them make better changes to improve the quality of human resources, especially students, in business, which will reduce unemployment. Moreover, Handaru et al. [14] said that vocational high school has the chance to meet the challenges of industry 4.0 because it prepares students to enter the workforce and compete in their fields of expertise.

Next section, this present study will provide a literature review regarding entrepreneurship, digital entrepreneurship, and other constructs related to the findings; then, it will explain the study method used and display the findings that occurred in the field, finally providing conclusions and research recommendations that can be used for future research.

2. Literature review

Before discussing digital entrepreneurship, we must know the meaning of Digital and Entrepreneurship. According to Rahayu [15], the digital era is an era or time when some people in that era have used digital systems in their daily lives. Muhasim [16] said that digital is a concept that starts with 0 and 1 and describes life and death. The digital process is based on algorithmic logic, and digital can do many different things, such as the process of consumption, distribution, and production, all in one system. Danuri [17] said that digital technology contains information whose use is more critical with digital than with human labor because an operating system with a computerized system is already automated. Meanwhile, in [18], it is said that digital technology has made it possible for people to connect and interact in new ways in cities and around the world. Digital means we can go beyond the physical and focus on interaction and new regional and global possibilities. Krismono [19] said that digital technology makes all processes more effective and efficient, from making the product to distributing it. It also gives business actors access to the market. Based on what the above experts said, it can be concluded that digital technology is an era when individuals use technology every day, and every process is done with technology. It has been advantageous and helpful, which has been helped by the use digital tools.

Drucker [20] asserts that the idea of entrepreneurship is to make something new and different. While Diandra [21] said that entrepreneurship is a part of the business that helps set up a successful business, people involved in most business activities are responsible for making their vision come true. In addition, according to Prince [22], the definition of entrepreneurship today includes many different things, such as looking for opportunities, starting a business, dealing with uncertainty, trying to make money, and much more. This shows the many different points of view that exist in entrepreneurship and beyond. In line with what was said above, Onouha [23] said that entrepreneurship is the practice of starting a new organization or reviving an old one, especially a new business, usually in response to opportunities that have been seen. Entrepreneurship is a complicated term that is hard to define. This makes it hard to measure the amount of entrepreneurial activity and, as a result, its effect on the economy [24].

Entrepreneurs are known for the fact that they start and run their own businesses. Asia's economic growth can be continued with innovative business owners' help. Asia, which is still developing, has reached a point where the private sector usually plays a more significant role in economic growth. The ongoing digitalization of economic activity, which sped up during the coronavirus disease (COVID-19), has made it easier and cheaper to start a business and given entrepreneurs a lot of new options. So, digital entrepreneurship can be a growth driver in a world after a pandemic [1].

After gaining knowledge of what digital and entrepreneurship mean, Nedumaran [25] said that digital entrepreneurship is creating new businesses and changing existing ones by developing new digital technologies and new ways to use them. Yeboah et al. [26] claim that digital entrepreneurship is generally defined as using digital technology to look for business or economic opportunities. Digital entrepreneurship is very current because new technologies and improvements in infrastructure open up many business opportunities [27] and other understandings from Digital Entrepreneurship that is finding new business opportunities on the internet and in new media and taking advantage of them. Hussain et al. [28] said that it was discussed how digital entrepreneurship involves new ways of building and running a business that is made possible by technological advances. Long [29] said that digital entrepreneurship is a new way that digital technology and entrepreneurship are coming together to change

the real economy and how industries are set up. Based on what the experts said above, researchers concluded that digital entrepreneurship is the process of starting a new business using technology in the best way possible. Hassan [4] stated that if cost and time were issues in the past, they limited trade. When digital entrepreneurship is used, costs for things like transportation, maintenance, and advertising can be cut. Different time zones no longer make it hard to do business. This is because of digital entrepreneurship, which is a way to speed up business activities. During COVID-19, ICT was a critical factor in how resilient entrepreneurs and businesses were. When entrepreneurs needed help moving around like they used to, the internet allowed them to sell their products, talk to their employees, and meet potential business partners online. In this way, digital technology helped lessen the pandemic's effects, which were very bad for business. In fact, it saved the businesses of many people who would have gone out of business without it. In reality, many stores that had to close because of a lockdown turned to online orders to make sales and money [1].

Things that digital entrepreneurship works, according to Syamsyuri et al. [30], are a financial plan, finding the business's strengths, choosing a market niche, evaluating supply and demand, evaluating the market, following market trends, analyzing the market and competitors, making idea prototypes, and promoting the business. According to Raut [31], these are cultural and informal institutions, market conditions, physical infrastructure, human capital, knowledge creation and dissemination, finance, networking and support, and formal institutions. Vineela [32] agreed with what was said above and said that the five pillars of digital entrepreneurship are the digital knowledge base and ICT market, digital business environment, access to finance, digital skills, e-leadership, and entrepreneurial culture.

3. Research methods

This present study used the mixed methods research, qualitative phase first, then quantitative in the second phase. This present study used a quantitative approach with the survey method in the quantitative phase, which is carried out with twelve respondents from Vocational High School students who have met the saturation criteria of the qualitative phase in the first phase. According to Creswell [33], qualitative data saturation occurs when the researcher stops collecting data because new data no longer generates new ideas or properties. Guest et al. [34] reported that saturation around 12 responders. After twelve informants, data becomes saturated.

The data collection using interviews and the survey method. The data analysis technique in this present study is thematic analysis and descriptive analysis. For the qualitative using interview then analyzed using NVivo tools, meanwhile the quantitative phase using a questionnaire, then analyzed using SPSS (Statistical Program for Social Science). Then, in the test that will be carried out, namely by doing one t-test and looking at the regression test.

4. Research results

The idea for the theme of digital entrepreneurship came from the results of a thematic analysis that was conducted by researchers in the qualitative phase. The present study then coded the most often referenced and relevant themes, which it considered essential to the project's overall subject (**Figure 2**).

Figure 2.
Word cloud of themes. Source: The data analyzed by researchers using NVivo.

The researcher also explored the codes into themes that came up from the interview process using inductive code. **Figure 3** summarized the coding of the thematic analysis results in interviews with all twelve respondents in this study (each respondent is coded R, for example, respondent 1 is coded R.1). The **Figure 3** showed that several themes discovered from the interview in this present study. The researcher summarized the codes from SSI into ten themes that relevant to this present study, namely digital entrepreneurship; entrepreneurship role model; practice in learning process; entrepreneurship events; entrepreneurship club; time management; lack of communication; women entrepreneurship; family mindset of career option; and government support.

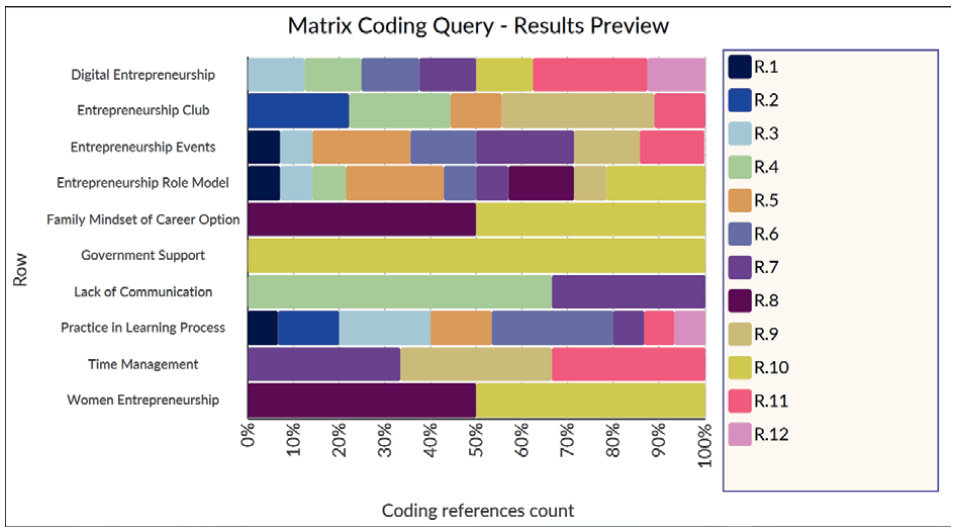

Figure 3.
Matrix coding query - results preview.

This theme about digital entrepreneurship came out of what different respondents said. When the researcher asked R.7 if the school had ever done things like entrepreneurship seminars or digital webinars, he said yes. He also said that digital entrepreneurship was a popular topic right now (R.7: D.U.54). R.12 and R.11 added that in the pandemic era, where everything is online (R.11: D.U.66), schools must teach students how to be ready to be all digital and online (R.12: D.U.68). For someone with digital skills to become an entrepreneur, they also need to be able to talk to other people, especially customers (R.6: D.U.38). When R3 was asked if the school had online materials. R.3 said that the material already exists but has not been used, so he only knows how to sell things online in theory (R.3: D.U.57). R.10 has had the same experience, which is that schools are teaching about digital entrepreneurship but have not yet done it. He suggested that schools be able to put more emphasis on online business strategies (R.10: D.U.58). When R.4 was asked what he thought a good business idea would be during a pandemic (R.4: D.U.84). Then the researchers asked R.11 if she had ever had her own business. It turns out that R.11 already has an online system for running a business (R.11: D.U.12).

Furthermore, the researchers decided to gain and learn more about how male and female students differ from quantitative analysis. This digital entrepreneurship theme was chosen because of state of the art or the need for this theme to study in-depth, as researchers stated before in the introduction section. As [35] highlighted that most researchers must narrow their emphasis. Because focusing on one issue or theme dimension is more effective than tracing many themes. The purpose of this study is to find out how digital entrepreneurship is at the level of vocational high school students. To do this, twelve students from a vocational high school were asked to fill out a survey about digital entrepreneurship (**Table 1**).

From the data above, it is known that in the number of twelve respondents who have been obtained that the gender of the respondents is six male students or 50% while female students totaling six people or 50% (**Table 2**).

From the data above, it is known that in the number of twelve respondents who have been obtained that the age of the respondents ranges from 16 to 18 years with

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Men	6	50.0	50.0	50.0
	Woman	6	50.0	50.0	100.0
	Total	12	100.0	100.0	

Source: The data calculated by researchers.

Table 1.
Gender of respondents.

	Frequency		Percent	Valid Percent	Cumulative Percent
Valid	16	2	16.7	16.7	16.7
	17	5	41.7	41.7	58.3
	18	5	41.7	41.7	100.0
	Total	12	100.0	100.0	

Source: The data calculated by researchers.

Table 2.
Age of respondents.

Correlations									
		DE1	**DE2**	**DE3**	**DE4**	**DE5**	**DE6**	**DE7**	**DE8**	**TotalDE**
DE1	Pearson Correlation	1	.842**	.938**	.735**	.701*	.813**	.842**	1000**	.929**
	Sig. (2-tailed)		.001	.000	.006	.011	.001	.001	.000	.000
	N	12	12	12	12	12	12	12	12	12
DE2	Pearson Correlation	.842**	1	.914**	.962**	.769**	.761**	1000**	.842**	.964**
	Sig. (2-tailed)	.001		.000	.000	.003	.004	.000	.001	.000
	N	12	12	12	12	12	12	12	12	12
DE3	Pearson Correlation	.938**	.914**	1	.847**	.717**	.772**	.914**	.938**	.952**
	Sig. (2-tailed)	.000	.000		.001	.009	.003	.000	.000	.000
	N	12	12	12	12	12	12	12	12	12
DE4	Pearson Correlation	.735**	.962**	.847**	1	.686*	.610*	.962**	.735**	.884**
	Sig. (2-tailed)	.006	.000	.001		.014	.035	.000	.006	.000
	N	12	12	12	12	12	12	12	12	12
DE5	Pearson Correlation	.701*	.769**	.717**	.686*	1	.715**	.769**	.701*	.845**
	Sig. (2-tailed)	.011	.003	.009	.014		.009	.003	.011	.001
	N	12	12	12	12	12	12	12	12	12
DE6	Pearson Correlation	.813**	.761**	.772**	.610*	.715**	1	.761**	.813**	.862**
	Sig. (2-tailed)	.001	.004	.003	.035	.009		.004	.001	.000
	N	12	12	12	12	12	12	12	12	12
DE7	Pearson Correlation	.842**	1000**	.914**	.962**	.769**	.761**	1	.842**	.964**
	Sig. (2-tailed)	.001	.000	.000	.000	.003	.004		.001	.000
	N	12	12	12	12	12	12	12	12	12
DE8	Pearson Correlation	1000**	.842**	.938**	.735**	.701*	.813**	.842**	1	.929**

Correlations									
		DE1	**DE2**	**DE3**	**DE4**	**DE5**	**DE6**	**DE7**	**DE8**	**TotalDE**
	Sig. (2-tailed)	.000	.001	.000	.006	.011	.001	.001		.000
	N	12	12	12	12	12	12	12	12	12
TotalDE	Pearson Correlation	.929**	.964**	.952**	.884**	.845**	.862**	.964**	.929**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.001	.000	.000	.000	
N	12	12	12	12	12	12	12	12	12	

**. Correlation is significant at the 0.05 level (2-tailed).*
***. Correlation is significant at the 0.01 level (2-tailed).*
Source: The data calculated by researchers.

Table 3.
Digital entrepreneurship validity test.

a breakdown of 16 years totaling 16.7%, students 17-year-olds totaled 41.7%, while 18-year-olds were 41.7%.

From the data that researchers have taken previously, it is known that from twelve respondents of Vocational High School Students the interest in entrepreneurship male students is five students different from female students in number three people with differences who are not too far, while the rest are not interested in doing entrepreneurship is indeed, because there is a difference in motivation between male and female if want to do entrepreneurship as stated by Yuhendri [36] and Adha et al. [37].

Next steps are validity and reliability test. If the value of R is calculated > the value of the table R, then the item on the question instrument is said to be valid. But if the value of R is calculated < R of the table, then the item on the question instrument is said to be invalid and uses a sign of 5% or 0.05. (df = n–2) with data owned by twelve then the value of R table is 0.576 then the value of R counts more than R of the table or it can also be called R count >0.576. As for the reliability test with a significance of 5% or 0.05 that the Cronbach Alpha value > the R value of the table is known to be the Cronbach Alpha value >0.576 then the data is declared Reliable while if the Cronbach Alpha value >0.576 is declared unreliable.

From the **Table 3**, the data of the Digital Entrepreneurship validity test, it can be concluded that (**Table 4**).

So, it can be concluded that the item validity test from digital entrepreneurship is declared valid with the value of r count > r table.

From the reliability test table above, it can be seen that the value of Cronbach's Alpha is 0.966 while the value of the table R is 0.576 so that the research reliability test can be known this is 0.966 > 0.576 then the above reliability data is declared Reliable (**Table 5**).

In the search for results carried out to test the One Sample t Test, we must know that from the data above it is normally distributed so that data testing is carried out as follows (**Table 6**).

The decision basis of the normality test is if the value of Sig. > 0.05 then the data is normally distributed while if the value of Sig. < 0.05 then the data is not normally distributed. So, from the table above, it can be concluded that the Kolmogorov-Smirnov normality test value has a value of 0.078 > 0.05 in other words, the normality test is normally distributed while in the test Shapiro-Wijk normality has a Sig value. by 0.080 > 0.05 then the data is normally distributed. Next, we will do the Independent

Item	Rcount	Rtable	Information
DE1	0,929	0,576	Valid
DE2	0,964	0,576	Valid
DE3	0,952	0,576	Valid
DE4	0,884	0,576	Valid
DE5	0,845	0,576	Valid
DE6	0,862	0,576	Valid
DE7	0,964	0,576	Valid
DE8	0,929	0,576	Valid

Source: The data calculated by researchers.

Table 4.
Conclusions of the digital entrepreneurship validity test.

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.966	8

Source: The data calculated by researchers.

Table 5.
Digital entrepreneurship reliability test.

	Tests of Normality					
	Kolmogorov-Smirnov[a]			**Shapiro-Wilk**		
	Statistics	**Df**	**Sig.**	**Statistics**	**Df**	**Sig.**
Digital Entrepreneurship (X)	.231	12	.078	.820	12	.080

a. Lilliefors Significance Correction.
Source: The data calculated by researchers.

Table 6.
Normality test.

	Test of Homogeneity of Variances			
	Levene Statistics	**DF1**	**DF2**	**Sig.**
Digital Entrepreneurship (X)	3.164	1	10	.106

Source: The data calculated by researchers.

Table 7.
Homogeneity variation test.

Sample t Test to find out the difference in digital entrepreneurship knowledge in male and female Students, but we must do a homogeneity test as the requirements in the independent t Test analysis, as follows (**Table 7**).

When in homogeneity testing, it is said to contribute homogeneous data if the Significance value >0.05, while if the Significance value is <0.05, the data is not homogeneously distributed. From the data above, it is known that the value of the significance from digital entrepreneurship is 0.106 > 0.05, it can be said that the distribution of the data is homogeneous. Then the requirements to do the Independent Sample t test are met, the independent sample t test is as below (**Table 8**).

In the decision making of the independent sample t test is to find out whether there is an average difference between two unpaired samples, to find out, it can be seen from the value of sig. (2-tailed) < 0.05 then there is a difference between male and female, while if the value of sig. (2-tailed) > 0.05 then there is no difference. Then we see from the table above that the value of sig. (2-tailed) from digital entrepreneurship is 0.026 and 0.036 or it can be mentioned that the value of g. (2-tailed) (0.026) < 0.05 and the value of sig. (2-tailed) (0.036) < 0.05, there is a difference in digital entrepreneurship in male students and female students. These results are supported by research conducted by Adha [37] and Usman [38].

However, schools need to teach digital entrepreneurship to prepare students for business in the 21st century. Several studies support this. Future research on how digital and coding skills and knowledge might help student entrepreneurship could improve

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Digital Entrepreneurship (X)	Equal variances assumed	3.164	.106	−2.616	10	.026	−8.333	3.185	−15.430	−1.237
	Equal variances not assumed			−2.616	6.788	.036	−8.333	3.185	−15.913	−.754

Source: The data calculated by researchers.

Table 8.
Independent sample t test.

these ideas [32]. Digital entrepreneurship has had a significant effect on the world economy. Digital entrepreneurship is a new way to run a business that takes advantage of technological advances to give business owners new opportunities [33]. To succeed in digital entrepreneurship, people need to know their strengths. Therefore, it is essential to learn how to use digital technology. Entrepreneurs will do well in the digital world if they can build a solid digital business and understand technology [34]. Also, customers always say that their top priorities are speed, price, ease of use, and good quality. This could be done and met with the assistance of digital entrepreneurship [35].

Ordinary entrepreneurship is not the same as digital entrepreneurship. Digital entrepreneurship must be successful at two main things: making sure that the digital technology used meets the target customers' needs and that the technology can be sold for a profit. Most of the time, ordinary entrepreneurship only involves the second part, which is selling goods or services for a profit. Digital entrepreneurship is not only beneficial in the development of large and sophisticated industries. However, it can also help people with low incomes and improve their quality of life, especially for people who have finished school. So, it is expected that digital entrepreneurship will help with sustainable development. Digital entrepreneurship can have positive effects on the economy, society, and on the environment. The economic effects are an increase in efficiency, productivity, and revenue; the creation of new jobs; the mobilization and creation of business opportunities in other economic sectors; a more productive use of raw materials from Indonesia's natural resources; and a more efficient use of resources, especially energy resources.

5. Conclusions

This present study concludes:

a. Based on the results of qualitative phase, the themes that came up from the interview process using inductive code. The coding of the thematic analysis results in interviews with all twelve respondents showed that several themes discovered from the interview in this present study. The researcher summarized the codes from SSI into ten themes that relevant to this present study, namely digital entrepreneurship; entrepreneurship role model; practice in learning process; entrepreneurship events; entrepreneurship club; time management; lack of communication; women entrepreneurship; family mindset of career option; and government support. However, the researchers only focused on the digital entrepreneurship theme based on the needed of this theme in the vocational high school level.

b. Based on the results of quantitative phase on digital entrepreneurship on Vocational High School Students conducted on respondents of Vocational High School students who have met the criteria with the survey method. In the validity test of each indicator, it is known that each indicator >0.05 which states that each item is Valid, while in the Reliability test it has a Cronbach value Alpha is 0.966 > 0.700 which means that the item as a whole is reliable.

c. Furthermore, as a condition in testing the One Sample t Test that the Kolmogorov-Smirnov Normality Test with a Significance value of 0.78 > 0.05 and Saphiro-Wilk 0.80 > 0.05 which means that the data is Normal distributed as for the requirements in the Independent Sample t Test, namely the homogeneity test, it is known that the Significance value is 0.106 > 0.05 which means that the data is homogeneous.

d. Meanwhile, in conducting the Independent Sample t Test to find out the difference between male and female students, it is known that the Sig. (2-tailed) (0.026) < 0.05 and Sig values. (2-tailed) (0.036) < 0.05 then there is a difference in digital entrepreneurship in male students and female students. Based on the above values, it is known that the distribution of digital entrepreneurship knowledge in male and female students at the vocational high school level is due to the cause of differences the knowledge of male and female students in entrepreneurship is as in the difference between wishful thinking and motivation, and in entrepreneurship everyone has equal opportunities in carrying out these activities and where in this digital era is very helpful in marketing products and selling entrepreneurs in selling their products in order to achieve share an even wider market.

e. This study has a limitation in that the sample size is only twelve students. This is because this study is a mixed-methods study that researcher did the qualitative phase first. Future research could use more respondents to strengthen research.

f. This study is getting closer to its end. In real life, this means that the results of the study may be of interest to the government, school administrators, and researchers. After COVID-19, the results will help these groups figure out what they need to do to make things better. This research can be used by the government and school administrators to find out how much students know about digital entrepreneurship. This will help them make better changes to improve the quality of human resources, especially students, in business, which will reduce unemployment. This present study could be a first way to find out more about other factors and should incorporate proper variables that have to do with digital entrepreneurship for further research.

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Conflict of interest

The authors declare no conflict of interest.

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Author details

Darma Rika Swaramarinda[1]*, Badrul Isa[2], Noorhayati Mohd. Yusof[2] and Mohd. Ali Bahari Abdul Kadir[2]

1 Universitas Negeri Jakarta, Jakarta, Indonesia

2 Universiti Teknologi MARA, Selangor, Malaysia

*Address all correspondence to: darmarikas@gmail.com

References

[1] Park D, Jinjarak Y, Castillejos-Petalcorin C, Estrada G, Myoda Y, Pilipinas Quising ST. Entrepreneurship in the digital age. In: Asian Development Outlook 2022 [Internet]. Metro Manila, Philippines: Asian Development Bank; 2022. pp. 1-61. Available from: www.ssyonline.com

[2] Fathur D. 10% of VHS Graduates Are Unemployed in February 2022. Vol. 1. Indonesia: Databoks.Katadata.Co.Id; 2022. p. 2022

[3] Suprianto. Indonesian Entrepreneur Ratio Lagging behind in ASEAN Countries. JURNAS.com [Internet]. 2022;1-4. Available from: https://www. jurnas.com/artikel/125991/Rasio- Wirausaha-Indonesia-Tertinggal-di- Negara-ASEAN/

[4] Hassan W. Skills in realizing E-entrepreneurship for technical and vocational education and training (TVET) students. Journal of University of Shanghai Science and Technology. 2020;**22**(11):614-621

[5] Kamal MF, Apriani R. The effect of technological developments in the digital age on investment and capital markets. JUSTITIA. 2022;**9**(1):488-496

[6] Jaenudin A, Suroto DPA. Growing interest in entrepreneurship through digital Technology in Student Entrepreneurship Learning in the industrial age 4.0. Economics Education Entrepreneurship Journal. 2019;**2**(2):84-95

[7] Zulafwan GT. Digital entrepreneur training during the Covid-19 pandemic. Journal of Computers Science Community Service. 2022;**2**(1):77-83

[8] Srijani N, Riyanto S, Hariyani DS, IP. Entrepreneurship training through digital entrepreneurship activities for students. J Pengabdi Kpd Masy Abdi Putra. 2022;**8**(8):1708

[9] Gunawan A. Digital entrepreneurship training to create entrepreneurial millennial generation. Abdimas Kartika Wijaya. 2020;**3**(1):81

[10] Hazwardy D, Gunawan A. Digital entrepreneurship training to create entrepreneurial millennial generation. Abdimas Dewantara. 2020;**3**(1):81-88

[11] Netrawati IGAO, Nuada IW, Suastina IGPB, Al E. Introduction to digital business for the young generation in growing the entrepreneurship student in MA Ishlahul Athfal Rumak (introduction digital business for growing entrepreneurship to students). Hospitality. 2022;**11**(1):229-236

[12] Suhardi Y, Darmawan A, Zulkarnaini Z, Azhar E, Pragiwani M. Counseling for increasing digital entrepreneurial skills for vocational high school students. PROGRESIF Jurnl Pengabdi Komunitas Pendidik. 2022;**2**(1):43-48

[13] Vejayaratnam N, Paramasivam T, Mustakim SS. Digital entrepreneurial intention among private technical and vocational education (TVET) students digital entrepreneurial intention among private technical and vocational education (TVET) students. International Journal of Academic Research Business Society Science. 2019;**9**(12):110-120

[14] Handaru CD, Pujiriyanto. Analysis of vocational high school students interest on interactive learning multimedia of product creative and entrepreneurship (PKK) subjects based on android.

International Technology Education Journal. 2020;**4**(2):43-51

[15] Rahayu P. The influence of the digital age on Children's language development. Al-Fathin Journal of Bahasa dan Sastra Arab. 2019;**2**(1):47

[16] Muhasim. The effect of digital technology on student learning motivation. Stud Keislam dan Ilmu Pendidik. 2017;**5**(2):53-77

[17] Danuri M. Development and transformation of digital technology. Infokam. 15 September 2019:116-123

[18] Adha LH, Asyhadie Z, Kusuma R. Industrial digitalization and its impact on employment and labor relations in Indonesia industrial. Journal of Kompil Huk. 2020;**V**(2):268-298

[19] Krismono BD, Nasikh N. Digital technology innovation for poverty alleviation in Highland agriculture during the Covid-19 pandemic. Equilibrium Jurnal Ilmiah Ekonomi Manajemen dan Akuntansi. 2022;**11**(1):9

[20] Drucker PF. Innovation and Entrepreneurship. New York: Harpercollins Publisher; 1994

[21] Diandra D, Azmy A. Understanding definition of entrepreneurship. International Journal of Management Account Economics. 2020;**7**(August):235-241

[22] Prince S, Chapman S, Cassey P. The definition of entrepreneurship: Is it less complex than we think? International Journal of Entrepreneurial Behavior and Research. 2021;**27**(9):26-47

[23] Eroglu O, Picak M. Entrepreneurship, National Culture and Turkey. International Journal of Business and Social Science. 2011;**2**(16):146-151

[24] Rusu S. Entrepreneurship and entrepreneur: A review of literature concepts. African Journal of Business Management. 2012;**6**(10):3570-3575

[25] Nedumaran G, Saroja R. A study on support digital entrepreneurship. Dogo Rangsang. 2020;**10**(06):261-272

[26] Anim-Yeboah S, Boateng R, Awuni Kolog E, Owusu A, Bedi I. Digital entrepreneurship in business enterprises: A systematic review [Internet]. In: LNCS, Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics). Vol. 12066. Ghana: Springer International Publishing; 2020. pp. 192-203. DOI: 10.1007/978-3-030-44999-5_16

[27] Kraus S, Palmer C, Kailer N, Kallinger FL, Spitzer J. Digital entrepreneurship: A research agenda on new business models for the twenty-first century. International Journal of Entrepreneurial Behavior and Research. 2019;**25**(2):353-375

[28] Baig U, Hussain BM, Meidute-Kavaliauskiene I, Davidavicius S. Digital entrepreneurship: Future research directions and opportunities for new business model. Sustainability. 2022;**14**(9):1-16

[29] Long D, Xie Y, Wei Y, Zheng J. Where does digital entrepreneurship go? A review based on a scientific knowledge map. Mobile Information Systems. 2022;**2022**:1-15

[30] Syamsyuri DPE, Jamil M, Kapriani. In: Hartini, editor. Introduction to Entrepreneurship (Digital Entrepreneurship Transformation). Bandung: CV. Media Sains Indonesia; 2021. pp. 175-177

[31] Raut J, Célić Đ, Dudić B, Ćulibrk J, Stefanović D. Instruments and methods

for identifying indicators of a digital entrepreneurial system. Mathematics. 2021;**9**(17):1-20

[32] Vineela GS. Digital entrepreneurship. Information Systems Journal. 2018;**28**(6):1125-1128

[33] Creswell JW. Research Design-Qualitative, Quantitative, and Mixed Methods Approaches [Internet]. Fourth ed. United States of America: SAGE Publications, Inc; 2014. Available from: http://library1.nida.ac.th/termpaper6/sd/2554/19755.pdf

[34] Guest G, Bunce A, Johnson L. How many interviews are enough?: An experiment with data saturation and variability. Field Methods. 2006;**18**(1):59-82

[35] Horkoff T. Chapter 7. Sources: Choosing the right ones. In: Writing for Success [Internet]. First. Canada. BC Campus; 2015. pp. 1-17 Available from: https://opentextbc.ca/writingforsuccess/chapter/chapter-7-sources-choosing-the-right-ones/

[36] Simanjuntak M, Awwaliyah I, Hayati H, Artanto RJ. The entrepreneurial potential among undergraduate students. Jurnal Pendidikan Bisnis dan Manajemen. 2016;**17**(2):75-84

[37] Maulana AA, Arifin I, Maisyaroh S, Sunarni. Differences in entrepreneurial interest based on student gender. Journal of Adm dan Manaj Pendidik. 2020;**3**(3):208-215

[38] Usman A. Comparative analysis of student entrepreneurial interests from the perspective of gender differences. Journal of Pendidik dan Kewirausahaan. 2023;**11**(1):36-51

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