



KEEN



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ARTIFICIALITY AND SUSTAINABILITY IN ENTREPRENEURSHIP

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KEEN Partners

CRANFIELD UNIVERSITY **The Bettany Centre for Entrepreneurship** United Kingdom



Cranfield University, a post-graduate university only, has a long-standing tradition of fostering entrepreneurship, stretching back nearly 40 years. In 1986 it was the first UK institution to recognise the need to scale up owner-managed businesses through the Business Growth Programme, now in its 34th year. Today entrepreneurship is consolidated in the School of Management's endowed Bettany Centre. The Bettany Centre for Entrepreneurship at Cranfield University School of Management focuses on the study and facilitation of entrepreneurial growth. The Centre's aim is to unlock the entrepreneurial potential of high growth businesses by closely linking research, education and practice. We also act as the Entrepreneurial Hub for Cranfield University working closely with the Research Innovation Office to provide entrepreneurship support to all students, faculty, and staff across campus. We offer programmes across the venture life-cycle including our MSc in Management and Entrepreneurship, an annual programme of speaking events, featuring high-profile guest speakers, and have long specialised in scale-up provision for established firms. The School of Management has frequently provided the venue for the finals of the European Ven-

ture Capital Investment Competition for leading European business schools and, for the past twelve years, the Centre has also convened Cranfield VentureDay, which brings together the alumni entrepreneurs, investors and supporters who comprise the extended "Cranfield entrepreneurial family". In recent years, there has been an increased focus on supporting and promoting start-ups. The Centre has a seed fund to provide pre start-up finance and offers early-stage business support through the Cranfield Eagle Labs, the campus incubator in collaboration with Barclays.





**BERGISCHE
UNIVERSITÄT
WUPPERTAL**

UNIVERSITY OF WUPPERTAL

Germany

The University of Wuppertal (BUW) was founded in 1972 as a comprehensive university. With more than 23,000 students, 100 courses, and externally funded research projects with a financial volume of around EUR 35 million – the BUW has developed very positively in recent years. Interest in the university, its courses and research projects has increased significantly.

The BUW sees itself as a modern university whose strengths lie in research and the wide range of courses it offers, some of which are unique. Along with cutting-edge international research, it is an important partner for businesses in the region and beyond. Its network of global partners encompasses around 170 universities.

KAUNAS UNIVERSITY OF TECHNOLOGY
School of Economics and Business
Lithuania



Kaunas University of Technology, established in 1922, is the largest and oldest technological university in Lithuania, and one of the largest in the Baltic States. KTU seeks to be a leading European university with knowledge and technology development and transfer based activities. The main aspirations of Kaunas University of Technology: Interdisciplinarity, Internationality, Innovation and technology transfer and Integrating sustainability.

One of KTU's key priorities is to maintain a synergy with local businesses. Hence, KTU provides support to solve real-life problems, and contributes to 70% of all R&D provided by Lithuanian universities for business and industry. KTU is also the founder of two of Lithuania's innovation and high-tech valleys (Santaka and Nemunas), opened state of the art business incubator integrating scientific laboratories in 2014, and provides a specialised module in technology innovation and entrepreneurship.

KTU School of Economics and Business is one of the largest centers for training economic, business and management specialists, well-known not only in Lithuania but also abroad. We are proud of our community of ambitious students, innovative researchers, lecturers, professionals in their field, of our cooperation with dynamic business representatives, and responsible social partners.





UNIVERSITY OF ST. GALLEN
Global Center Entrepreneurship & Innovation Institute of
Technology Management
 Switzerland

University of St. Gallen is the university of the Canton of St. Gallen and Switzerland's leading business university. Internationality, practical relevance and an integrative focus have distinguished HSG's programmes since its inception in 1898. Today, more than 8,200 students from 80 countries are enrolled in business administration, economics, law, social sciences and international affairs.

Research on entrepreneurship at the University of St. Gallen is conducted in the Global Center for Entrepreneurship and Innovation (GCE&I). GCE&I is intended to be run and developed by the research team of Professors Oliver Gassmann, Dietmar Grichnik and Thomas Zellweger. The three professors exercise a substantial influence in their respective research fields of innovation (Gassmann), start-ups and young companies (Grichnik) and family businesses (Zellweger). Firms like Audi, BASF, Bosch, Bühler, Daimler, SAP and Swisscom have established cooperation ventures with them that span many years. The findings from the research projects with these partners are also made accessible to regional SMEs through working groups. Furthermore, additional benefit for the region is generated through numerous start-ups and spin-offs. The HSG Founder Lab with the Founders' Garage has a great impact on the start-up culture on the University campus and in the region. HSG will bring their expertise in cognition and behaviour of entrepreneurs in the first topic, and their expertise in entrepreneurial finance and strategy in the second topic that they will lead.

Welcome Letter



The 1st KEEN Forum PhD Colloquium marks the final and largest event of the KEEN Forum event series of 2020. It is also the very first international conference held virtually by the Knowledge Empowered Entrepreneurship Network (KEEN).

The 1st KEEN Forum PhD Colloquium is organized by a consortium comprising of Kaunas University of Technology, Lithuania; Cranfield University, United Kingdom; University of Wuppertal, Germany; and University of St. Gallen, Switzerland. The collaboration of these four partners, supported by European Union's Horizon 2020 research and innovation programme under grant agreement No 810329, has provided the opportunity to reach out to early career researchers studying artificiality and sustainability in entrepreneurship and provide a unique forum for them to present their research.

The purpose of the 1st KEEN PhD Forum and this collection is to provide an opportunity for early career entrepreneurship researchers in disseminating their research findings to a wider audience, help them demonstrate the societal impact of their research, build their networks and raise the profile of their work. We hope that the diversity of colloquium participants and topics discussed will enrich their understanding of the topic and stimulate further growth of KEEN, by sharing the outcomes of their research and by developing new partnerships and relationships.

The KEEN Forum series is designed as an innovative approach to academic knowledge transfer and participation around the theme of entrepreneurship. We host academic conferences, lectures and debates targeted to the general public, short training sessions for entrepreneurs, matchmaking events and round tables targeted to businesses and investors, and contests and symposiums for students. Events to date have included 'Rock the Market' and 'Rethinking Business Models for a Sustainable Future' for business start-ups; 'Marketing Fashion' for the wider public; and, 'I2I – Ideas to Innovation' for academic entrepreneurs and early stage businesses. More events are planned for the academic year 2020/21, including a KEEN track in the National Science Festival 2020; a KEEN track in Technorama 2020 and business plan contest; and the 2021 International Conference on Technology and Entrepreneurship, IEEE TEMS–ICTE, Digital Transformations in Entrepreneurship and Innovation at KTU Santaka Valley, Kaunas, Lithuania in August 2021. As awareness of these activities grows, we invite wider global participation.

The KEEN consortium's aim is to broadly disseminate academic knowledge, while stakeholders are provided with the opportunity to express their opinions, needs and challenges to shape the research agenda. Our objective is also to create and sustain a network focusing on building capacities to develop public engagement in entrepreneurship research in low-innovativeness level EU countries and foster the co-creation of more socially-relevant research with multiple actors such as policy makers, citizens, industrials or NGOs. Through all these activities, designed to build networking and knowledge sharing opportunities to the wider entrepreneurship stakeholder community, KEEN forum is ambitious to become a flagship event in the field of entrepreneurship promoting the growth of our collaborative network and its international reputation.

The 1st KEEN PhD Forum could not have happened without the hard work and commitment of a large number of people. We would like to thank our host institution, the Kaunas University of Technology, the School of Economics and Business, and we also thank Ieva Anuziene, KEEN project coordinator. Further, we would like to express our thanks to the Organizing Committee, Session Chairs, Keynote speakers and Reviewers for all their hard work in preparation for the colloquium and its smooth running. Finally, we would like to especially the local Kaunas team and all others who have contributed so much of their time to make this conference happen.

Prof. Dr. Asta Pundziene on behalf of KEEN consortium

Keynote speakers

**Dr. RICHARD ADAMS**

Cranfield University,
The Bettany Centre for
Entrepreneurship,
United Kingdom

Dr. Richard Adams is Reader in Entrepreneurship at the Bettany Centre for Entrepreneurship, Cranfield University, and has previously held positions at Universities of Surrey and Exeter, Imperial College London as well as with the UK Cochrane Centre. Dr Adams's work, which lies at the intersection of (responsible) innovation, sustainability and technology entrepreneurship, is practically focused and seeks to meet the twin hurdles of academic rigour and industrial relevance. He has published widely, in excess of 90 journal and conference papers. He is also Specialty Chief Editor in Blockchain for Good for the journal *Frontiers in Blockchain*.

KEYNOTE: Sustainability in Entrepreneurship

**Prof. dr. TOMAS
KRILAVIČIUS**

Chief scientist at Baltic
Institute of Advanced
Technology, Lithuania

Prof. dr. Tomas Krilavičius is head of Applied Informatics department at Vytautas Magnus University and chief scientist at Baltic Institute of Advanced Technology. He received his PhD at University of Twente (The Netherlands) at 2006. His main research interests are applications of Artificial Intelligence and Natural Language Processing, large scientific infrastructures. He is a member of NATO STO IST panel and several workgroups (IST-173 Mission-Oriented Research for AI and Big Data for Military Decision Making; IST-177 Social Media Exploitation for Operations in the Information Environment and IST-159

The exploitation of Cyberspace for Intelligence; IST-141 Visual Exploratory Analytics), Country Governmental Expert (CGE) at EDA CapTech CapTech Communication Information Systems and Networks and member of AI strategy group at the Ministry of Economy and Innovation. He has participated and led many local and international research and applied research project.

KEYNOTE: Artificiality in Entrepreneurship



Prof. dr. CRISTINE VOLMANN

Professor of
Entrepreneurship,
Bergische Universität
Wuppertal, Germany

Prof. Dr. Christine Volkmann is head of the Chair of Entrepreneurship and Economic Development and director of the Institute for Entrepreneurship and Innovations Research at the Schumpeter School of Business and Economics at the University of Wuppertal. In 2005 she was awarded the “UNESCO Chair of Entrepreneurship and Intercultural Management”. In 2011 she initiated the foundation of the interdisciplinary Jackstädt Research Center for Entrepreneurship and Innovation and has had the function of the executive board spokeswoman since then. Christine Volkmann is a renowned member of the national and international scientific Entrepreneurship community, e.g. as member of the EFER scientific advisory board until its dissolution in 2017. She volunteers in a number of scientific foundations and associations, and serves as a jury member for several renowned competitions (e.g. Gründerpreis NRW, EY Entrepreneur of the Year). From 2001 to 2009 she was a board member of the scientific society FGF “Förderkreis Gründungs-Forschung e.V. Entrepreneurship – Innovation – Mittelstand” and treasurer of the association. Christine Volkmann has also worked as an advisor for various EU-organizations, the European Economic and Social Committee and the UNCTAD in the field of entrepreneurship. She is a regular visiting professor at the University of Economics and Business Administration in Bucharest, at the University of Graz (Austria) and the Technical University of Košice (Slovakia). She has published numerous journal articles and textbooks and acts as a reviewer for scientific journals in the field of entrepreneurship. Her research and teaching activities currently focus on sustainable and social entrepreneurship, entrepreneurial ecosystem, entrepreneurship education and entrepreneurial finance.

KEYNOTE: First steps of getting research published: helpful tips for PhD students



JULIAN BAFERA

Research associate and
Ph.D. student, Bergische
Universität Wuppertal,
Germany

Julian Bafera, M. Sc. is a research associate and PhD student at the Chair of Entrepreneurship and Economic Development and director of the Institute for Entrepreneurship and Innovations Research at the Schumpeter School of Business and Economics at the University of Wuppertal. His research focuses on Entrepreneurial Finance. Julian is also responsible for KEEN related activities.

KEYNOTE: First steps of getting research published: helpful tips for PhD students



**Dr. KAZEM
MOCHKABADI**

Postdoctoral Researcher
in Entrepreneurship,
Bergische Universität
Wuppertal, Germany

Dr. Kazem Mochkabadi is a post doctoral researcher at the Chair of Entrepreneurship and Economic Development and director of the Institute for Entrepreneurship and Innovations Research at the Schumpeter School of Business and Economics at the University of Wuppertal. In 2020, he received his PhD with his Dissertation called "Equity Crowdfunding- Essays about the Scientific Development and Investor Perspective". His main research focus is Entrepreneurial Finance and he recently published in Small Business Economics. Moreover, his current research project will be published in the AOM best-paper proceedings (2020).

KEYNOTE: First steps of getting research published: helpful tips for PhD students



**MICHAEL
HUDECHECK**

Research Associate at the
Institute of Technology
Management at the
University of St. Gallen

Michael Hudecheck is a Research Associate with the Institute of Technology Management at the University of St. Gallen. His work on the use of satellite-based imagery data for monitoring the economic and social effects of COVID-19 was featured in M.I.T. Sloan Management Review. He previously served as a Research Associate at the University of Zürich and as a Research Assistant at ETH Zürich, where he received a Master of Arts in Comparative and International Studies.

KEYNOTE: Going Beyond the Frontiers of Management Research: Monitoring Changes in Economic and Social Activity with Satellite Remote Sensing Data

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BEST ABSTRACT AWARD WINNER

FROM STARTUP TO SCALEUP: BUILDING A VALUE-BASED PROCESS MODEL OF SUSTAINABLE ENTREPRENEURSHIP IN THE INDUSTRY 4.0 SECTOR

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○ INTRODUCTION

In the modern economy, international competitive advantages are not just by comparing and contrasting the incomes of each country but also by other dimensions such as sustainable, technological, and digital competitiveness. Sustainable entrepreneurship is a promising solution that contributes to economic development and concurrently solves social and environmental challenges. Thanks to modern technological innovations, startups with its flexible characteristics to offer 4.0 solutions and are seen as one of the most dynamic powers within the Industry 4.0. Nevertheless, the research regarding sustainable entrepreneurship is rather a novel phenomenon and hence implicit, especially in industry 4.0. The purpose of this paper is to develop a conceptual value-based process model that will provide a requisitely holistic means for studying sustainable entrepreneurship for the industry 4.0 sector. At the end of the thesis, a research question “How do the sustainable-oriented entrepreneurs start their ventures in Industry 4.0, scale-up their business, and contribute to sustainable development?” is answered.

According to the mainstream research regarding Industry 4.0, the industrial revolution is a foundation of transformations of economy, working environment, and skills improvement (Pereira & Romero, 2017), and a promoter of sustainable development (Ngjecari, 2016; Beier et al., 2018). Generally, expected sustainable benefits of high-tech Industry 4.0 solution can be listed down as improvement of productivity, flexibility, effective resource consumption, waste reduction, closed-loop communication system among value chain, information technologies job creation, improvement of the working environment, as well as creating job opportunities for elderly and disable people (Machado et al., 2019; Hermann et al., 2016; Kiel et al., 2016; Waibel et al., 2017; Lele, 2019). However, sustainable goals potentially create disadvantages for the enterprise due to adding cost for society and nature, in the other words the ‘green prison’ phenomenon (Pacheco et al., 2010). Markman et al. (2016) strongly suggest that the companies should not try to balance all interests at once rather than prioritize in a way that gives more contribution to the ecological or social system.

Hence, the second phase of this thesis will focus on analyzing the distinct ability of each triple bottom values at each entrepreneurial stage and that enable the entrepreneurs to scaleup business sustainably and bring benefits for themselves, for other people, as well as for nature.

○ METHODOLOGY

From the literature background regarding the existing entrepreneurship process model (Shane & Venkataraman, 2000), sustainable entrepreneurial process models (Belz & Binder, 2017; Matzembacher et al., 2019), and Industry 4.0 theories, a set of theoretical propositions is represented (Yin, 2003). An exploratory research approach with threefold stages is conducted to address the study's aims. Firstly, multiple case studies are carried out with five companies that started their ventures from the year 2011, focused on Industry 4.0 sector, and had to address economic, social and/ or ecological goals in their profiles. The narrative approach is employed to construct key phrases over time. Secondly, a survey questionnaire is planned to be distributed to 150 entrepreneurs currently offers Industry 4.0 products/solutions. Structural equation modeling is conducted to explore the priorities of each triple bottom line dimension in every sustainable entrepreneurial phase. Finally, semi-structured interviews are conducted with two experts, a business owner, and a business angel, to check the sufficient and practical input of the whole study.

○ FINDING

A conceptual sustainable entrepreneurial process in the industry 4.0 sector is established including six phases: (1) Identifying triple bottom line gaps; (2) Evaluating expected triple bottom line value; (3) Developing a mock triple bottom line Industry 4.0 solutions; (4) Funding a sustainable enterprise; (5) Forming a new sustainable venture and entering the market; (6) Creating triple bottom line values. The progress emphasises the importance of identifying economical, ecological and social opportunities as the means, and motivation to start a sustainable venture. In the third phase, depending on the targeting clients, the entrepreneurs focus on either social/ecological value creation. In business to business operational model, the social value is emphasised, while the environmental value is focused in business to customers model. By promoting sustainable values, the new ventures could shorten the funding, entering the market, and brings solutions to customers. Even though economic, ecological, and social values at each stage are prioritized at each stage, the commitment of the entrepreneur to bring sustainable values for the economy, society, and environment should be significant.

○ PRACTICAL IMPLICATIONS

As there is a large number of start-ups working on a wide variety of solutions for Industry 4.0, this paper suggests three implications for present and future entrepreneurs in the Industry 4.0 sector: social and/or environmental problems could be sources of entrepreneurial opportunities; the triple bottom line goals could support entrepreneurs to have more choices in capital seeding; the triple bottom line solutions may bring higher profile customers and speed up the scaleup phases. Furthermore, the finding from the thesis is expected to provide efficient support for policymakers, startup organizations to motivate sustainable entrepreneurship in society.

ORIGINALITY/ VALUE

The paper investigates the sustainable entrepreneurial process for startups in Industry 4.0 sector as current and future trends instead of seeing the entrepreneurial process as a universal framework. Understanding the prioritized value-driven factors of each stage can reduce complexity, save the cost of resources and human effort and capacity, yet still trigger the promising triple sustainable values at the end of the process. Previous research tailoring particularly to the context of Industry 4.0 has not been published at the time of this thesis, and research in financial and non-financial value creation as a result of sustainable entrepreneurship in itself is rare, with even the handful of papers that only discuss the subject supporting this scarcity as well.

Keywords: sustainable entrepreneurship, sustainable entrepreneurship process, triple bottom line, Industry 4.0

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SESSION 1. Marketing

ROLE OF ENTREPRENEURIAL MARKETING IN INFLUENCING BUSINESS PERFORMANCE: A STUDY OF SELECT STARTUPS IN INDIA

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○ INTRODUCTION

Entrepreneurial Marketing. Entrepreneurial marketing (EM) has evolved in the past three decades, as a crucial extension to the theory and practice of marketing, adopted by entrepreneurs and are known to be entirely different from conventional marketing as described in the textbooks. EM comprehension is based on knowing how small medium enterprise (SME) or entrepreneurs are doing business and how their decision making impacts the delivery of their market offering within limited resources, experience and scale (Gilmore, 1999).

Morris et al. (2002) define EM as *“identifying and exploiting opportunities to acquire and maintain profitable customers by managing risk, utilizing resources and creating value, innovatively”*.

The EM perspective focuses on marketing based on prospective, innovative, and entrepreneurial approaches (Morrish, Miles, & Deacon, 2010). Prior research has identified several behavioral characteristics of EM, such as intuition-experience based decisions (Siu & Kirby, 1998), calculated risk-taking (Hultman & Hills, 2011), innovation (Morrish, 2011; Hills & Hultman, 2013; Whalen et al., 2016), opportunity recognition (Hills & Singh, 1998), flexible market strategy (Shaw, 2004), and exploitation of smaller market niches (Stasch, 2002). EM is frequently associated with small businesses which may be new ventures, startups or at nascent stages (Collinson and Shaw, 2001; Martin, 2009; Morris et al., 2002).

Business Performance. The business performance is measured as financial or non-financial (Ramanujam & Venkatraman, 1987). This study will follow Keh, Nguyen, & Ng (2007) for the dependent variable i.e. business performance, including the financial performance indicators like market share, sales growth and profitability while the non-financial performance will be captured by offering job security to employees and accomplishment of start-up goals.

Startups. The Department of Industrial Policy & Promotion (DIPP) notification has defined a start-up as an entity incorporated or registered in India (Vijayakumar, 2018). However, DIPP confirmed

that an entity will be considered a startup:

- Up to 7 years from the date of incorporation/registration (except the biotechnology firms – 10 years)
- If its annual turnover does not exceed Rupees 10 million in any preceding financial year since incorporation/registration; and
- If it works towards innovatively developing or improving the products, processes or services, or if it is a high potential scalable business model for creating jobs or wealth

Provided that an entity formed by splitting up or reconstructing an existing business is not a 'Startup'.

● RESEARCH QUESTIONS

To get an overview of the current research work on entrepreneurial marketing, the following research questions (RQ) are framed:

RQ1. How is entrepreneurial marketing examined in the developed vis-a-vis developing world?

RQ2. What are the methodological approaches used in various studies related to entrepreneurial marketing?

RQ3. What are the constructs and theories identified and discussed in the literature, and to what extent do those contribute to the concept of entrepreneurial marketing?

RQ4. What are the existing research gaps in the extant literature, and what are the potential focus areas for future research in the field studying entrepreneurial marketing?

Objectives of my study are as follows:

1. To identify major entrepreneurial marketing dimensions in Indian context.
2. To study entrepreneurial marketing practices of select startups in India
3. To examine the impact of entrepreneurial practices on the business performance

● RESEARCH DESIGN

This study employs a mixed approach where firstly, focus groups will be conducted to gain insights about the items to be followed by questionnaire survey (on the constructs of Entrepreneurial, Marketing, Innovation, Customer Orientation and Business Performance) and then lastly semi-structured interviews will be conducted to validate the findings of the survey.

Keywords: Entrepreneurial marketing, EMICO, start-ups, business performance

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AN INTEGRATIVE FRAMEWORK FOR THE ROLE OF IRRATIONALITY IN MULTICHANNEL CONSUMER BEHAVIOR

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Due to the increased complexity of competition and demand for holistic consumer experience, the retailing industry has been organized in different places and environments. The inertial uptake of technologies is a key factor in the evolution of retail channels by enabling consumers to use them at any time from different devices and places. With the emergence of retail channels configuration, multichannel retailing has become a hard reality. The results of a consumer behavior survey conducted by HBR (2017) show that 7% were online-only consumers and 20% bought only in-store. The remaining majority, 73% are identified as multichannel consumers who have used physical and virtual retail channels during their shopping journey. The scientific discussion is further reinforced by the question how the rationality attributed to multichannel consumer behavior fits with the basic provisions of consumer psychology, asserting that thought is based on two levels: conscious and subconscious (Dijksterhuis & Nordgren, 2006) and only 5% of consumer behavior is conscious and planned, and at least 95% consists of unconscious actions (Zaltman, 2003). According to Hinterhuber (2015), studies on the role of irrationality reveals only fragmented findings that lack conceptual reasoning and practical applicability, as the object of research usually is only the assumptions of consumer irrationality. Against this, the paper concludes that the focus of future research should be on identifying the relations between irrationality and consumer behavior and a detailed analysis of the consequences of consumer irrationality in different environments or contexts. The purpose of this paper is to offer an enhanced understanding of the role of irrationality in multichannel consumer behavior by proposing an integrated framework.

Recent research provides strong evidence that consumer behavior is not the result of cognitive motivation, but unconscious processes (Dijksterhuis et al., 2005). Consumer irrationality is associated with unconscious thought (Martin & Morich, 2011) and impulsivity (Rook & Fisher, 1995). Shiu (2017) identifies confusion with consumer irrationality, because in the case of information similarity, overload, or ambiguity, consumers fail to figure out relevant aspects of a product or service. Bargh (2002) bases unconscious thinking on automaticity because automated processes are performed in the absence of thoughtful evaluation. Although consumer irrationality today is defined as an independent and dominant variable of consumer behavior (Bridger, 2015), there is no consensus in the literature on the conceptualization of the irrationality construct while reasoning its dimensionality. To enable the conceptualization of consumer irrationality in the opinion of the paper authors, it is necessary to integrate theories of consumer psychology and consumer be-

havior. In order to achieve this goal, latent trait state theory (LIST, Steyer et al., 1999) and Bettman's information processing model of consumer choice (Bettman, 1979) approaches are used. Based on the provisions of these theories, which describe the role of hidden personal characteristics in a certain environment and the limited ability of consumers to understand information, consumer irrationality construct is revealed through three dimensions: impulsivity, automaticity and confusion.

Integrative framework implementation requires a clear theoretical basis. The theory of planned behavior (TPB, Ajzen, 1985) used by researchers to predict consumer behavior is useful in this regard. Although TPB focuses on aspects of controlled behavior, this does not limit its application to investigate unconscious or premeditated behavior (Ajzen & Dasgupta, 2015). The view is supported by the statements of Churchill et al. (2008) that TPB can be used to study consumer behavior that is not characterized by an analytical decision-making strategy. According to Arora and Sahney (2018), the TPB model is considered as an appropriate tool to study multichannel consumer behavior because the model reveals a holistic approach and support to understand why consumers browse the online before buying in a store, why after gathering information online they switch to a store, and what hinders consumers' choice to continue their shopping journey online. Based on the insights of the conducted research, in the context of this paper, the suitability of TPB and a certain extension of its scope are argued. This is primarily related to the integration of consumer irrationality phenomenon into multichannel consumer behavior research.

The original constructs of TPB model have been modified to meet the requirements of multichannel consumer behavior. Multichannel consumer behavior is the main dependent variable of the framework, which according to TPB is influenced by intentions, determined by consumer attitudes, subjective norms, and perceived behavioral control. The reasoning of an integrative framework constructs and their relations is based on past research studies. In the webrooming case research was found that consumer intentions have a positive and direct effect on multichannel consumer behavior (Arora & Sahney, 2018). The relationship between subjective norms and intentions is based on Liu et al. (2014) study, which revealed, that if consumers believe showrooming is considered acceptable by other people, then it will develop their stronger intent for this behavior. Providing consumers with a wider choice of different retail channels will increase the impact of their perceived behavioral control on the intention to switch channels during the decision-making process (Goersch, 2002). Meanwhile, Luo et al. (2014) confirm attitude and intentions relations, by referring, that a positive attitude toward showrooming will lead to a favorable intention and conversely. The empirical research of consumer irrationality in multichannel consumer behavior is very limited, so the grounding of framework constructs is extended by the relationship between impulsiveness, confusion, automaticity, and the field of the retail environment. Lee (2007) revealed that consumer impulsiveness has a positive effect on consumer's attitudes toward purchasing online. Chen and Wang (2016) confirmed that impulsiveness has a positive effect on the intention to make an impulsive purchase. Several studies have found a positive effect of impulsiveness on impulsive purchasing (Ali & Sudan, 2018), a positive effect of confusion on inertial purchasing (Shiu, 2017), and a strong positive correlation of automaticity with consumer behavior (de Bruijn, 2010). This reasons consumer irrationality and multichannel consumer behavior relations.

The paper is amongst the first studies which explore the role of irrationality within a TPB framework. Besides expanding the TPB framework, paper also significantly complements the field of multichannel consumer behavior.

Keywords: multichannel behavior, consumer irrationality, retailing.

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THE ECONOMIC IMPACT OF COVID-19 ON OMANI TOURISM SECTOR

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○ ABSTRACT

The tourism sector contributes considerably to the country's gross domestic product (GDP). This sector creates employment opportunities for millions of people throughout the world. Understandably, the tourism sector comprises many support industries such as the travel industry, restaurants, and hotels, among others. These support industries, coupled together, contribute to most regular and noticeable economic activities within the country and one of the most upcoming industries in the country. In Oman, the tourism sector has been on a steady rise. The sector has created employment for citizens and revenue to the government. It has also enabled the Omani government to earn foreign exchange and develop infrastructural networks and structures. The Omani tourism industry has also boosted cultural exchange programs within the people of the community (Malhotra, 2007). For this reason, tourism contributes to the Omani economy and the sociocultural orientation of the people.

The outbreak of COVID-19 has crippled the tourism industry in the world. The Omani tourism sector is not an exception. Coronavirus has been identified as highly infectious, hence necessitating the institution of policies that help the governments and health administrators mitigate the spread of this pandemic. These policies revolve around influencing the interaction between people while at the same time inhibiting the traveling approaches. Most of the mitigating factors entail instituting a sense of social distance and creating regulations that limit physical interaction between people. Since the tourism sector depends on the physical movement of people, most support industries have had to close down due to low occupancy. In particular, the most felt aspect is the travel ban that has been put in place by various governments, limiting the number of visitors allowed to get into the country.

The tourism sector relies on transport, and thus the ban on international travel brings it to a standstill. In this regard, it is imperative to understand the link between the tourism sector and the economy. The knowledge garnered helps to establish the economic impacts of COVID-19 on the Omani tourism sector. The analysis of COVID-19 economic impacts on the Omani tourism sector delves into subsectors such as the hospitality industry, the travel sector, and financial institutions, but to mention a few. The pandemic has decimated employment opportunities and economic activities in the tourism industry. The parks have been closed, flights suspended, and opening of recreational facilities banned. These effects result in adverse economic impacts that

affect not only the Omani tourism sector but also the government's ability to meet its obligations to the people. Overall, the research objectives for the paper include:

- To understand the contribution of the Omani tourism sector to the economy of the country before the coronavirus pandemic.
- To explore the economic implications of coronavirus pandemic on the Omani tourism sector and support industries.
- To explain the implications of the research to the future of the tourism sector in Oman.

The paper contributes significantly to providing guidelines on the impacts of the tourism sector in the economy. The research and study provide additional information that addresses critical questions unanswered in the existing literature. Most studies have focused on the contribution of the tourism sector to the economy of countries. Even with the current ravaging coronavirus pandemic, the focus has been on how the virus has affected world tourism. Therefore, this research achieves specificity by focusing on the economic impact of coronavirus on the Omani tourism sector. This purpose is achieved by analyzing how the fall in the sector due to COVID-19 has affected the country's economy. The oil prices and other key players in the country's economy have exhibited a decline due to these challenges in the tourism sector. As such, the paper adds critical values by examining how the reaction towards Coronavirus in Oman and other countries affects countries' economic capacity by retarding progress in the tourism sector. It provides both specialist opinions and paints a clear picture of the economic impacts that the COVID-19 virus has on the country in general. The research uses numerous sources to ensure that there is enough information to build the paper based on the contemporary perspectives within the global tourism sector and, more specifically, the Omani tourism sector and how it impacts the lives of the people as well as the economic potential of the country. The data is then analyzed to conclude Coronavirus's negative impacts on the tourism sector and the economy in general.

The methodology used for this paper helped to support the validity and reliability of the research. It entailed a qualitative research method in which credible sources were obtained from online databases and libraries. The article focuses on the analysis of secondary data while at the same time integrating some primary data from observation and survey. The secondary data provides the basis and foundational support to develop the objectives of the paper. It focuses on identifying the economic role of tourism in Oman and how coronavirus pandemic has affected it.

The study found that COVID-19 has adverse effects on the economic aspect of tourism by reducing the number of visitors to the sector. Due to the falling capacity of tourists into the country, the facilities designated for these purposes, such as tour guides and agencies, hotels and restaurants, and airline companies, face challenges in maintaining their productivity levels. The research established that the tourism and travel industry has grown over the past few years. The tourism industry contributes to about 9.4% of the total employment globally. There has been a 2.6% growth in the tourism industry from 2015 to 2019. Many jobs in the Omani tourism sector have been lost due to the coronavirus pandemic. It is established that job losses would rise from the current 60% to about 80% by December 2020 (Taylor, 2020). In the air travel sector alone, the

Omani economy will lose \$1.7 billion. Local Omani hotels have reportedly been forced to operate at half the capacity, which has led to a \$145.2m revenue loss since the coronavirus pandemic outbreak. The Omani government should cushion the tourism sector to facilitate its revival for its economic prosperity.

Keywords: COVID-19 pandemic, tourism sector, Omani economy

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LEVERAGING SOCIAL MEDIA'S UNIQUE AFFORDANCES FOR ENTREPRENEURIAL SOCIAL CAPITAL

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○ ABSTRACT

Social capital is generally attributed to actual and potential value that is available in the social relationships/network of individuals (Adler & Kwon, 2002). Social capital of entrepreneurs is considered as a critically important factor of entrepreneurial success (Gedajlovic et al., 2013). But in case of SMEs (small and medium enterprises), scholars argue that entrepreneurs are not effective in developing social capital actively due to the intensity of their day to day responsibilities of managing a small firm (Gordon & Jack 2010). Recent research has found evidence of social media, helping individuals in managing relationships (Sigfusson and Chetty, 2013) and growing network (Jagongo & Kinyua 2013). But questions like how unique affordances of social media ((Digital User Profile, Digital Search, Digital Relations and Network Transparency) manifests the process of developing social capital of entrepreneurs remain unanswered in the research/literature.

In order to address this research gap, the current study approaches to answer the following research question *“What is the impact of social media on the networking behavior of entrepreneurs in SMEs?”*

○ DATA COLLECTION

Semi Structured Interviews: As part of the data collection, semi-structured interviews are collected from 26 entrepreneurs that own and manage an SME.

Research Sample: As part of the qualifying criteria for selecting the research sample is set as following.

- Entrepreneurs that own and manage SME
- Entrepreneurs that are using social media in their personal/professional capacity

In order to bring richness in data and conducting in depth analysis of the phenomenon, diverse range of entrepreneurs will be selected (i.e. age, gender and business type).

Interviews: As part of the interview, participants will be enquired about their usage behaviour on social media (i.e. time spent, frequency of posts, privacy setting, responding to connection requests and other). In particular the impact of unique social media affordances (Digital User Profile,

Digital Search, Digital Relations and Network Transparency) will be investigated to understand how unique affordance of social media affects the process of accruing bridging and bonding social capital.

Keywords: Social Capital, Social Media, Affordances, Entrepreneurs, SME

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SESSION 2. Entrepreneurship

THE IMPACT OF ENTREPRENEURSHIP ON ECONOMIC GROWTH AND DEVELOPMENT: A COMPARATIVE ANALYSIS

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○ ABSTRACT

It has come to the realization of many that to achieve greater economic prosperity in a country, there is the need to encourage and unleash people's entrepreneurial abilities. Undeniably, the economics of entrepreneurial encounter has become the center of economic growth and development. This is evident in some famous and recent works like the works of Thanti and Kalu, 2018; Folarin, 2018; Bruns et al., 2017; Stefanescu, 2016; Fritsch and Wyrwich, 2014. It is apparent in the aforementioned works that in recent years' entrepreneurship is playing a fundamental role in economic growth and development.

The history of entrepreneurship however dates as far back as the 18th century when John Baptiste Say is known to have coined the term entrepreneurship from the French word "entrepreneur" which means "undertaken of a business", Say (1803). From the literature, it was also discovered that, others authors suggest that the expression was first used by Richard Cantillon, for instance in the write ups of authors like, (Baumol, 2010; Murphy 2010; Peneder 2009; Harold et al. 2006). The point here is not to argue about who first made mention of the term entrepreneurship, but to know the genesis of this whole brouhaha. This argument could probably be due to what Joseph Schumpeter wrote in his book "History of Economic Analysis", (Schumpeter, 1985) that "as far as I know, Cantillon was the first to use the term entrepreneurship". After he made this statement, a lot of authors like Baumol (2010) Peneder (2009) and other proponent writers have also repeated that. This shows how influential Schumpeter has been when issues of entrepreneurship are being discussed. It is not surprising that Schumpeter has most often been regarded as a classic writer of the subject (Casson, 2014). In fact, it was Schumpeter who first theorized the linkage between entrepreneurship and economic growth through the use of innovation and Research and Development (R&D). Since then, a lot of articles on entrepreneurship and growth have emerged, and mention can be made of works like, (Wennekers (1999); Audretsch et al. 2004; Acs (2006); Stam (2008); Mininiti (2010); Stark (2012); Marinescu et al. (2013), to mention but a few). All in the name of establishing a linkage between entrepreneurship and economic growth.

Haller (2012) emphasizes that economic growth is an upsurge in the per capita income of a nation. Economic growth involves more quantitative terms, like increase in Gross Domestic Product (GDP), Gross National Product (GNP), and National Income (NI). From the assertion of Haller (2012), we can therefore estimate that economic growth is the act of growing the sizes of national economies, especially the GDP per capita, making economic growth a widely examined macro-economic phenomenon. Economic development on the other hand does not generate quantitative changes alone but also it captures some qualitative changes as well. It takes into account other factors like human development, wealth, education, infrastructure and all other qualitative factors which causes the national economy to robustly and cumulatively increase its real national product. The notion that economic growth and entrepreneurship activity are positively and closely linked has unquestionably found its way into the world of the social and behavioral sciences and with most economists, sociologist, policy analyst and even government officials paying so much attention to entrepreneurship there is the need to probe further into this status quo. The big question however remains that, does this assertion hold for all countries?

With this question in mind, this study seeks to undertake the following objectives:

- 1 To identify the major determinants of entrepreneurship.
- 2 To examine the overall impact of entrepreneurship on growth in developed and developing countries.
- 3 To analyze the best practices of developed countries that can be applied in developing countries.

Based on evidence from the literature three specific methodologies will be used to undertake each objective respectively; the eclectic framework, the Generalized Methods of Moments (GMM) as well as some unobtrusive research techniques. The eclectic framework will provide a cohesive structure, focusing on different aspects of literature from various disciplines, to enable us understand the different determinants of entrepreneurship across different countries over time and subsequently the most important variables will be extracted as the major determinants of entrepreneurship. The Generalized Methods of Moments (GMM) will also be used to examine the impact of entrepreneurship on economic growth and development, this technique control for unobserved country-specific effects, first-difference non-stationary variables, overcome the endogeneity of the explanatory variables by using instruments and test for the presence of autocorrelation. The unobtrusive research techniques will enable us identify the various entrepreneurial practices amongst the so called core and periphery countries.

The prime objective is to bring a novel perspective into the already existing literature. Also the study seeks to obtain some new results where entrepreneurship will have a strong and significant impact on growth in both the core and periphery countries.

With regards to policy implication, the study seeks to advocate for the periphery countries to consider formalizing Minute Businesses (MB). More often than not, we hear of the Small and Medium scale Enterprises (SMEs) but in most developing economies there exist another category which is mostly predominant in the economy. This is the Minute Businesses (MB) category; this category

of business is even smaller than the Small Scale Enterprises. Typically, these types of businesses are not captured in the records and database of the GEM or World Bank indicators (and this could be another reason for the mixed results in the study). In most developing countries where jobs are not readily available, majority of the citizens operate in these kinds of businesses yet they have not been captured as formal businesses and their contribution to economic growth cannot be measured.

Keywords: Entrepreneurship, Growth, Development

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ROLE OF FACEBOOK GROUPS IN EDUCATION

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In education as an enterprise, the key factor is the connections and the way they are leveraged. In the digital era, these connections and education are no longer bound by the physical world. This paper discusses using Facebook groups as an educational scaffold for the subject of economics. This paper examines learning happening through community interaction and estimates its impact on the academic achievement of students of higher secondary school in Mumbai, India.

○ INTRODUCTION

An enterprise is defined as “a project or undertaking, especially a bold or a complex one.” (Oxford Dictionary). It must be brought to light that there are hardly any systems as complex as Education. For firstly, the education system resembles a pipeline, starting from the kindergarten until the doctoral and postdoctoral at the end of the pipe. Furthermore, the performance of a person at school is affected by many other factors including family members, teachers, peers, technology, course design and others. Thus we can visualise education to be a system of smaller interconnected systems that are surrounded by feedback loops, thereby making it a non-linear. It cannot be and should not be forgotten that education is also largely affected by politics and is history dependent. Thus education is visualised as an interconnected, democratic and complex enterprise which forms the foundation of the society.

○ LITERATURE REVIEW

Literature review. It is established that not all learning takes place in class. The ‘out-of-class’ learning characterised by interaction amongst the peers and the ‘More Knowledgeable Other’ (Vygotsky, 1978) has now been transformed by digital spaces. It is generally seen that students leverage the digital space, especially social media, establishing connections between nodes -non-human, and human for academic purposes and information seeking (Siemens & Downes, 2005). In the digital era, the digital natives thrive on connected learning (Ito et.al, 2013; Selwyn, 2007). Social media penetration and acceptance is due to ease in use and other factors of technology acceptance (Venkatesh, et.al, 2003). In spite of this incidental use of social media as a scaffold by students, its integration in formal education system remains to be accepted largely.

○ THE STUDY

This paper is a part of a larger mixed method research which addresses the above-mentioned gap and leverages Facebook groups as a scaffold to formal learning. This study explores the impact of this scaffold on the academic achievement of students of the higher secondary school education in Mumbai, a city in the western part of India.

Context. To examine the ways in which students leveraged Facebook group scaffold for their academic achievement, a Facebook group titled “XII Commerce 2017-18” was especially created. This group was meant only for the discussion related to the subject of Economics as per their curriculum.

Method. This study is a part of a larger multi- phase mixed method study. The FaceBook group posts were analysed qualitatively to explore the interaction while experimental method was used to collect the quantitative data to estimate the impact on academic achievement.

The experimental and control group comprised each of 30 students. Equivalence of groups was established in terms of the scores and boards of their secondary schooling and the types of junior college in which they were enrolled for higher secondary school. Gender balance was maintained.

Research Questions. The overarching question “Can you learn via Facebook?” with two specific questions formed the basis of this study viz:

Is there evidence of community interaction?

Does this interaction impact the academic achievement?

Data Collection And Analysis. The scaffold of Facebook Group was exercised for around 6 months. The artefacts and content on the Facebook group validated as per the curricular requirements of the subject of Economics were accessed by the students as per their convenience. The students were allowed to post content and interact with the instructor as well as their peers.

Researcher-made achievement tests were conducted in the subject of Economics For estimating the impact of the Facebook group scaffold. The pretest and post test consisted of 25 ‘only one correct answer’ type of MCQs each. Data was collected in the form of online and offline modes for both the tests. Since the scores were repetitive, d’Agostino- Pearson coefficient was used to determine the normality of the groups. The scores of the pretest and post test were subjected to t-test within the experimental group and between control and experimental group to analyse the effect on academic achievement.

○ RESULTS AND DISCUSSION

The qualitative data analysis revealed the community interaction while the quantitative data analysis estimated the impact of the Facebook scaffold on the academic achievement of the sample.

Evidence of Community interaction. There is significant evidence to show interaction on the Facebook group as seen in Fig. 1. In accordance with Connectivism (Siemens, 2004), students were found to interact with these artefacts, make connections, discuss on topics, answer queries, suggest new topics, upload their own artefacts or paste links of other useful sites or content. The qualitative analysis (Creswell, 3rd Ed.)of the posts indicate fruitful discussion over academic concepts, critical thinking suggesting a scaffold waiting to be leveraged by educators for educational purposes.

Impact of Facebook Group Interaction on academic achievement. The analysis revealed that there was a significant difference in the achievement scores of students of the experimental group.



Fig 1. Student interaction over concepts of Economics in the Facebook Group

The t-values of the means of post test scores of the experimental and the control groups indicate that there is significant difference between their academic achievement. It is indicated that increase in the academic achievement of the experimental group can be attributed to the interaction with content, instructor and peers over the Facebook Group used as a scaffold.

Table 1. T-values of means of pre and post tests of Experimental and control group

Group	Mean (Pre-test scores)	Mean (Post-test scores)	t value	P value	Significance
Experimental	15.4	16.93	2.67	0.01	Yes
Control	15.2	15.58	0.62	0.53	No
		T value- 2.328			Yes

CONCLUSION

This study indicates that a Facebook group created with a specific vision with appropriately planned activities and artefacts, may serve to be an efficient scaffold for formal school education. The paper suggests further research in other subject domains, geographical contexts could benefit in understanding the role of social media in educational enterprises. The research seeks to bring to notice the power of an easily accessible scaffold for learning which could be leveraged in pandemic or other similar situations by educational enterprises.

Keywords: Facebook groups in education, social media scaffold, connected learning, social media in education, out-of-class learning.

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SESSION 3. Platforms

IS A GOAL-DRIVEN VIEW ON ENTREPRENEURSHIP SUSTAINABLE IN THE ERA OF DIGITAL TRANSFORMATION? REFLECTIONS FROM THE VIDEO GAME INDUSTRY

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Digital platforms are often considered as a venue for entrepreneurial experimentation with different business models (De Marco et al., 2019). It is argued further conceptualization of market opportunities and business models is needed for digital entrepreneurship (Standing & Mattsson, 2018). Although most popular approaches on the entrepreneurship from the practitioners' aspect reserve a space for learning from the possible failures of a startup (Ries, 2011), they advise to start with a targeted customer segment beforehand and to plan how the startup is to generate value (Blank, 2007; Osterwalder et al., 2010). This goal-driven process described in the entrepreneurship literature may be deemed irrelevant, since in reality strategies based on prediction often fail and entrepreneurial goals change frequently. One of the recent theories that portrays an entrepreneurial process in which goals are shaped and determined as the outcome of the entrepreneurial process is effectuation theory (Sarasvathy, 2001). The theory proposes an artificial view on entrepreneurial opportunities (Venkataraman et al., 2012) and argues that market opportunities are created, rather discovered by the entrepreneur (Sarasvathy, 2013). The theory argues that since the future is unknown, entrepreneurs rely on their existing means when they need to take strategic decisions. Outcomes (product/service/market) are shaped with the contributions of stakeholders who are willing to make commitments (Read et al., 2009) and active feedback mechanisms, while taking risks about alternative routes are based on the affordability of losses in actual terms (Sarasvathy, 2001; Sarasvathy, 2009).

● ENTREPRENEURIAL DECISION-MAKING IN THE VIDEO GAME INDUSTRY

Applying a goal driven mindset is problematic for the cultural and creative industries because of their symbolic knowledge base (Chaminade et al., 2020) and uncertain nature of demand for cultural products (Caves, 2000). The case of the video game industry (VGI) is even more complex due to its digital production and distribution components. The video game industry is highly

dynamic; approximately “every six years” a new product has arrived at the consoles market (Chatfield, 2011, pp. 397-399). Entrepreneurs in this sector need to produce in a fast-industrial clock-speed (Cadin & Guérin, 2006) and integrate multiple knowledge bases to keep their ventures alive (Camerani, Masucci & Sapsed, 2015).

In this paper, we investigate how can entrepreneurs using digital platforms sustain their business models? In particular, for which reasons to what extent entrepreneurs rely on effectuation or causation approach at their decisions?

○ METHOD

In this paper, we present key issues from the first author’s dissertation in which she examined with a qualitative methodology the decision-making logics of 22 video game entrepreneurs based in a university technopark and an incubation center. Our research design covers the analysis of decisions of entrepreneurs during their entrepreneurial journeys based on their goal-driven/means-driven qualities and then examination of internal and external factors contributing to their decisions. Data is mainly collected via face to face semi-structured interviews by the help of an interview guideline which covered questions related with the milestone events, challenges, network relations and decision-making approaches (effectuation or causation) of these entrepreneurs during their entrepreneurial journeys. We also used available secondary data such as company websites and news. We interpreted the findings with grounded theory method.

○ FINDINGS AND CONTRIBUTIONS

First, we contribute to the literature on effectuation as process theory. Majority of the existing studies focus on the investigation of the existence of effectuation in specific contexts, or emphasize on which approach (effectuation or causation) generates better results in certain contexts (Dew et al., 2009; Parida et al., 2016; Welter & Kim, 2018) this study demonstrates that entrepreneurial experts frame decisions using an “effectual” logic (identify more potential markets, focus more on building the venture as a whole, pay less attention to predictive information, worry more about making do with resources on hand to invest only what they could afford to lose, and emphasize stitching together networks of partnerships. The process dimension of effectuation has often neglected (Jiang & Rüling, 2019) we open the black box of effectuation as a process by identifying effectuation process characteristics and patterns and thereby unveiling the heterogeneity of effectuation processes. Based on a multiple case research approach, sequential qualitative analysis is used to contrast similarities and differences in effectuation processes among six high-technology ventures. By theorizing the relationship between effectuation principles and process characteristics, we increase the conceptual clarity of effectuation theory and provide insights into how effectuation may be operationalized for scholars in future research.”, “-container-title”: “Entrepreneurship Theory and Practice”, “DOI”: “10.1177/1042258717744204”, “ISSN”: “1042-2587, 1540-6520”, “issue”: “1”, “journalAbbreviation”: “Entrepreneurship Theory and Practice”, “language”: “en”, “page”: “171-202”, “source”: “DOI.org (Crossref). In this study, we looked for the entrepreneurial process of video game entrepreneurs and revealed how decision-making approaches unfolds as they continue through their journeys.

We found that VGI entrepreneurs' decision-making logic was mostly driven by their means rather than goals. They changed their business model, monetization model, game genre, game development platform, and market segment often in order to adapt to the dynamic nature of the sector and to overcome several uncertainties. Our findings also conform the previous empirical studies in which effectuation and causation were used complementarily (Reymen et al., 2015). However, we also observed that the desire to apply prediction-based decision making also existed. Prediction-based strategies could be used by more experienced entrepreneurs whose ventures were more scaled, or those who adopted analytical data tools which helped them to guide their strategies.

Second, our study contributes to the practice and policy in the relevant field. Our findings indicated a coopetition strategy among the entrepreneurs in our sample (Dagnino, 2009). The entrepreneurs had trust-based relationships within the technopark and the nature of the relationship was combined social and professional purposes. The collaboration between entrepreneurs were high and observed as openly sharing knowledge, publishing each other's games, taking and giving feedback, and providing a source of motivation and inspiration. Besides, the network of the incubation center functioned as a consulting authority for their strategic decisions.

CONCLUSION

The journeys of the entrepreneurs showed that entrepreneurs were still faced with the prediction-based view on entrepreneurship at many instances; for instance, when they were applying for entrepreneurship grants or searching for investors. Therefore, we argue that there is a need to find a common language to evaluate the digital business models among the actors of entrepreneurial ecosystems. With the rising rates of digital transformation across the industries, we argue that revisiting our view on entrepreneurship is necessary.

In light of these background and findings, the authors would like to take the opportunity of the KEEN Colloquium to discuss, if any, challenges imposed by digital entrepreneurship into the way we conceptualize business models and market opportunities, reflecting on the case of the video game industry.

Keywords: digital platforms, entrepreneurship, effectuation, video game industry

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CATEGORIZATION OF DIGITAL HEALTH UNICORN PLATFORMS: POSITION IN THE VALUE CHAIN AND PLATFORM OPENNESS

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○ PRINCIPAL TOPIC

Digital platforms are rapidly expanding and have reached the stage of being on almost every corporate board's agenda, it already dominates our daily lives and experiences, platform pioneers have disrupted industries in retail, mobility, and travel meanwhile incumbent firms or the non-digital native companies are shaping their business strategies to platform and ecosystem strategies (Deloitte, 2019). The health care sector is a societally important and engaging setting to study digital platforms, as platform management and evolution in the healthcare sector strongly differ in comparison with platforms in less regulated markets therefore this paper aims to describe digital health unicorn platforms based on the selection of theoretical categories to find out their position in the value chain and platform openness.

○ CATEGORIZATION OF DIGITAL HEALTH PLATFORMS

Digital platforms are a challenging research object because of their distributed nature and intertwinement with institutions, markets, and technologies (de Reuver et al., 2018). Scholars agree that theory on digital platforms is relatively new thus there remains a lot of unanswered questions and under-researched domains for the enhancement of understanding such phenomenon (Jacobides et al., 2018; de Reuver et al., 2018; Taeuscher, K., & Laudien, S. M., 2018; Alstyne et al., 2016).

Scholars provide questions for future research, for examples: are platforms here to stay, how should platforms be designed, how do digital platforms transform industries, how should researchers develop the theory for digital platforms, etc. and also provide some essential theoretical categories that should be analyzed and attributed to, such as the conceptualizations of digital platforms, modularity, governance, openness, level of the technical architecture and domains of application (de Reuver et al., 2018); value creation, value delivery and value capture dimensions (Taeuscher, K., & Laudien, S. M., 2018); the actors of digital platforms and ecosystems (platform owners, providers, users, and producers) and their roles (Alstyne et al., 2016).

○ METHOD

This research focuses on a descriptive multiple-case study within digital health platforms. A descriptive multiple-case research approach was selected to reveal patterns and connections, in relation to theoretical constructs helping to advance digital healthcare platform theory development (Mills et., al., 2010).

Analyzed digital health platforms were selected from the list of digital healthcare unicorns announced by CBINSIGHTS in „Global Unicorn Club: Private Companies Valued at \$1B+“ (2020). The total number of digital health unicorns that appeared on the list as of May 2020 were 33 companies. Every digital health unicorn company was carefully analyzed first to identify digital health unicorns that operate as digital health platforms. Researchers agreed that 13 digital health unicorn companies out of 33 companies operate as digital health platforms, that is: „GuaHao (We Doctor)“, „Ginkgo BioWorks“, „Oscar Health“, „23andMe“, „Oxford Nanopore Technologies“, „Zocdoc“, „Devoted Health“, „Clover Health“, „HeartFlow“, „Doctolib“, „Proteus Digital Health“, „Medlinker“ and „Hims“. Prior to the digital healthcare platform analysis, a conceptual model was formed, based on two criteria of analysis: position in the value chain and openness (see Fig. 1).

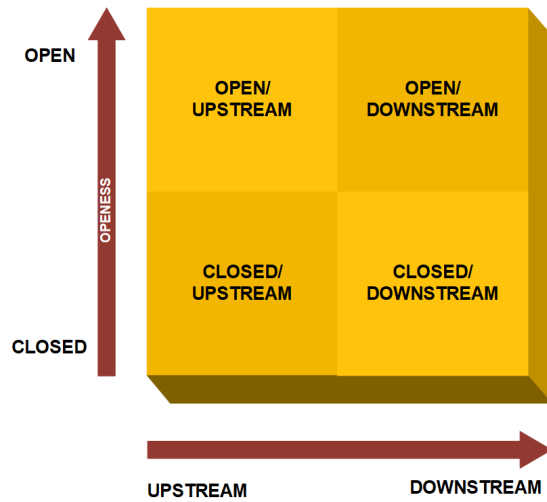


Fig 1. Model of digital health platform analysis based on position in value chain and openness (Created by authors)

Digital platform position in the value chain is seen as “the collaborative arrangements through which firms combine their individual offerings into a coherent, customer-facing solution” (Adner, R. 2006, p.98) where offerings are upstream as components for other products and services (i.e., technological solutions) and downstream as complements for final customers (i.e. healthcare services for patients). Platform openness is the second category of digital health platform analysis. Platforms are considered to be open or closed based on the level of organizational arrangements like entrance and exit rules and openness of technologies and software development (Alstyn et al., 2016).

○ RESULTS

Based on the analysis of two categories, position in the value chain (upstream/downstream) and openness (open/closed), we did categorization of platforms of digital health unicorn companies (see figure 2). The analysis showed that the majority of platforms are closed and downstream meaning that such platforms do not encourage partnerships, are not open for APIs and software development, require memberships and as providing downstream solutions they provide services or products directly to the end-user (e.g. the patient). Results reveal that closed downstream platforms operate as a profitable or successful business model. Two platforms are open and provide downstream services, one closed and provide upstream services, meaning that being closed upstream and open downstream business model are not very vital in digital healthcare sector

meanwhile the category of open upstream platform did not bring any results considering analyzed platforms suggesting that such business model supposingly isn't vital.

CONCLUSIONS

Analysis of digital health unicorn platforms, based on theoretical categories of platform position in the value chain and platform openness reveals that the majority of analyzed digital health unicorn platforms are closed platforms providing downstream services. A minority of platforms represent open downstream business models and only one closed upstream. Open upstream platforms were not identified through the research highlighting the fact, that platforms that set requirements for entry, exit, and software development and that reach out to the final customer – patient seems to be the most vital business model across digital healthcare unicorn platforms.

IMPLICATIONS

The descriptive multiple-case study enriches the theory of digital health platforms. The study also broadens the understanding of digital health unicorns that operate as digital health platforms. Moreover, the study reveals the most successful and popular business model (closed/downstream) in the field of digital health platforms. Besides, this study opens up opportunities for deeper future research on digital health platforms.

Keywords: Digital healthcare, platforms, platform openness, position in the value chain,

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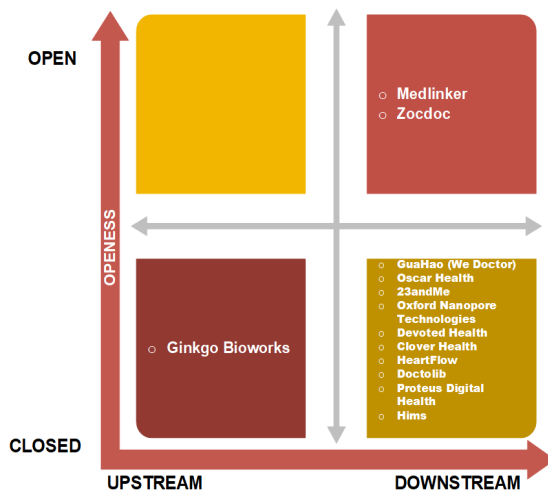


Fig 2. Matrix: Position in the value chain and openness (Created by authors based on research results)

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AN EMPIRICAL ANALYSIS OF THE ROLE OF CROWDFUNDING IN ENTREPRENEURIAL FINANCE IN AFRICA

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○ PURPOSE

The study aims to empirically examine whether the crowdfunding platform as an alternative source of finance, is enhancing the financing of entrepreneurs and small-to-medium enterprises in Africa. Crowdfunding is the alternative source of finance that could provide a supportable solution to address the lack of access to finance (Mollick & Kuppaswamy, 2014). It is the involvement of the internet-based platform and a large number of crowds to contribute, raise money for capital openly and transparently. The role of entrepreneurs and (SMMEs) in fostering economic growth, job creation of many economies is well documented in extant studies (Nyberg & Aberg, 2017). Another strand of studies has advanced 'access to finance' from traditional sources of finance as the major impediment to the development of this sector.

The limited access to finance faced by SMMEs and entrepreneurs around the globe and even the African continent is the major impediment for economic development (Beck & Cull, 2014). Unsurprisingly, the most difficulties facing African SMMEs and entrepreneurs is limited access to finance for their startup and existence (Adebayo & Nassar, 2014; Ayyagari, Demirguc-Kunt, & Maksimovic, 2012; Beck & Cull, 2014). Specifically estimated 84% of SMMEs and entrepreneurs in the African continent do not have access to finance with a funding gap of about \$70 to \$170 billion (Omidyar Network, 2013; Hiller 2017). Many cumulative repeatable studies originate from developed economies hence the current study examines crowdfunding in the African continent rather than prior documented studies.

The wider context of the study is economic growth which is predicated on the role of entrepreneurs (SMMEs) in economic activity. The specific context of the study is that of Financial inclusion of entrepreneurs (SMMEs). Thus, the real-world problem that this study seeks to address is that of 'Access to Finance' or the Financial inclusion of entrepreneurs or SMMEs. The study will therefore address the shortage of access to finance and provide financial inclusion for SMMEs and entrepreneurs in the African continent.

I believe the background to the problem and motivation behind this study has been adequately addressed in the study. This is aptly captured in the abstract as follows: *The study aims to empirically examine whether the crowdfunding platform as an alternative source of finance, is*

enhancing the financing of entrepreneurs and SMMEs in Africa, To establish the determinants of access to finance from crowdfunding sources by entrepreneurs and SMMEs start-ups in Africa, To determine the incidence of a crowdfunding platform that is involved in the entrepreneurs and SMMEs start-ups' funding vis-à-vis purely concerned with a donation in Africa and To determine the influence of social network and social interaction on accessing finance from crowdfunding sources by entrepreneurs and SMMEs start-ups in Africa.

The main research objective underpinning the study is to establish whether the crowdfunding platform is alleviating or reducing the financing constraints faced by SMMEs and start-ups in Africa.

○ RESEARCH METHODOLOGY

The study will adopt a positivist research paradigm, a quantitative research approach and specifically a deductive research strategy to test the research questions of this study. The study will use Africa as a unit of analysis. The study will employ secondary data collected from Africa's crowdfunding platforms that operate via donations, equity and the reward-based models due to its popularity in the African continent. The sources of data include Afristart, IndieGoGo, Kickstarter, and Allied Crowd. Econometric techniques namely; a logistics model and a probit regression models will be adopted to analyse the data using Eviews software. The secondary data for Africa crowdfunding activity of donation, equity, and reward based on crowdfunding platform worldwide. Most of the African crowdfunding takes place on international platforms and there is high accessibility of data for SMMEs and entrepreneurs, they serve as basis data for this study.

The logistic regression model is used to study the relationship between the dependent and independent variables where dependent variables are binary or have two values of 0 and 1 or true or false and multinomial logistic regression is used when the dependent variables have more than two values 1, 2 and 3. The logistic regression analysis to be applied for this study because the dependent variable is a binary indicator of access to finance (if the project has successfully obtained finance from the crowdfunding platform) or no access to finance.

○ SIGNIFICANCE (IMPORTANCE) OF THE RESEARCH

The traditional financing options for SMMEs and entrepreneurs are commercial banks and venture capitalists. However, due to the opacity of SMMEs and start-ups, the traditional financiers usually shun lending to this segment due to their perceived high risk. Crowdfunding has emerged as an alternative source of finance in recent times. Notwithstanding, research on crowdfunding is still at a nascent stage. As a result, it has attracted many academic researchers globally. Although crowdfunding seems to be the only alternative form of financing that may have the potential to reduce the existing funding gap of entrepreneurs and SMMEs, there is a dearth of literature on whether crowdfunding financing is the panacea for entrepreneurs and SMMEs in Africa.

○ IMPLICATIONS OF THE STUDY

It is expected that the study will contribute in several ways. Firstly, the study will contribute to the body of knowledge by unraveling the factors that influence access to finance from crowdfunding

sources by SMMEs and entrepreneurs in Africa. Secondly, it is envisaged that the study will proffer policy advice to African regulators on how best to nurture the crowdfunding sector. Thirdly, the study could contribute to practice, in the sense that the SMMEs and start-ups in Africa will become better equipped (deriving from the results of this study on the determinants of access to finance from crowdfunding sources) to source funding from crowdfunding sources. Platform managers to be able to identify factors influencing the crowdfunding success.

Keywords: Crowdfunding; access to finance; donation; reward; SMMEs, entrepreneurs, start-ups; Africa; loan and equity.

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WHY FINANCIAL DISTRESS IS TOPIC FOR MACHINE LEARNING EXPERTS?

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Financial distress (or financial crisis) is a situation when a company has difficulty fulfilling required payment (Cheng et al., 2019), after which the company goes to the survival or bankruptcy stage. Bankruptcy is defined as the final state in which the company stops its operations due to financial distress (Pham Vo Ninh et al., 2018). A fundamental principle of asset pricing is that „securities with higher risk should compensate investors with higher returns” (Kim et al., 2019). In contrast, a company with higher financial distress tends to be riskier but has lower returns. This leads to financial distress puzzle. So, business health evaluation is very important for diverse parties, e.g. creditors, investors, shareholders, partners, etc. This topic attracts researchers and practitioners attention a long time, with the first formal models proposed by Altman (1968) and Beaver (1966) (Joshi et al., 2018) the Machine Learning tool used for prediction and various other factors are essential in building an efficient prediction model. The dataset includes financial ratios as attributes that are derived from the financial statements of various companies. The most influencing ratios that are required for predicting bankruptcy are selected on the basis of the Genetic Algorithm which filters out the most important ones from different existing bankruptcy models. These ratios of different companies are fed as an input to train the model being implemented in R. The prediction algorithm used is Random Forest, which will enable us to differentiate between bankrupt and non-bankrupt companies.”, "container-title": "2018 Second International Conference on Intelligent Computing and Control Systems (ICICCS in the late sixties, and the development of more advanced methods and tools continues up to now, allowing to identify possible company risks in both bankruptcy and financial distress forecasts (FDF) (Shen et al., 2020) better. Bankruptcy prediction is typically a binary classification problem (whether the company will go bankrupt or not), but it is a challenging task; however, it is generally believed that “many symptoms and alerts can be observed before any financial problems that businesses may encounter” (Huang & Yen, 2019). Bankruptcy prediction model performance depends not only on the employed model but on the size and type of the data (Joshi et al., 2018) the Machine Learning tool used for prediction and various other factors are essential in building an efficient prediction model. The dataset includes financial ratios as attributes that are derived from the financial statements of various companies. The most influencing ratios that are required for predicting bankruptcy are selected on the basis of the Genetic Algorithm which filters out the most important ones from different existing bankruptcy models. These ratios of different companies are fed as an input to train the model

being implemented in R. The prediction algorithm used is Random Forest, which will enable us to differentiate between bankrupt and non-bankrupt companies." , "container-title": "2018 Second International Conference on Intelligent Computing and Control Systems (ICICCS. The majority of financial distress and bankruptcy researchers are making different financial ratios combinations, which are based on annual financial statements: balance sheet and income statement. (Zoričák et al., 2020). A systematic selection of financial ratios, relevant estimation methods, and samples are the key indicators for early FDF or bankruptcy prediction (Oz & Simga-Mugan, 2018). In the new developments of FDF methodology novel features are added continuously:

- 1 Macro indicators (is considered due to incorporation macro dependent dynamics (Hernandez Tinoco et al., 2018); additional indicators related to the country in which a company operates importance (from global markets perspective) (Fernández-Gámez et al., 2020); cross country analysis (Khoja et al., 2019), macro instability indicators incorporations (inflation, unemployment) (Pham Vo Ninh et al., 2018));
- 2 Industry indicators (it is worth to consider due to business failure rates, which is different across industry sectors (Khoja et al., 2019). Moreover, industry classifications (characteristics) raise the question of whether a single bankruptcy prediction model is sufficient to evaluate the financial conditions in different industries (Sayari & Mugan, 2017). For example, a better liquidity ratio is easier to achieve in e-services than in the production of furniture. So, can be used different financial ratios in analyzes, depending on ratio importance to the industry group (Sayari & Mugan, 2017).);
- 3 Additional indicators:
 - 3.1 Board, management team indicators (aspects of “board composition, ownership structure, management compensation, and personal characteristics add the predictive power of financial ratios and macroeconomic factors to the model” (Li et al., 2020). For example, using relationship data can be analyzed manager’s previous experience in firms with bankruptcy scenario (Tobback et al., 2017). Besides, change in CEO leads to the organization’s culture changes and new practices (Chiu & Walls, 2019));
 - 3.2 Social responsibility indicators (companies with higher socially-responsible behaviour levels have lower default risks and financial distress, which makes companies environment more pleasant and financially stable, or countries economy stronger (Boubaker et al., 2020));
 - 3.3 Social sentiment indicators (“company sentiment is significantly correlated with a firm’s financial status” (Wang et al., 2018). The higher prediction results of the FDF model can be achieved by the combination of the financial ratios with a sentiment from text. (Wang et al., 2020));
 - 3.4 Other (such as tax aggressiveness indicators (the company will undertake tax avoidance strategies (Richardson, Lanis, et al., 2015) (Richardson, Taylor, et al., 2015); intellectual capital factors (sales per employee, equipment per employee (Chiou et al., 2017)); etc.).

Hence, a combination of all these indicators is challenging for Artificial Intelligence (Machine and Deep Learning) experts as well:

- 1 Imbalanced data sets (Low model performance is often related to the imbalance data. (Gnip & Drotár, 2019). The number of companies, that are financially successful is significantly higher than financially distressed (Sun et al., 2020). The proportion of operating vs bankrupt companies ranges from 100:1 to 1000:1 (Veganzones & Séverin, 2018). Also, the number of companies in different sectors differs substantially, e.g, there is a large probability to have financial distress for manufacturing company than transportation (Shen et al., 2020));
- 2 Dynamic view (It is important to notice that macro, industry, or other information from media can be used by the model daily, financial ratios in the model are updated one or four times a year depending on the form of the company (private or public). So, the change of the external economic environment can lead to a dramatic change to businesses' financial distress (COVID-19 case). Therefore, it is necessary to dynamical FDP model adaptation to data changes (Sun et al., 2020). Besides, better classification performance is ensured by data collection over multiple periods than “only snap-shot data” (Volkov et al., 2017)we introduce variables based on the Markov for discrimination (MFD.);
- 3 Dimensionality (Dimensionality is related to computation time increase (Aghakhani et al., 2017) and extremely difficult calculations, due to results interpretation difficulties (Son et al., 2019). For this reason, factors reduction techniques are used, e. g. similarity analysis (Khoja et al., 2019), etc.)
- 4 Outliers (In the same industry sector very small companies can indicate outliers formation due to not precise accounting (Zoričák et al., 2020), and some big corporations can tweak their accounting to look better);
- 5 Textual information (additional insights into the health of a company can be extracted from reports, news, and even social media posts. (Ahmadi et al., 2018)business management reports have become publicly available for a large number of companies, and these reports offer the opportunity to assess the financial health or distress of a company, both quantitatively from the balance sheets and qualitatively from the text. In this paper, we analyze the potential of deep sentiment mining from the textual parts of business management reports and aim to detect signals for financial distress. We (1. Besides, a stronger indicator of companies' financial condition can be evaluated by the text phrases or keywords used in annual reports (Wang et al., 2018). Despite, documents are long and complex, written in financial, business and legal language (Ahmadi et al., 2018)business management reports have become publicly available for a large number of companies, and these reports offer the opportunity to assess the financial health or distress of a company, both quantitatively from the balance sheets and qualitatively from the text. In this paper, we analyze the potential of deep sentiment mining from the textual parts of business management reports and aim to detect signals for financial distress. We (1);

- 6 Unlabeled information (or semi-supervised learning) (E.g., bankruptcy-related data is hard to obtain in China due to the inefficiency of the Chinese bankruptcy law (ST regulation), which removes financial distress having companies from the stock market (Geng et al., 2015). An alternative solution for this problem is label proportion learning (Karlos et al., 2016).);
- 7 Modelling (Failure “patterns” recognition (modelling) that characterize different financial situations, that may be leading indicators for bankruptcy, but have revealed many years before it (du Jardin, 2018)).

Hence, it is important to create new financial distress prediction models, which can include incomplete data from diverse sources, and react to discrete signals (e.g., closure of some business due to pandemic). Artificial intelligence models and their application in politics, defence seem promising and may help to develop novel advanced easily modifiable, and precise models.

Keywords: Deep learning, Financial distress, Bankruptcy prediction, Artificial intelligence.

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SESSION 4. Sustainability

BEHAVIOURAL CHANGE TO INCREASE SUSTAINABILITY IN THE REAL WORLD

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Without considerable and long-lasting changes in our current eating, consumption, energy-use, commuting and waste-management habits (to mention just a few), humans will not be able to solve the sustainability challenges that our planet currently faces (McKenzie-Mohr, 2011, p. 544; Yamin et al., 2019). Although sustainable business models can be one of the quickest and most effective ways to promote such changes, the adoption of new products and services (especially those that support sustainability and make use of new technologies) is often faced with the challenge of requiring consumers to change their mind-set and their behaviour. This poses a significant challenge, as adopting pro-environmental behaviours is often more expensive, less comfortable, and requires an additional effort or changes in long-held habits on the part of consumers and other market players (for example, recycling requires additional time and effort, saving energy can reduce comfort, and environmentally friendly products can be more expensive). And yet, a growing number of consumers all over the world are willing to pay more and go through those additional efforts (Reints, 2019; White et al., 2019), and a growing number of organizations are willing to follow suit (Scott, 2019).

In order to profit from the opportunity that this implies, both start-ups and established companies should always attempt a systematic analysis of the psychological and behavioural dimensions of their products and services. This is not only essential to better understand the strengths and weaknesses of their value proposition, but with the right techniques, it can also be used to influence people's perceptions and actions to accelerate both adoption and engagement. Unfortunately, behavioural science is still seen with a mix of enthusiasm and distrust in entrepreneurial communities, and it is often ignored, not taken seriously or applied in an intuitive manner, thus missing on the potential of years and years of scientific research on what seems to work or not.

In this paper, I will present key findings and techniques from the psychological and behavioural sciences that can be used to better understand and change behaviours related to sustainability in real-world contexts. To do this, I will focus on three main areas.

First, I will present how the use of first-person perspective video collected using miniature cameras worn at eye-level by participants (subcams), can inform the analysis and re-design of the physical, psychological and social elements that determine people's behaviour. Particularly, I will focus on how the Subjective Evidence-Based Ethnography (SEBE) technique (Lahlou, 2011) and Installation Theory (Lahlou, 2017), its underlying conceptual framework, are powerful tools to unveil such drivers and create powerful social interventions by analysing and changing behaviour in real-world settings. Because they go beyond past recollections or hypotheticals to focus on an evidence-based dialogue between researchers and participants, these techniques have the potential of creating common understandings of sustainability issues and possible solutions that go beyond technical issues or short-lived rewards.

Then, on the second area, I will present the results of a meta-analysis of over 90 social norm interventions to increase social and environmental sustainability in real-world contexts. I will describe the main characteristics of these interventions and the main strategies and techniques they used to achieve behavioural change. By doing this, and based on previous work for the United Nations, I will also provide practical recommendations on how to create more effective and durable social norm and behavioural change interventions.

Finally, on the third area I will present the results of three field studies that were applied by our lab to better understand and change pro-environmental behaviours in private companies. One, conducted for one of the largest energy producer companies in the world, investigated the main drivers of water and energy waste among UK residents. The findings provide a basic understanding about how consumers view water and energy consumption at home, how they view and act on waste, and what strategies could be used to increase their sense of control and reduce waste. The second study, conducted with a large food-products corporation, applied an intervention that was successful in increasing the consumption of plain water among the children of 400 families over a year (thus improving their health outcomes when compared to sugary drinks). Finally, the last study, which was conducted for a freight transport company in Colombia, applied another intervention that was also successful and showed a great cost-effectiveness to influence the behaviour of drivers, resulting in considerable benefits in fuel consumption and harmful emissions (eco-driving). Together, the findings of these two experiments show the potential of the SEBE and the Installation Theory frameworks to produce large-scale changes in consumption and behavioural patterns than support social and environmental sustainability (even when more traditional initiatives like training or incentives are already being applied).

Together, these three areas will provide a broad conceptual framework, practical research and intervention techniques, as well as real-world illustrations, around how both researchers and entrepreneurs can systematically explore the local determinants of people's behaviour and promote behavioural changes that advance the adoption and engagement of products and services that advance sustainability. This can improve not only economic outcomes, but it also has the potential of bringing about the much needed social and environmental transformations that our world currently needs.

Keywords: sustainability, behavioural change, social norms, intervention, Installation Theory, Subjective Evidence-Based Ethnography, video ethnography, eco-driving.

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SESSION 5. Dynamic Capabilities

DYNAMIC CAPABILITIES IN SOCIAL PURPOSE ORGANIZATION DURING CRITICAL EVENT: CASE STUDY ANALYSIS

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Growing social awareness, need for business accountability, willingness to contribute to society and changes in social values is transforming the way how companies do business, therefore the separate field of social entrepreneurship is emerging. This study aims to investigate the linkage between Dynamic Capabilities (DC) and the social impact of the Social Purpose Organization (SPO) under the critical conditions during the Covid-19 quarantine. During half a year the society and business have contributed by following the imposed restrictions. The spread of Covid-19 represented a critical event because it showed the situation in which social and institutional activities were intimidated and required immediate reactions, which could bring uncertain effects (Rosenthal & Hart, 1991). The presence of highly dynamic and uncertain situations provided the ground to analyse different managerial practices and the importance of DC, which are effective in such a situation (Teece et al., 1997). Critical conditions highlight the possibilities and strengths or weaknesses of SPO performance. SPO needs to apply DC to improve their organizational performance and achieve a social impact. The literature analysis revealed that the DC approach was little researched in public organizations. To fulfill the gap in the research under the critical event, we employ the DC theory to analyse third sector response to the crisis.

The DC theory has demonstrated its impact on competitiveness, organization's practice, and performance results (Best et.al., 2020). DC are recognized as a key factor in an organization's innovativeness and competitiveness (Eisenhardt & Martin, 2000; Teece et al., 1997; Zollo & Winter, 2002). The concept of DC is successfully used in private sector organizations, but there is a lack of study about its adaptation to public sector organizations (Piening, 2013). DC in SPO were studied by De Silva et al. (2019), Nuhu et al. (2019), Best et al. (2020). Piening (2013) De Silva et al. (2019), Nuhu et al. (2019), Best et al. (2020) argue that public sector organizations modify their operational routines in pursuit of improved effectiveness, as private organizations do, and this is an important reason and premise for applying dynamic capability theory in this sector. A review of the research conducted reveals a lack of research about routines of DC that maintain the SPO effectiveness on social and economic value creation focus under critical conditions.

The exploratory approach and a qualitative single case study methodology were utilized in our study. Data was collected based on interviews and document analysis in a non-profit non-governmental organization in Lithuania. The findings highlight that the DC in the SPO was evidenced through the sensing, seizing, and transforming capabilities and the linkage has been revealed in making a social impact. The study elaborates on the theory of DC and the findings help practitioners to focus on the application of DC in SPO. A theory-based deductive approach is chosen to facilitate theory development. Kump's (2018) measuring scale for the questionnaire was chosen to properly represent and analyse the organization routines.

The case selected for the analysis is a charitable organization in Lithuania, which actively reacted during the COVID-19 quarantine and implemented a project to support medical institutions in need with medical antivirus equipment. For the empirical investigation, the method of the semi-structured interview has been used. The presence of the DC was embedded in the managerial team, who executed the project and carried the responsibility of the project. Therefore, to identify the manifestation and impact of DC for social outcomes interviews were conducted with six experts: project team members and project participants. The written interview took place in June 2020.

Our case study sample showed DC of the sensing, seizing, and transformation routines in SPO during the implementation of the project. The originality of our findings lies in the fact that all DC routines emerged on critical conditions in SPO and had the linkages with the created social and economic impact of SPO. Document analysis showed that the project had clear economic value. The funds raised allowed for savings in hospital costs by 33.388 EUR by purchasing of 54 UV recirculators to support five Cancer hospitals in Lithuania. All DC routines emerged in SPO and led to achieve social impact during the critical period.

Results showed the importance of the ability of the organization to identify internal and external resources and knowledge (De Silva et al., 2019) to implement a project and to exploit critical situation opportunities. The SPO team alliance management capabilities (Al Tabbaa et al., 2019) and engagement has been confirmed among the sensing capabilities to find the most impactful cause for the social impact and to maintain a connection with the sponsors for the success of the project. The sensing routine helped to focus on the cause with the highest social impact on the medical community. Integration and combining technology allowed the organization to innovate and use digital technologies in the project. Seizing capabilities allowed successfully implement the project and to achieve an outstanding outcome. The findings reflected that transforming ability is also manifested in SPO activities. The renewal process (i.e., the transition phase) requires the ability to develop new organizational competencies (De Silva et al., 2019). Evidence showed that a new activity model occurs in SPO performance.

The study showed that critical conditions provided the context for the organization for the manifestation of DC to achieve the highest possible outcomes due to an urge to rapidly respond to the demand of beneficiaries and make the highest social and economic impact. It was empirically evidenced that all routines are important for the linkage of DC in SPO and social impact. Our study provides a deeper understanding of the importance of DC application and the need to

develop these routines in SPO to achieve their social mission. During this study, we noticed that positive climate within teamwork and lack of tensions between members, teamwork, emotional stability, and leadership qualities under critical events allowed team members to stay focused and employ their full potential. It suggests that the deployment of DC requires a certain internal organization culture.

Keywords: Social Purpose Organization, Dynamic Capabilities, Social Impact.

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DYNAMIC ENTREPRENEURIAL CAPABILITIES: THE GENESIS FOR AMBIDEXTROUS SMES. A COLOMBIAN CASE STUDY

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○ BACKGROUND

Surviving companies succeed in facing market changes by adapting and adjusting their business models (Helfat, 2003; Santos et al., 2020). The former has been one of the major challenges for companies in emerging countries (Bagheri et al., 2019). In particular for Small-and Medium-Sized Enterprises (hereafter, SMEs) as they encounter a limited ability to create new capabilities. Lanza and Passarelli (2014) acknowledge the dynamic entrepreneurial capabilities (hereafter, DEC) as higher-order-organizational-capabilities that encompass the entrepreneurial orientation (hereafter, EO) and the dynamic capabilities (Eisenhardt and Martin, 2000; Teece et al., 1997). However, albeit the limitations and absence of research and development (R&D) in SMEs, DEC plays a conspicuous role for these firms due to their organizational less complex structure what facilitates team interaction. Furthermore, the role of DEC within SMEs is a research inquiry that requires further understanding and evidence, as it is not only important to create value but also to capture value (Teece, 2014).

While SMEs represent about 90% of the business (Kumar, 2017), these firms contribute to more than 30% of the GDP and are responsible for more than 50% of the workforce in the emerging countries (ACOPI, 2018; OECD, 2019a). Additionally, between the 60% to the 80% of SMEs do not participate in the global market and show a delay in the internationalization orientation, and thus, in their international performance (ANIF, 2018; Bagheri et al., 2019; Bandeira-de-Mello et al., 2016; OECD, 2019a, 2019b). Authors claim that SMEs do not participate in the international context because of the constraints in terms of lack of financing-promotion-experience, limited tangible assets-exportable products and capabilities for innovation management and internationalization (Bagheri et al., 2019; Lanza and Passarelli, 2014)

In the case of SMEs, managers also face markets by exploiting today-home-based opportunities and exploring future new business chances (Bandeira-de-Mello et al., 2016; Teece, 2014). This is what allows a firm to adapt its business model. This ability is well-known as ambidexterity capability (Chen, 2017; Leih and Teece, 2016; O'Reilly and Tushman, 2008; Teece, 2016). In doing so, companies require another set of capabilities such as the absorptive capacity (hereafter, AC) to be able to apply external knowledge (Cohen and Levinthal, 1990) in the companies'

process to increase their international competitiveness (Bagheri et al., 2019; Enkel et al., 2017; García-Cabrera et al., 2016)

As SMEs' international management remains a matter of concern, this study considers the export market orientation (hereafter, EMO) (İpek and Bıçakcıoğlu-Peynirci, 2019) and the international management mindset (Fatehi and Ghadar, 2014).

Despite the abundant research on organizational capabilities, most of it seeks a more causal and linear relationship between the capabilities. Hence, the primary focus of this research is to examine the interplay, more on a complementary-basis, between the four higher-order-capabilities in SMEs (i)DEC ii)EO iii)Ambidexterity Capability and iv)Absorptive Capacity), as a key source of sustainable competitive advantage (Dunning and Narula, 2004).

○ DELINEATION OF THE CONSTRUCTS

The delineation of the constructs is shown based on past research, to explain how managing knowledge through DEC and other higher-order-capabilities, can support the creation of ambidextrous firms to enhance international management.

Our initial model seeks to understand the interplay between these capabilities and the ability of the firm to manage Export market orientation (EMO) and the geocentric mindset. This model will shed new light on how DEC can be identified and the way it operates within SMEs. Our research question is how are DEC related to the exploitation and exploration of opportunities by influencing SMEs' international management in emerging economies?

○ METHODS

In order to examine the relationship between the four capabilities, and SMEs international management in emerging economies, we propose 3 studies:

In order to have a better understanding of a particular phenomenon within its real-life context (Yin, 2017), we propose to start with a pilot case study from a Colombian SME called Suprapack. This company has been in the Colombian market for more than 50 years and today it exports to over 17 countries located in the Americas and Europe.

In this stage, the micro-foundations of the model will be strengthened through a methodological review to study how these constructs have been operationalized in the past. Also, it is imperative to follow a dedicated measure development process (Viswanathan, 2005) in order to give reliability and validity through the Coefficient alpha index for accuracy and internal consistency of the constructs.

In case studies, researchers should aim to collect multiple sources of evidence that should evolve into a chain of evidence, linking research questions, data, analysis and case study reports (Gray, 2017) to obtain insights that could be replicated. In this sense, two data collection methods will be held: i) Systematic interviewing and ii) Focus group with CEO, Export executives, marketing managers and owner-founder-entrepreneur, with the aim of mitigating systematical error.

On a second stage, a multiple case study through interviews and focus groups within four SMEs will be held. This will help: (i) to identify the difference between sectors, (ii) to test the interaction between capabilities, and (iii) as a stronger validation of the constructs.

Constructs	Dimensions
A. Dynamic Entrepreneurial Capabilities-DEC (Lanza and Passarelli, 2014)	<ol style="list-style-type: none"> 1. Distributed entrepreneurial insights 2. Entrepreneurial heuristics 3. Entrepreneurial flexibility
B. Entrepreneurial Orientation-EO (Santos et al., 2020)	<ol style="list-style-type: none"> 1. Risk-taking 2. Innovativeness 3. Proactivity 4. Perseverance 5. Passion
C. Absorptive Capacity-AC (Enkel et al., 2017)	<ol style="list-style-type: none"> 1. Identification of external knowledge 2. Assimilation of external knowledge 3. Utilization of external knowledge
D. Ambidexterity Capability (Enkel et al., 2017)	<p>Exploratory innovation</p> <ul style="list-style-type: none"> • Technological dimension • Market dimension <p>Exploitative innovation</p> <ul style="list-style-type: none"> • Technological dimension • Market dimension
E. Export Market Orientation-EMO (İpek and Bıçakcıoğlu-Peynirci, 2019)	<ol style="list-style-type: none"> 1. Intra-organizational factors <ul style="list-style-type: none"> • Organizational factors • Firm characteristics • Managerial factors • Export behaviour • Export performance 2. Inter-organizational factors <ul style="list-style-type: none"> • Power • Commitment • Trust • Social interaction • Others 3. Environmental factors <ul style="list-style-type: none"> • Industrial structure • Institutional distance • Perceived country image
F. International Management Mindset (Fatehi and Ghadar, 2014)	<ol style="list-style-type: none"> 1. International Geocentric Mindset

Fig 1. Theoretical constructs

On a third stage, a survey will be applied into a more robust data collection (300 SMEs). We will use quantitative methods such as Factorial analysis; SEM; PLS-SEM in order to be able to get generalized results.

The DEC-Like Approach will lead researchers-academicians and practitioners to increase their knowledge and awareness about how DEC, ambidexterity capability and global mindset foundations are needed to improve the international performance of SMEs from emerging countries.

DISCUSSION

How can we capture the relationship between dynamic entrepreneurial capabilities (DEC) which in this case are representing by entrepreneurial orientation (EO), absorptive capacity (AC) and the ambidexterity capability in terms of microfoundations?

How the organization should deploy resources to address the effect of this relationship in export market orientation (EMO) and the international mindset? In this regard, how do these abilities interact within an SME?

Keywords: Dynamic entrepreneurial capabilities, ambidexterity capability, international management, global mindset.

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THE EFFECT OF DYNAMIC CAPABILITIES ON EXPORT PERFORMANCE: THE MODERATING ROLES OF INSTITUTIONAL FACTORS

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Internationalization of SMEs have been the phenomenon since the past few decades and becoming more common in recent years (Yan et al. 2018). This phenomenon has influenced the presence of SMEs in global market to pursue business opportunity (Aulakh et al. 2000; Kiran et al. 2013) and export is the most common mode of entry strategy for SME (Martineau & Pastoriza 2016) to strengthen the market presence and increased the performance. The volatility of global environment creates challenges for SMEs (Oliveira & Teixeira 2011) and export performance is SMEs ultimate objective (Ferrerias-Mendez et al. 2019). In the latest review of export performance literature, the study on the export performance is still under maturity and being categorized by discrepancy and argument (Chen et al. 2016; Katsikeas et al. 2000; Tan & Sousa 2011). In addition, the study on the innovative capability to export performance have not reached a consensus on the nature of the relationship, therefore the issue is still under debating (Park et al. 2017). Furthermore, moderating variables were largely ignored in previous literature before 1998 and to place them into more developed conceptual models for determinants of superior export performance (Peng et al. 2008). Previous studies also focus on the importer country characteristics and less attention given to exporter home country (Krammer et al. 2018; Sousa et al. 2008).

The justification of the study is to fulfill three research gap. The first research gap is on the theoretical perspective. Previous research indicate that the dominant theory is resource-based view (RBV), however this theory unable to explain the competitive advantage of the firm in changing business environment (Villar et al. 2014) and lack of theoretical framework that explain export performance (Monteiro et al. 2019). This study explain dynamic capabilities factors such as market orientation capability, absorptive capability, adaptive capability, and innovative capability, and develop conceptual model in describing the relationship between dynamic capabilities and institutional factors which is government relationship and supplier-buyer relationship. Second research gap is to fulfill the structural gap. There is a non-linear relationship between measures and export performance (Monteiro et al. 2019), and more studies need to focus on the mediation effects on the variables that investigate more on the direct, indirect, and total effect on export performance (Chen et al. 2016), and since most of the previous studies focus on importer-country characteristics and less attention given to exporter's home country (Krammer et al. 2018). This study investigates innovative capability as mediating variable and integrating importer-country charac-

teristic (supplier-buyer relationship) and exporter's home country (government relationship) in the studies. Third research gap is to fulfill the contextual gap when most of the studies conducted in multi-national enterprise (MNE) (Mudalige et al. 2018) and less attention given to small and medium enterprise (SME) (Lejpras 2019) as well as lack of studies on the emerging market context. This study focus on the SMEs from Malaysia as an emerging small economy and manufacturing sector since this sector encourage more internationalization activities.

There are two research questions and three research objectives of the studies. The first research question is what are the SMEs dynamic capabilities that influence export performance and this question is to answer two research objectives which is, first to examine the relationship between market orientation capability, absorptive capability, adaptive capability, and innovative capability, and export performance among Malaysian SMEs, as well as to answer second objective which is to investigate the mediating effect of innovative capability on the relationship between market orientation capability, absorptive capability, adaptive capability, and export performance. The second research question is to what extend institutional factors influence the interaction of SMEs dynamic capabilities, and this research question is to answer the research objective of, to examine the moderating effect of supplier-buyer relationship and government relationship on the relationship between market orientation capability, absorptive capability, adaptive capability, and innovative capability.

In order to answer the research questions and research objective, this study use two theories to explain the phenomenon. First theory is dynamic capabilities theory that explain the ability of the firm to combine, develop, and reconfigure external and internal expertise in order to respond to changing environment (Teece et al. 1997), and the process that rely quickly created new knowledge to produce adaptive but unpredictable outcome (Eisenhardt & Martin 2000). Second theory is institutional theory that proposed the idea that organizations adjust and adapt to the norms and regulations in the institutional environment (Meyer & Rowan 1991), and the institutional framework is upon pillars and summarized three types of institutional pillars namely regulative, normative, and cognitive pillar (Scott 2007).

Concerning the research objective and question, the methodology of the research is quantitative and cross-sectional to determine the behavior (Davies 1994) and to justify the relationship between phenomenon when theoretical framework is guiding the research. The population of the study consists of Malaysian SMEs exporter in manufacturing industry and the sampling frame is gain from Federation of Malaysian Manufacturers (FMM) and Malaysia External Trade Development Cooperation (MATRADE). Two types of data collection techniques which is drop-off for firms located near to research station and secondly mail survey for distance location. The data will be analyzed using SPSS and PLS-SEM that allow the researcher to explain complex model that have large number of variables, and it is less strict in regards to distributional assumptions.

In conclusion, this research is expected to contribute in four areas. The first area is the theoretical contribution by integrating dynamic capabilities and institutional theory in explaining export performance. Second area is structural contribution by combining moderating and mediating variables in the study of export performance. Third area is contextual contribution by focusing

on small emerging countries since more studies are expected to focus on this market. Finally the fourth area is managerial contribution when the SMEs management able to understand the inter-play between dynamic capabilities and the dynamic of institutional environment so that the firm can develop better strategic planning hence greater export performance.

Keywords: export performance, dynamic capabilities, institutional environment.

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TRUST BETWEEN DOCTOR AND PATIENT DURING THE DIGITAL TRANSFORMATION IN HEALTHCARE

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Digital transformation and new digital technologies such as internet of things (IoT), artificial intelligence (AI), mobile and social internet, blockchain and big data, companies in healthcare sector are taking initiatives in order to explore and exploit the advantages of these technologies and their potential (e.g. Sebastian et al., 2017). This includes changes of key healthcare services delivery and affects procedures, as well as organizational structures and management principles in order to carry out these dynamic transitions across the organization (Matt et al., 2015). Meanwhile, healthcare ecosystem is facing rapid and drastic changes due to the maturation of emerging technologies and their rapid penetration to daily use, while the demands of consumers are growing and companies are facing higher competition due to digitalization (Bharadwaj et al., 2013; Li et al., 2018). Although digitalization and digital transformation are becoming a common subject for the ongoing changes in society and organizations, the current state of the literature lacks significant conceptual and empirical studies detailing how organizations are becoming digitally transformed (e.g. Singh and Hess, 2017) and what is the role of trust between doctor and patient in the context of the digitization of services provided.

Digital transformation is defined as „*the process through which companies converge multiple new digital technologies, enhanced with ubiquitous connectivity, with the intention of reaching superior performance and sustained competitive advantage, by transforming multiple business dimensions <...>*“ (Abdelaal and Zakil, 2018, p.). Digital transformation is different from traditional forms of strategic changes because digital technologies determined the speed of change processes and this creates an environment that is much more unstable, uncertain and complex (Matt et al., 2015; Schoemaker et al., 2018; Loonam et al., 2018).

Research on dynamic capabilities has seen an increasing development but been considerably limited to conceptual theories. For example, dynamic capabilities are primarily represented through a microfoundation perspective. This is a view that consists of (1) sensing opportunities and threats, (2) seizing opportunities, and (3) transforming the organization's business model (Teece et al., 2007; Arndt and Pierce, 2018; Salvato and Vassolo, 2018). Trust is the core issue between different healthcare ecosystem actors (healthcare authorities, R&D institutions, start-ups and companies, management of host healthcare institutions, doctors, patients, Information Communication Technologies (ICT) solution providers, investors, etc.) in using digital healthcare services. In this research, we analyze what is the relation of trust between doctors and patients

in the context of digital healthcare technologies and the patient readiness to use digital healthcare technologies. Difference exist between patients with track records and new patients. For instance, when a trustful relationship is created between doctor and patient over time, it could be easier to start communication and treatment through distance. This may not be the case with new patients as they may not be ready to use digital healthcare services until they see wider community acknowledged value of these services. We suggest that new patient's readiness to use the digital healthcare services is influenced by the doctor's dynamic managerial capabilities which were introduced by Adner and Helfat (2003) as *"the capabilities with which managers build, integrate, and reconfigure organizational resources and competences"* (p. 1012). Dynamic managerial capabilities unlike dynamic capabilities are focused on executives (Harris and Helfat, 2013; Bellner and MacLean, 2015) but as the doctors are the direct service providers for the patient it is important to understand what is personal abilities and characteristics necessary for the properly dissemination of innovative services. Deploying dynamic managerial capabilities, it is possible to reconfigure resources in order to achieve better digital healthcare service performance at the same time ensuring trustful relationships between different actors of the healthcare ecosystem. We argue that doctors have the direct effect on a new patients' readiness to use digital healthcare services through trust building. At the organizational level, they are able to create institutional culture of trust, by ensuring trustful and reputable image of institution outside in order to retain and attract doctors and patients.

One of the components of dynamic managerial capabilities is social capital (e.g. Adner and Helfat, 2003) which includes the element of trust (e.g. Nahapiet and Ghoshal, 1998). Trust, at both individual and organizational levels, constitutes the key factor determining the success in implementation of digital healthcare services. According to Lupton (2013), without trust communicating via technologies would not be effective. While a large number of digital health innovations are introduced to the market, only few of them are successfully implemented. One of the reasons is the issue of trust, for instance, doctors and new patients may have concerns about validity and privacy of their health data. Moreover, trust helps to manage psychological discomfort arising from the different risks and difficulty to predict and control the behavior of different actors especially in remote relationships (Gilson, 2003).

The research question is how doctor's dynamic managerial capabilities contribute to the new patient readiness to use digital healthcare services by building trust and supporting publicly acknowledged value of these services.

The aim of this research is to assess doctor's dynamic managerial capabilities, their ability to build trust and how that contributes to the patient readiness to use digital healthcare services, mediated by the publicly acknowledged value of these services.

This conceptual **research significantly contributes** to strategic leadership and dynamic managerial capabilities literature through revealing the growing role of the doctor's capability to build trust in relations based on digital technologies. Also it is evident that trustful relationship might be facilitated by publicly acknowledged value of the digital services, thus executives today are very

much dependent on public opinion and their social capital. From the practical side, the research sheds light on how doctor's should promote new patient's readiness to adopt digital health services through building trust at the organizational and individual levels.

Keywords: dynamic managerial capabilities, trust, digital healthcare services, patient readiness.

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SESSION 6. Artificiality

FOSTERING INTERNATIONAL TECHNOPRENEURIAL NETWORKS THROUGH BLOCKCHAIN TECHNOLOGY

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Influx of cutting-edge digital technologies, big data analytics are pushing entrepreneurs to adopt state of the art, technology-driven business model, pointing towards technological entrepreneurship or technopreneurship. To boost the economy of a firm, country, or region, innovation is an essential driver. In the era of Industrial revolution 4.0, knowledge-based firms are transformed from investment driven or traditional-factor towards innovation driven pattern (Sommer, 2015). As an outcome of this phenomenon, technological entrepreneurship is emerged as an attractive model of business; to which researchers have labeled as a system, process, strategy, capability or individual attribute associated with the creation or recognition of technological opportunities and eventually their exploitation. For technological entrepreneurship, numerous terms are used in literature such as technology entrepreneurship, techno-preneurship, technical entrepreneurship, etcetera (Abbas, 2018). Technopreneurship includes the pursuit of technical and knowledge related opportunities to create, develop and disseminate a domain related knowledge-base and carry out new ventures related to this technological knowledge base.

Presently, through swift development and delivery of products the technopreneurial companies are facilitating humanity across the world to tackle the widespread COVID-19 pandemic. By embracing the modern digital technologies, these firms are continuously extending themselves into the international markets (Fowosire, et al., 2017). This has resulted in the formation of an International technopreneurial network, which is still in nascent hence require further its sophistication and robustness in the research and practice alike. COVID-19 has intensified the need to strengthen such networks from the multiple aspects including technological, social aspects and few others. It is evident that the COVID-19 situation has brought a paradigm shift in the way of undertaking businesses internationally. Physical interaction is reduced, even more, where a variety of business contracts and transactions are increasingly taking place through non-physical (or online) means. However, owing to the diverse cultural and spatial distance, many stakeholders have expressed the doubts and distrust on their partners, suppliers, and other parties in the

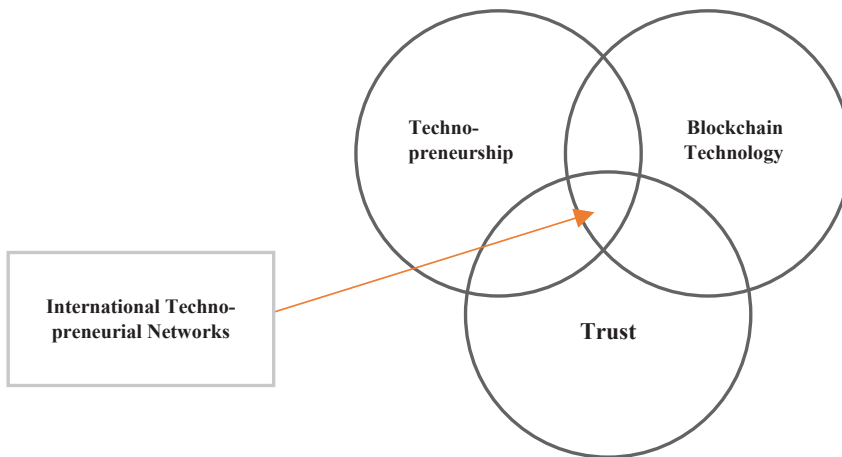
network. Before moving further we define trust as *“the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will make a particular action, irrespective of the ability to monitor or control the other party”* (Mayer et al., 1995). The reason behind lack of trust in these networks is the absence of a robust, secure, and immutable platform upon whom all the stakeholders could undertake their business operations in a reliable and transparent way. To mitigate this issue, we inevitably require a sophisticated platform for these technopreneurial networks globally. The governments of many countries have also realized the importance of such technological networks and ventures. In the case of Lithuania, the government has set the key priority areas for development including digital economy and business, innovation and research, and advancing economic infrastructure. In align with the broader agenda of Lithuanian government, the research question of this study is: *what constitutes international technopreneurial networks in a trusted and reliable way.*

To propose the model of international technopreneurial networks we have adopted the literature review methodology. The underlying reason is to comprehend the dimensions of these networks at this stage, so that further research could be carried out to test the model presented in this study. As a result, this study proposes a conceptual model of trusted and secure international technopreneurial network driven by blockchain based digital technologies. The model has inclusion of technopreneurial firms, element of trust and block chain technology.

A blockchain, at its core, is a distinct kind of data system that keeps up and records information in a manner that enables various stakeholders to confidentially share and access to similar information and data (Koh, et al., 2020). The latest transactions are added in a chronological way to increase the chains of data (Swan, 2015). The data entered in the blockchain can neither be changed nor deleted. Moreover, it works both as a secure and integrated way as well as a network and database as it functions based on defined rules programmed mathematically and enforces them automatically through sophisticated technology (King J., 2020). Since the blockchain encompasses numerous dimensions, including operational, technological, and legal, researchers and technologists are not agreed upon any one particular definition of blockchain (King J., 2020). Blockchain can be termed as a digital database-cum-enterprise system, which firstly records all sorts of transactions that can be simultaneously utilized and shared within a vast and decentralized network and can be accessed efficiently by authorized stakeholders (Alzahrani & Bulusu, 2018). Moreover, it is also defined as an incorruptible digital ledger that is not limited to economic or financial transactions but virtually for everything, including tangible and intangible products and processes (Archa, Alangot, & Achuthan, 2017). On the basis of these characteristics and abilities block chain is a pertinent technology which could be utilized to foster the technopreneurial networks globally.

In order to create the international business networks the presence trust amongst all the stakeholders is pivotal (Salampasis et al, 2015). Blockchain technology is considered as a most trustworthy which enables the integration, information and funds flow in a safe, secure and transparent way (Abeyratne & Monfared, 2016). The inclusion of blockchain technology will result to form

a global network of technopreneurial firms where all the stakeholders will be able to share the information in a trusted way which will expedite the growth of such knowledge-intensive ventures exponentially. The conceptual model of international technopreneurial networks is presented below.



This study proposes a novel phenomenon of blockchain-based international technopreneurial Networks by combining the research field of blockchain and technopreneurship (entrepreneurship). To date, this is the one of those fewer attempts to be made in this particular direction. Earlier, blockchain-based technology is studied in the Management and Business field in the financial and supply chain domain, however, the entrepreneurship domain was missing. The study not only contributes to the literature on techno-prenership but is also in line with the broader agenda of Lithuanian.

This research has carried out literature review method to develop the model of this study. The further research is required to test this model empirically. Moreover, future researchers should also undertake the detailed dimensions of international technopreneurial networks. Further this study has encapsulated the technological and social phenomenon of business including block chain and trust respectively. Future researchers can also take other technological and social dimensions such as other industry 4.0 technologies and the other social factors such as culture. This study has presented a model encapsulating the technological as well social domain of business interactions. This model will enable to foster a formal network of technopreneurial firms which will enhance the efficacy, knowledge-sharing and business interactions in a trusted and reliable way.

Keywords: Technopreneurship, Blockchain Technology, Technopreneurial Networks, Artificial Intelligence and Business, Digital businesses, Trusted Networks.

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VALUE CO-CREATION FOR SUSTAINABLE CONSUMPTION IN SHARING ECONOMY PLATFORMS

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Recent research on the sharing economy tends to start focusing on the analysis of its effect on consumer decisions and priorities, especially in the field of sustainable consumption. Up to date, the definition of the sharing economy is unambiguous and still has different interpretations. In part, this is influenced by the research perspectives when all the sharing economy stakeholders are analyzed separately, not paying much attention to the entire sharing economy ecosystem. All this leads that there is no clear comprehension of what relations are between different sharing economy stakeholders and what value they can co-create. Analysis of the scientific literature indicates the lack of the research and clear definitions of the sharing economy empowered value co-creation and roles of different stakeholders in this process, especially, in the context of fostering sustainable consumption. Much of the scientific literature mostly focuses on the practices of the business performance (Baldassarre et al., 2020), but not on the sharing economy platform stakeholder analysis. Considering all the arguments mentioned above, this abstract aims to define key concepts, relevant for the study of the value co-creation in sharing economy platforms through the promotion of sustainable consumption.

The **method** applied in this research is a systematic literature review to address the research aim and identify and synthesize key concepts related to the analyzed topic.

○ RESULTS AND CONCLUSIONS

The topic of sharing economy is explained in various sources of scientific literature, and partly different definitions of this phenomenon are presented (Mokter, 2020). Munoz and Cohen (2017) define the sharing economy as *"a socio-economic system enabling an intermediated set of exchanges of goods and services between individuals and organizations which aim to increase efficiency and optimization of sub-utilized resources in society"*. The sharing economy has developed and spread to various fields of our life: accommodation (e.g. Airbnb), mobility (e.g. Mobike, CityBee, Uber), fashion (e.g., Reheart), food (e.g., OLIO), finance (e.g. SAVY) and this phenomenon changed the traditional business models. There are identified three main stakeholders in the sharing economy: customers, suppliers and controllers/platforms (Akhmedova et al., 2020; Wirtz et al., 2019). Curtis and Mont (2020) describe sharing economy platform stakeholder roles:

- Sharing Platform – platform or digital technology which provides access to goods/services;

- Resource Owner – provides an asset via sharing platform to be accessed by a resource user;
- Recourse User – accesses an asset via sharing platform/digital technology to be returned to a resource owner.

However, the majority of studies analyze all subjects/actors in different ways, and up to date, there is no widely acknowledged approach on how to identify or measure the value co-creation between them. Prahalad and Ramaswamy (2004) indicate the concept of value co-creation as based on consumers' and companies' interaction and collaboration which brings valuable results for both parties. Companies cooperate with customers achieving continuous improvements in production, services and creates innovations. In the sharing economy, stakeholders can all operate as buyers and sellers (Nadeem et al., 2019) and different types of values can be co-created (Zhang et al., 2018). Literature analysis shows the need for further research on this topic and a clear understanding of the role of value co-creation in sharing economy platforms.

Digital technology or sharing platform plays a vital role in sharing economy operating principle. Based on Acquire, Carbone and Masse (2019), sharing platforms can be divided into four groups according to the business model: shared infrastructure providers, community-commoners platforms, mission-driven platforms, and matchmakers' platforms.

Most of the articles state that sharing economy contributes to more sustainable consumption (Hassanli et al., 2019; Martin, 2016; Heinrichs, 2013). Consumption can be reduced when goods are used not owning them (Seegebarth et al., 2016; Belk, 2014a). Curtis and Mont (2020) explain that the sharing economy provides high sustainability potentials, but it is not sustainable by itself (Yuge Ma et al, 2019). However, the key role for sustainable consumption depends on adequate social, economic and political environments (Martin, 2016; OneEarth, 2015). For example, greater durability or less waste and emission over product lifetime can be identified as advantages in terms of sustainable consumption (Yuge Ma et al, 2019). On the other hand, there is a possibility for user negligence, misbehavior or even ethical problems when there is no presence of property in the sharing economy system.

Sustainable consumption is mostly related to consumer behavior and how it can be transformed to meet economic, social or environmental effect. For example, how to increase consumer consciousness of sustainability and influence to purchase or to consume more sustainable goods/services and at the same time reduce waste, emission, etc. (O'Rourke and Lollo, 2015).

It is useful to review the motives that encourage consumers to participate in the sharing economy. Most of the research identifies financial benefits, sustainability, perceived pleasure, social relationships, and the network effect (Sung, Kim, and Lee 2018; Hamari, Sjöklint, and Ukkonen, 2016; Bucher, Fieseler and Lutz, 2016). It is essential for sharing economy platforms to have a good understanding of consumer and asset owner motivation and behavior at different stages and to identify factors that add value and strengthen the link between the platform, consumer and asset owner.

The sharing of services and products cannot operate effectively if there is no value co-creation between all stakeholders in the sharing system (Lan et al., 2017). Literature analysis, present-

ed in the Abstract, shows that there is a need for new thinking about sustainable consumption in the digital platform-based sharing economy. Relations between producers (or asset owners), consumers, digital platforms and even governments, lead to new studies concentrating on value co-creation among all the sharing economy stakeholders and new possible solutions for sustainable consumption. The possibility to investigate value co-creation for sustainable consumption mechanisms in sharing economy platforms can be the advantage for all participants in the sharing economy system. Further scientific research would be beneficial not only for a clear understanding of the role of the sharing economy in increasing sustainable consumption but also for the identification of new practical methods/solutions for platform developers, consumers and owners.

Keywords: Value co-creation; sustainable consumption; sharing economy, digital platforms.

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TOWARDS AN ADAPTED PERFORMANCE MEASUREMENT MODEL FOR HEALTH IT ENTERPRISES

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○ INTRODUCTION

The expansion of digital tools has created a transformation in healthcare systems (Agarwal, Gao, DesRoches, & Jha, 2010; Kohli & Tan, 2016; Tian et al., 2014) and there is increasing prosperity to invest in the health IT market. However, there is no consent among public authorities, industrialists, representatives of patients and health experts about the long-term success of enterprises involved in technologies of health (Hardiker & Grant, 2011; Kohli & Tan, 2016; Lapointe, Mignerat, & Vedel, 2011; Lemire, 2010). There are so many startups created each year in this competitive market with low survival rates of less than three years. The reason behind the uncertainty of success could come from the multitude of stakeholders in the market of health technology with different and often contradictory requirements (Kohli & Tan, 2016) and the satisfaction of all different needs is very challenging. Due to these complications, the rate of success in this market is quite low and new startups and SMEs show up rapidly in the market and provide the patients with lots of applications, connected objects and services; whereas, with the same rapidity, they fade away and their products and services are abandoned (Connell & Young, 2007; Lorden, Coustasse, & Singh, 2008; Maiga & Jacobs, 2003). This trend shows the necessity to develop a comprehensive and accurate assessment tool for health IT enterprises.

○ RESEARCH QUESTION

The importance of the development of a comprehensive evaluation tool to assess the performance of enterprises that supply and launch health IT projects, objects and services are clear. Prior research includes several evaluations in health IT entrepreneurship, but none of the studies in existing literature provides a comprehensive model of performance measurement to take into account all stakeholders involved; therefore, the problematic of this research will be:

How a strategic performance measurement could be created to evaluate the performance of health IT startups to take into account the context, complications and all involved stakeholders of health IT innovations, services and products?

Answering this question can contribute to the existing literature by creating a strategic performance measurement adaptable to health IT.

CONCEPTUAL BACKGROUND AND PRIOR RESEARCH

Kaplan and Norton developed a comprehensive research model in the 1990s which inherently makes use of strategic and operational considerations. They argued that previous models were majorly based on financial accounting measures and that caused an incomplete measurement of a business performance (Aidemark, 2010; Demartini & Trucco, 2017; Kaplan & Norton, 2004b; Messeghem, Bakkali, Sammut, & Swalhi, 2018; Schalm, 2008). They developed a multidimensional framework for measuring and managing organizational performance with comprehensive criteria to assess customer, internal process and learning. (Kaplan & Norton, 2004a, 2004b). In this line, BSC complements financial measures with operational measures on three dimensions: customer satisfaction, internal processes, and organization's innovation and learning (Chow, Ganulin, Haddad, & Williamson, 1998; Lorden et al., 2008; Naranjo-Gil, 2009). Therefore, BSC is considered a management system rather than a simple measurement system because it provides strategic guidance toward strategy implementation.

Since the context of this study is health IT entrepreneurship, two constructs should be taken into consideration along with financial perspectives to adapt BSC to health IT context. Firstly, health results or *quality of care* as the context is healthcare and secondly, *IS effectiveness* as information technology is the core of health technological innovations. We intend to measure the *IS effectiveness* construct (adopted from DeLone & McLean IS success model) as an antecedent of competitiveness and *quality of care* along with financial outcome at performance level. To do this, we should overcome the cause-and-effect nature of BSC with some modifications and our proposed research model is shown in Figure 1:

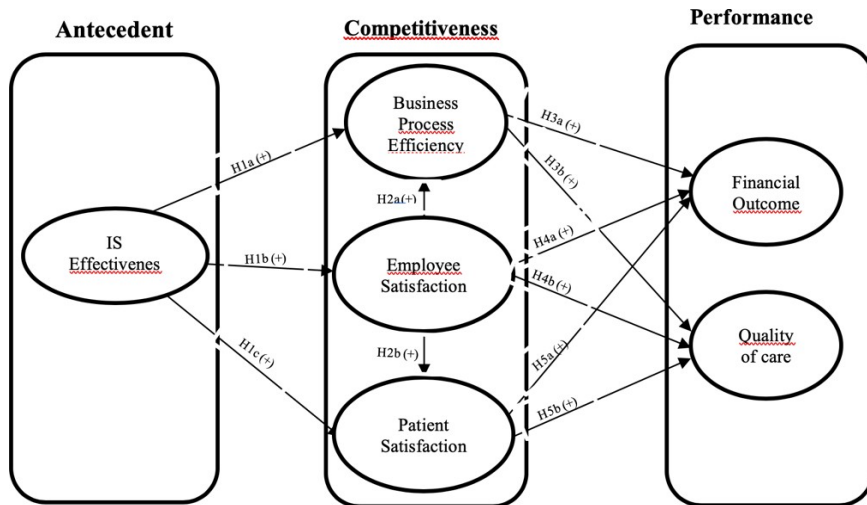


Fig. 1. Proposed research model based on BSC

By changing cause-effect-relationship, this proposed model has divided the constructs into three levels of antecedents, competitiveness and performance.

At *the competitiveness* level and its antecedent, **IS effectiveness** is supposed to be antecedent of competitiveness, giving health IT startups competitive advantage and value to increase their **patient & employee satisfaction** and improve their **business process efficiency**.

At *the performance* level, the impact of each construct of competitiveness is going to be investigated firstly on **financial outcome** constructs, as a vital factor for investor satisfaction as well as startup survival. Secondly, the impact of each construct at *the competitiveness* level will be investigated on the **quality of care** construct, as the main objective of the health industry.

The following hypotheses are tested in this research:

Hypothesis 1a: IS effectiveness is expected to have a positive effect on business process efficiency.

Hypothesis 1b: IS effectiveness is expected to have a positive effect on employee satisfaction.

Hypothesis 1c: IS effectiveness is expected to have a positive effect on patient satisfaction.

Hypothesis 2a: Employee satisfaction is expected to have a positive effect on business process efficiency.

Hypothesis 2b: Employee satisfaction is expected to have a positive effect on patient satisfaction.

Hypothesis 3a: Business process efficiency is expected to have a positive effect on the financial outcome.

Hypothesis 3b: Business process efficiency is expected to have a positive effect on the quality of care.

Hypothesis 4a: Employee satisfaction is expected to have a positive effect on the financial outcome.

Hypothesis 4b: Employee satisfaction is expected to have a positive effect on the quality of care.

Hypothesis 5a: Patient satisfaction is expected to have a positive effect on the financial outcome.

Hypothesis 5b: Patient satisfaction is expected to have a positive effect on the quality of care.

The results of this research showed that IS effectiveness which is a second-order construct and includes information quality and service quality plays a very important role in the satisfaction of the physicians and patients, business process efficiency and employee satisfaction. Although there was no meaningful relationship between employee satisfaction and financial outcome, both business process efficiency and patient satisfaction showed a meaningful relationship with the quality of care as well as the financial outcome.

Keywords: e-health, health IT, startup, evaluation, balanced scorecard, IS success model.

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APPLICATION OF DEEP LEARNING FOR LITHUANIAN LANGUAGE TECHNOLOGIES

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Application of machine learning and especially deep learning is very important in various natural language processing tasks. Over the years, several important Lithuanian language resources and tools have been developed, which have significantly reduced the gap between the language in question and other European languages [Utkā, Amilevičius & Vitkutė-Adžgauskienė, 2016]. Even though the basic Lithuanian language processing tools have already been developed, some more advanced technologies are still in their infancy. It is therefore important to examine the current situation and to choose applications of deep learning which could make the biggest impact.

The last two decades are important for the formation and solution of Lithuanian language technology problems because the necessary steps have been taken so that the considered language can be fully used in the technologies of the 21st century. The analysis of papers on language technologies for the Lithuanian language in 2016-2019 years shows that almost 60% of researchers investigate applications of machine learning [Utkā, Vaičėnonienė & Krilavičius, 2020]. Such abundant use of machine learning methods can be singled out as a major achievement. As a consequence, it can be stated that traditional rules-based methods in Lithuanian language technology activities give way to innovative machine learning methods.

There is no objection to that text representation plays an important role in many natural language processing tasks, especially when deep learning methods are applied. In set terms, word embeddings are a class of methods where individual words are depicted as realistically evaluated vectors in a predefined vector space.

The rise of neural network techniques created an increasing demand for specially designed data. Thus beside traditional datasets such as treebanks, news corpora, speech corpora, spoken language corpora, or lexical databases, considerable research has been carried out on developing and implementing different word embeddings. There are several different embeddings for Lithuanian language, namely, CBOW and Skip-gram with different dimensions (investigated by [Kapočiūtė-Dzikiėnė & Damašėvičius, 2019], and GloVe [A. Bielinskienė et al., 2019] for Multiword expressions identification). Pre-trained transformers were tested on news clustering [Stankevičius & Lukošėvičius, 2020], ELMo embeddings [Ulčar & Robnik-Šikonja, 2019], and FastText (an extension of Word2Vec) n-grams based model for Lithuanian language was developed by [Grave, Bojanowski & Mikolov, 2018] and tested by [Kapočiūtė-Dzikiėnė, Damašėvičius & Woźniak, 2019].

Embeddings and other traditions databases are needed for experiments that address key generic issues such as classification, identification, and clustering. In terms of the challenges of Lithuanian language technology, the widely researched topic can be broadly labeled as classification research. This topic includes classification problems of different phenomena, namely, authorship attribution, author profiling, terminology extraction, topic classification, sentiment analysis, and analysis of political, journalistic, or social media texts. Other popular topics include language technologies for media monitoring, security and defense applications, extraction of multiword expressions, and morphological analysis. There are some initial researches on framing, topic modeling, hate speech, and coreference resolution identification problems.

When solving the main language tasks, there is a problem that the Lithuanian language does not have an orderly process, any pipeline that would help to quickly and correctly preprocess large corpus. When it comes to Part-Of-Speech (POS) tagging and Named Entity Recognition (NER) well-functioning tools, the biggest drawback is felt.

In general, POS tagging is a supervised learning solution that uses words (as units) features. Some libraries give phrases out-of-box such as Spacy¹, but solutions for the Lithuanian language do not yet have high accuracy. Lithuanian Spacy models are multi-task CNN trained on ALKSNIS and TokenMill.lt news corpus. Assigns context-specific token vectors, POS tags, dependency parse, and named entities [Spacy documentation, 2020]. Withal, morphological and syntactic tools still need to be improved.

The objective of NER is to allocate and classify tokens in texts into predefined categories, such as person names, location names, organizations, etc. NER is a subtask of many natural language processing applications, i.e. in information extraction, machine translation, question answering, etc. There are several attempts to create such a system for the Lithuanian language, like [Pinnis, 2012], [Žitkus & Butkienė, 2018], [Kapočiūtė-Dzikienė, Nøklestad & Krupavičius, 2013], but there is no fully functional identifier that can recognize relationships (including coreference resolution) with a small error.

Tools such as POS or NER would help to increase the use of deep learning, process larger amounts of data, and have corpus suitable for training. To increase the applications of artificial intelligence in Lithuanian language technologies, it is necessary to compile data processing guidelines. A modular pipeline is needed to combine multiple language processing tools. This would make NLP technology more accessible to researchers, experts, and software developers.

Reviewing the current situation of the application of deep learning in Lithuanian, it can be stated that to achieve good results it is necessary to pay more attention to large volumes of corpora (especially text representations) and systematize of pre-processing guidelines (highlighting tools whose development should be a priority, such as POS or NER).

Keywords: Lithuanian language, Deep Learning, embeddings, NER, POS, NLP pipeline.

¹ <https://spacy.io/>

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HUMAN CAPITAL CAPACITY BUILDING FOR EMERGING TECHNOLOGIES (ROBOTICS) IN THE CONTEXT OF HEALTHCARE

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○ ABSTRACT

It is projected that by the year 2030, there will be further shortage of physicians (Zhang et al., 2020). Globally, this shortage of physicians is a rising problem, which is posing threats to healthcare industry (Heponiemi et al., 2019). Another chronic, monumental and continuously growing challenge faced by the healthcare is the rising cost (Farahani et al., 2020). According to the findings of Wirtz (2019), the cost of developing Robotics and AI is usually high but once deployed, the physical robots will cost minimal compared to a headcount. Moreover, the cost of virtual robots, once deployed, is negligible. These findings have encouraged the integration of robots in the healthcare. Although, deployment of robots is considered cost effective in healthcare setting, but if the existing human capital lacks the compatibility with these emerging technologies then expected outcomes appear unrealistic.

The deployment of robots in healthcare has reduced the error rate, has resulted in expedition of processes due to automation and has given relief to the healthcare providers from mundane tasks. Human–robot interaction (HRI) is becoming a norm in healthcare (Mutlu and Forlizzi, 2008). However, this implementation of emerging technologies have posed serious challenges for the healthcare providers. The focus of this social and behavioral research is to explore the challenges of the Physicians and nurses who are working, or expected to work, with emerging technologies like Artificial Intelligence (AI) and Robotics. Based on analysis of data, recommendations will be prescribed on human capital resource building and skills augmentation for successful peering with Robots.

Healthcare is complex as it involves a very wide variety of participants with variant levels of knowledge and authority. Successful establishment and integration of emerging technologies in this field is possible only through the development of a strong communication network to overcome the gap among the actors (Proksch et al., 2019). It is important to note that the work attitude of medical and technical workers is different, which can act as a hindrance in finding solutions for medical related problems and adaptation of new technologies (Anwar & Prasad 2018). Physicians and nurses are the front-liners of the healthcare. With appropriate harness and leveraging of human capital in healthcare industry, emerging technology and innovation strategies will be adopted faster (Prajogo & Oke 2016) and leads to sustainable developments (Cavicchi 2017).

Emerging technologies (artificial intelligence, robotics and internet of things IOT), based innovations are believed to enhance productivity and the quality of life (Iizuka & Ikeda 2019). There is an extensive literature available for the development and advancement of the emerging technologies yet the implementation of these technologies on the individual levels remain under explored (Liu et al. 2017; Curado 2018).

Grisot et al. (2018) have urged a deeper need of 'sociotechnical sensibility' for the smooth translation of emerging technologies into the healthcare. The socially situated nature of the technical systems cannot be overlooked, because sociotechnical dynamics demand an in-depth and contextual understating of human experience of interaction between the human and the machine (Ehsan & Riedl 2020).

This research will focus on Healthcare Human capital resource emergence and capacity building for peering with robots.

In the twenty first century, the focus of healthcare research has shifted from molecular and tissue biology to health-related data which is now a matter of innovation policy, being primarily defined under economy and commerce (Tarkkala et al. 2019). Healthcare is one of the industries which is most affected by new industry 4.0 technologies in general and Artificial Intelligence (AI)/robotics in particular (Dal Mas 2019). In a very limited time, exceptional progress has been observed in the use of robots for surgery, which have resulted in the dual benefits, both for patients and surgeons (Kumar et al. 2016). Simultaneously, these new technologies, especially robotics, are providing opportunities to study the relationship and interaction between robots and healthcare human capital, leading to smooth peering.

This study will contribute in the arena of emerging technology implementation in healthcare through effective HRM policy and practice. In addition, the existing literature appears scarce in terms of an established 'Process' or 'Theoretical Framework' for human capital resource emergence (Nyberg & Wright 2015). Thus, this research will have an ambidextrous approach.

This research will focus on the individual (micro) level i.e. how health care professionals Human Capital Resource (HCR) capacity is built when robots are implemented in the healthcare. The experiences of the physicians and nurses interacting with robots in a hospital setting will be recorded via interviews. It is a Qualitative research, which is exploratory in the nature. To collect primary data, empirical methods will be utilized i.e., interviews and questionnaires.

The author intends to conduct the interviews in Finland and/or Germany due to prevalence of robots in the hospital setting. Initially, it is proposed to conduct at least thirty (30) interviews with Physicians and nurses. After six to eight months (temporal separation), interviews will be re-conducted to observe and study the process and progress of peering of Human capital with robotics.

The Healthcare industry is ready to welcome innovations and a new technologies into its systems. Simultaneously, the high-tech companies are developing new methods and processes for the healthcare systems, patient safety and cost reduction. However, the fact is being under-considered that healthcare providers require proper training or upskilling to adjust and adapt to these new technologies. This situation indicates an entrepreneurial opportunity for the establishment of

a training consultancy, which will be specifically and particularly, training the healthcare providers for using and adjusting to the new technologies and innovations. Hence, successfully embarrassing the challenges of emerging technologies in the near future.

Keywords: Healthcare, Human Capital, Emerging Technologies, Robotics and Training.

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Keynote Presentations

Prof. dr. TOMAS KRILAVIČIUS

Chief scientist at Baltic Institute of Advanced Technology
Lithuania

KEYNOTE: Artificiality in Entrepreneurship

Artificiality in Entrepreneurship

Tomas Krilavičius

Baltic Institute of Advanced
Technology

Vytautas Magnus University

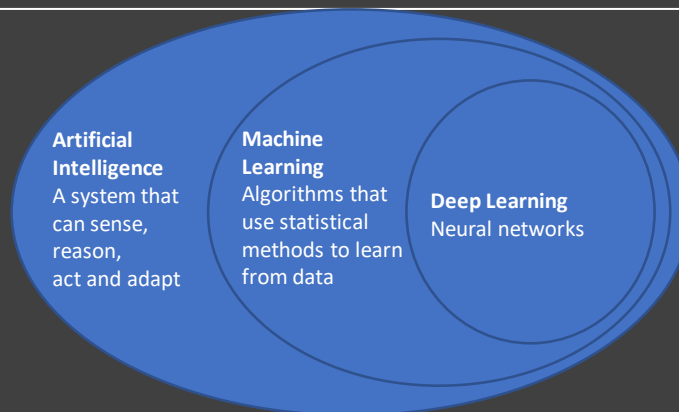
Plan

- Artificiality and Artificial Intelligence
- Risks
- Opportunities
- Recommendations

Artificiality

- Artificiality – life in e-/information systems
- E-space / information systems / software systems
- Artificial Intelligence (AI)

Artificial Intelligence vs Machine Learning vs Deep Learning



Applications of Artificial Intelligence

- Recurring, “dumb” processes
- Standard situations
- Big (sufficient) amount of data
- Risk evaluation: credit scoring, insurance
- Segmentation: customers, products, solutions, ...
- Prediction: warehouses, churn
- Scheduling
- Predictive maintenance

No creativity

Just repetition of examples and large scale “plagiarism”

Artificiality in Entrepreneurship

Digitization of everything

Risks

- Acceptance
- Organizational change
- You must know what you want
- Too complex for humans to comprehend
- Too complex to foresee their behavior
- Dependability and reliance
- Trust



Artificiality is NOT a PANACEA

It is a tool, which, when used wisely, could help a lot

Opportunities

- Digitization – let software take care of book-keeping
- AI for “boring tasks”: recurring tasks, number (images, text, data) crunching
- **Personal assistant: mail, calendar, reminders, ...**

Can We Avoid Artificiality?

NO!

NO!

We should embrace it!

Recommendations

- Have a vision
- Plan wisely
- **Involve all interested parties**
 - End-users (users and managers)
 - IT experts
 - AI experts
 - Domain experts
- Define quantitative criteria (KPI) for performance
- **Roll-out on small scale (MVPs, prototypes)**

Dr. RICHARD ADAMS

Cranfield University, The Bettany Centre for Entrepreneurship
United Kingdom

KEYNOTE: Sustainability in Entrepreneurship



Sustainable Entrepreneurship

Dr Richard Adams

**1st KEEN Forum PhD Colloquium 2020
20th August, 2020**

www.cranfield.ac.uk/som



Two perspectives on sustainable entrepreneurship

We define sustainable entrepreneurship as ...

.... the creation of viable, profitable, and scalable firms. Such firms engender the formation of self-replicating and mutually enhancing innovation networks and knowledge clusters (innovation ecosystems), leading toward robust competitiveness

Carayannis, E.G. (2009). Firm evolution dynamics: Towards sustainable entrepreneurship and robust competitiveness in the knowledge economy and society. *International Journal of Innovation and Regional Development*, 1, 235-254.



Two perspectives on sustainable entrepreneurship

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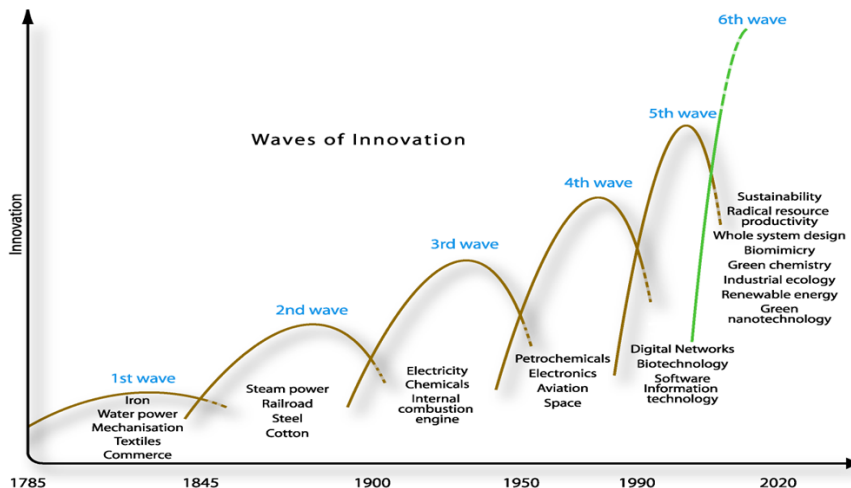
Carayannis, E. G. (2009). Firm evolution dynamics: Towards sustainable entrepreneurship and robust competitiveness in the knowledge economy and social innovation. *International Journal of Entrepreneurial Behaviour Research*, 1, 235-254.

... the examination of how opportunities to bring into existence 'future' goods and services are discovered, created, and exploited, by whom, and with what economic, psychological, social, and environmental consequences.

Cohen, B. & Winn, M. I. (2007). Market imperfections, opportunity and sustainable entrepreneurship. *Journal of business venturing*, 22, 29-49.

What is the likelihood that the next 20 years will look the same as the last 20 years?

What is the likelihood that the next 20 years will look the same as the last 20 years?



Source: The Natural Edge Project

The Natural Advantage of Nations (Vol.I): Business Opportunities, Innovation and Governance in the 21st Century

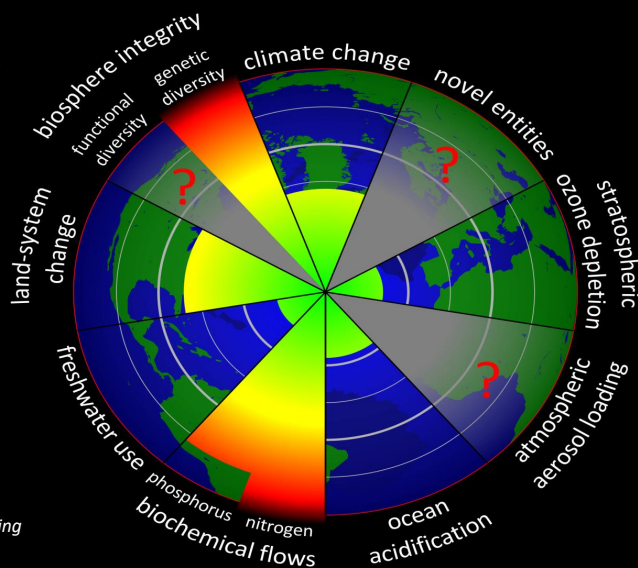
<http://www.naturaledgeproject.net/>

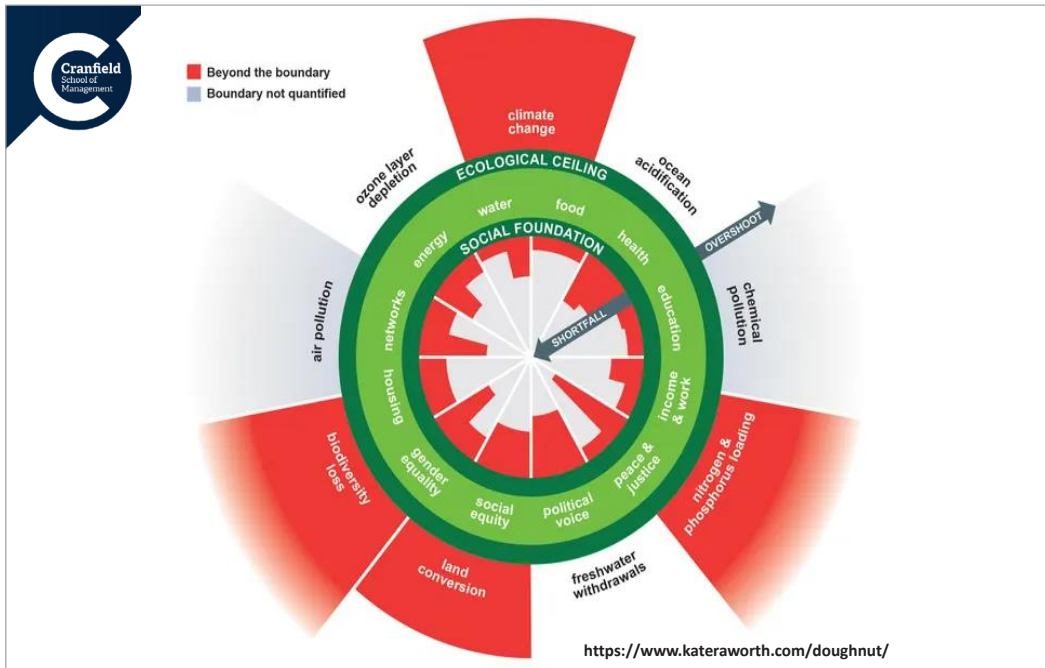
Planetary Boundaries a safe operating space for humanity

- Beyond zone of uncertainty (high risk)
- In zone of uncertainty (increasing risk)
- Below boundary (safe)
- Boundary not yet quantified

Source:

Steffen et al. 2015. Planetary Boundaries: Guiding human development on a changing planet. *Science*, January 2015

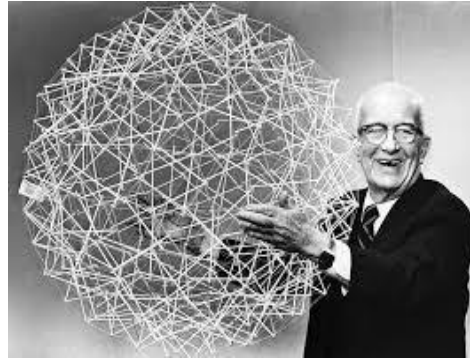






Momentum building for an alternative to business as usual: tomorrow's capitalism must be greener than today's

- Capitalism has proved not to provide sufficient resilience against Covid-19
- Climate change, global warming and environmental degradation
- Increased social inequality and unfairness



"You never change things by fighting against the existing reality; to change something, build a new model that makes the old one obsolete"

Buckminster Fuller



There is one and only one social responsibility of business...

"There is one and only one social responsibility of business—to use its resources and engage in activities designed to increase its profits"

The Social Responsibility of Business is to Increase its Profits
by Milton Friedman
The New York Times Magazine, September 13, 1970.



Who said this?

"Society increasingly is turning to the private sector and **asking that companies respond to broader societal challenges**. Indeed, the public expectations of your company have never been greater. **Society is demanding that companies**, both public and private, **serve a social purpose**. To prosper over time, every company **must not only deliver financial performance, but also show how it makes a positive contribution to society**. Companies must benefit all of their stakeholders, including shareholders, employees, customers, and the communities in which they operate."



Al Gore
An inconvenient
truth



Larry Fink
Founder & CEO
BlackRock



António Guterres
Sec Gen UN



Lord Stern
The Stern Review
Report on the
Economics of Climate
Change



Greta Thunberg
Swedish environmental
activist

Direction of travel

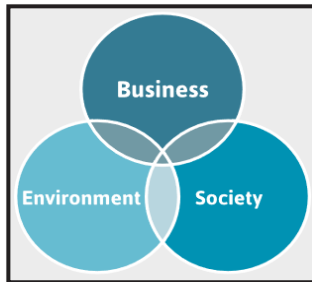
Shareholder value

Financial returns are all that matters: companies privatise gains and externalise losses



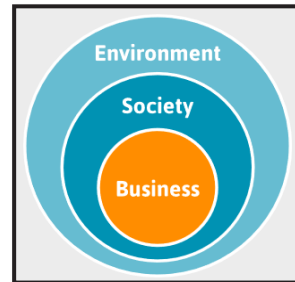
Shared value

Business comes first: negative impacts are often not sufficiently internalised, or are justified by 'doing good' elsewhere



System value

Business in no way hinders – and ideally contributes to – society's progress toward future-fitness

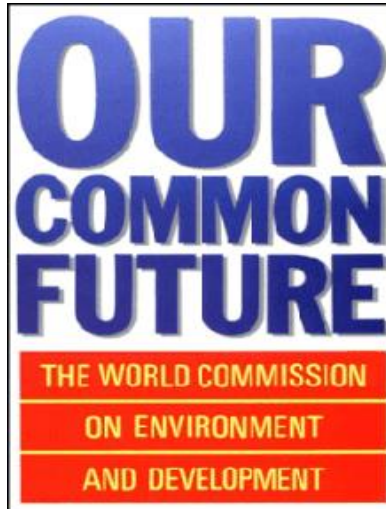


Source: futurefitbusiness.org



SUSTAINABLE DEVELOPMENT

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs



Brundtland, G.H. (1987). Report of the World Commission on Environment and Development: 'Our Common Future'. New York, NY: United Nations.



One of the most neglected questions in the entrepreneurship literature is where opportunities to create goods and services in the future come from.

(Venkataraman, 1997: 122)



Venkataraman, S., 1997. The distinctive domain of entrepreneurship research: an editor's perspective. In: Katz, J., Brockhaus, J. (Eds.), *Advances in Entrepreneurship, Firm Emergence, and Growth*. JAI Press, Greenwich, CT

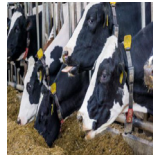
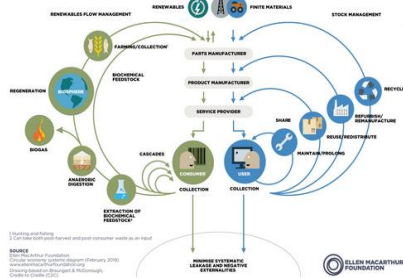


Sustainability disrupts business models

LINEAR ECONOMY



THE CIRCULAR ECONOMY SYSTEM DIAGRAM



A GREEN STIMULUS TO REBUILD OUR ECONOMY

*An Open Letter and Call to Action
for Members of Congress*

Climate and social policy experts recommending green stimulus packages to restart the economy.

The question isn't whether we will next need a major economic recovery stimulus, **but what kind of stimulus should we pursue?** In response we, climate and social policy experts in academia and civil society, have developed a menu of solutions that would collectively comprise a Green Stimulus. **Thus, we propose an ambitious Green Stimulus of at least \$2 trillion that creates millions of family-sustaining green jobs**, lifts standards of living, accelerates a just transition off fossil fuels, ensures a controlling stake for the public in all private sector bailout plans, and helps make our society and economy stronger and more resilient in the face of pandemic, recession, and climate emergency in the years ahead.



"The recovery plan turns the immense challenge we face into an opportunity, not only by supporting the recovery but also by investing in our future: **the European Green Deal and digitalization will boost jobs and growth, the resilience of our societies and the health of our environment.** This is Europe's moment. Our willingness to act must live up to the challenges we are all facing. With Next Generation EU we are providing an ambitious answer." European Commission President Ursula von der Leyen, May 2020
2021-2027: €1.85 trillion



In conclusion

Entrepreneurship finds opportunities in market failures, and sustainability is a required response to diverse market failures of limited resources and inequality.

AND

Entrepreneurs who pursue opportunities purely on the basis of self-interest will find themselves out of step with practice.

Prof. Dr. CHRISTINE VOLKMANN

Professor of Entrepreneurship, Bergische Universität Wupperta, Germany

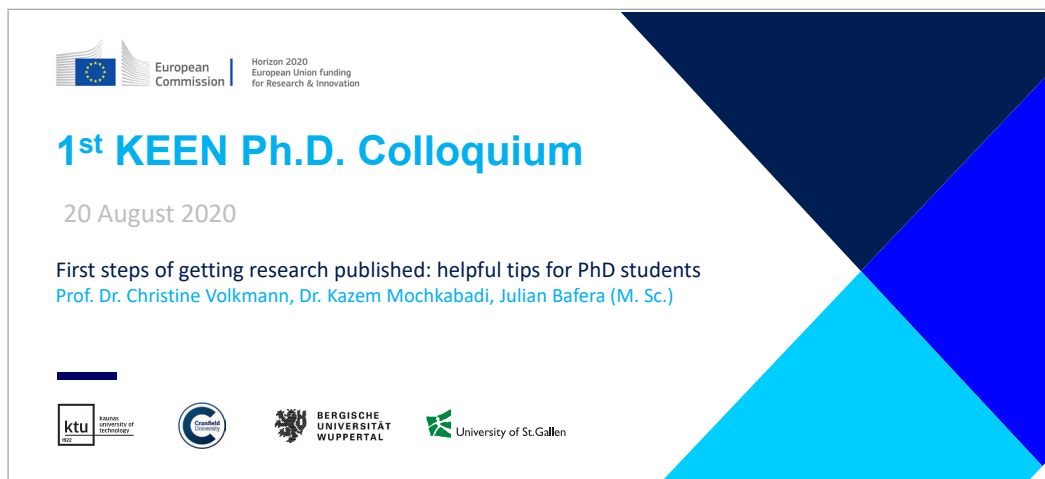
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KEYNOTE: First steps of getting research published: helpful tips for PhD students





European Commission | Horizon 2020
European Union funding for Research & Innovation

1st KEEN Ph.D. Colloquium

20 August 2020

First steps of getting research published: helpful tips for PhD students
Prof. Dr. Christine Volkmann, Dr. Kazem Mochkabadi, Julian Bafera (M. Sc.)

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Goals of Ph.D. students

- Primarily, getting their Ph.D.
- However, this is only the first step in an academic career
- Nowadays, it is essential to
- **Publish your work early in high-quality journals!**
 - For that, networking is a prerequisite which can help to achieve that



Why is a (research) network important?

- It provides access to resources, including funding, facilities, and ideas (Adams, 2012).
- Knowledge is better transferred and combined by collaboration, and co-authored papers tend to be cited more frequently (Adams, 2006).
- Allows for easier access to journals
- Drawback of networks
 - None, they always benefit you in some way
 - However, networks are more valuable if you invest some time and travel
 - Sometimes you also need to agree on a shared plan (e.g., when working with co-authors)



Important people in your research network



- Friendly-reviewers (other Ph.D. students, researchers,...)
 - Your paper should always get a thorough look through before submitting to a journal
- Co-authors
 - The quality of papers increase drastically if done by multiple scholars. Further research shows that co-authored papers get cited more often Adams (2006).
- Editors
 - Direct contact with an editor of a journal helps you to get initial feedback and access
- Funders
 - Often you have possibilities to apply to scholarships or funding for research



How to create a network?

- The first step is going to conferences:
 - Notably, in the beginning, going to smaller specialty conferences, to meet all relevant scholars in your research field
 - E.g., EntFin for Entrepreneurial Finance
 - Always present your work!
 - You always will get some feedback and scholars can relate to you
 - You and your work get noticeable
- If you plan a new study think about a person who might be interested in becoming a co-author
 - Just contact the person and ask, almost every scholar is looking for new projects
- Before submitting your paper (especially for special issues) contact the editor beforehand and ask if the topic would be suitable



Key Takeaways

- Go to academic conferences as soon as possible
 - At the beginning, especially smaller specialty conferences are helpful for closer contacts
- Find peers who can do friendly-reviews
 - Contact them early on; most scholars have a lot on their plate
- Try to get in touch with editors as soon as possible
- Address every point of reviewer feedback
 - It doesn't necessarily be integrated into your paper, but then you have to discuss it in the response letter



Questions?

- Feel free to ask us any questions



Literature

- Adams, J. in *International Partnerships of Research Excellence* (ed. Roberts, G.) (2006); available at <http://go.nature.com/zzwn8z>.
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Thank you

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