



**Exploring the Link Between  
Entrepreneurial Capabilities,  
Cognition, and Behaviors**

**Edited by**

**Marta Gancarczyk  
Anna Ujwary-Gil**

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# Table of Contents

<b>Entrepreneurial cognition or judgment: Management and economics approaches to the entrepreneur's choices</b> Marta Gancarczyk, Anna Ujwary-Gil	<b>7</b>
<b>Entrepreneurial opportunity decisions under uncertainty: Recognizing the complementing role of personality traits and cognitive skills</b> Emmanuel Kwasi Mensah, Lawrence Adu Asamoah, and Vahid Jafari-Sadeghi	<b>25</b>
<b>Absorptive capacity in startups: A systematic literature review</b> Ximena Alejandra Flechas Chaparro, Ricardo Kozesinski, Alceu Salles Camargo Júnior	<b>57</b>
<b>Social entrepreneurship as a collaborative practice: Literature review and research agenda</b> Sunna Kovanen	<b>97</b>
<b>Mediating effect of relational capabilities in the relationship between entrepreneurial orientation and SMEs performance</b> Nuryakin	<b>129</b>
<b>The moderating role of self-efficacy on the cognitive process of entrepreneurship: An empirical study in Vietnam</b> Duong Cong Doanh	<b>147</b>
<b>How journalism experience translates to social entrepreneurship: An intention formation study of the Art Yard at Dadaocheng in Taiwan</b> Huei-Ching Liu, Chaoyun Liang	<b>175</b>
<b>The developing speciality coffee businesses of Bangkok, Thailand and Penang, Malaysia. A story of entrepreneurial passion and creativity?</b> Mark Azavedo, Art Gogatz	<b>203</b>
<b>Introducing a functional framework for integrating the empirical evidence about higher education institutions' functions and capabilities: A literature review</b> Dorys Y. Rodríguez-Castro, Juan Aparicio	<b>231</b>
<b>Consumer attitudes and behavior towards organic products: Evidence from the Lithuanian market</b> Lina Pilelienė, Vilma Tamulienė	<b>269</b>



# Entrepreneurial cognition or judgment: Management and economics approaches to the entrepreneur's choices

Marta Gancarczyk<sup>1</sup> , Anna Ujwary-Gil<sup>2</sup> 

## Abstract

**Purpose:** The explanation of entrepreneurial choices is relevant for efficient resource allocation and wealth of individuals and societies. The economics and management studies in entrepreneurship present both complementary and alternative views on the antecedents of entrepreneurial decisions and actions. This paper aims to synthesize this discussion, propose the processual and configurational approach that bridges the extant views, as well as to present the contribution of the papers in this issue to exploring the link between entrepreneurial cognition and choices. **Methodology:** Based on the narrative literature review, we present the major constructs describing how entrepreneurs make judgments under uncertainty and select particular decisions and actions. Then, we suggest how these differing assumptions can be adopted within processual view, as well as based on the configurational approach to judgments and actions of entrepreneurs. **Findings:** The research included in this issue treats the concepts of entrepreneurial discovery and creation as complementary rather than alternative. Moreover, the referred studies acknowledge the role of capabilities, personal traits and entrepreneurial cognition in enterprise performance and intentions to run a business. Additional value of this issue is a broad picture of the context and related contingencies, such as geographical location, industrial and firm idiosyncrasies, as well as economic development and social awareness levels in particular locations. **Implications for theory and practice:** This paper synthesizes the extant discussion on the antecedents of entrepreneurial choices, and proposes processual and configurational approaches to bridge theoretical perspectives in this research field. **Originality and value:** We contribute to the literature on entrepreneurial choices by proposing the conceptual links between judgments and

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*behaviors in economics and management studies, and by highlighting how the research in this thematic issue explains the referred links.*

**Keywords:** *uncertainty, opportunity, entrepreneurial cognition, entrepreneurial judgment, the theory of the firm*

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## INTRODUCTION

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Productive entrepreneurship contributes to the well-being of individuals and societies through efficient allocation of resources (Baumol, 1996; Dominiak, Wasilczuk, & Starnawska, 2016; Gancarczyk, 2019; Ujwary-Gil, 2019). Therefore, disentangling how entrepreneurs make choices is a fundamental issue both at the micro- and macro-analytical level. The dynamic and idiosyncratic nature of entrepreneurship stems largely from unique entrepreneurial perceptions and judgments (Barney & Felin, 2013; Foss & Klein, 2012, 2015; Gaglio & Katz, 2001; Kirzner, 1997) as well as from environmental contingencies (Welter, 2011; Zahra & Wright, 2011; Dvouletý & Orel, 2020). Therefore, explaining entrepreneurial decisions and actions requires both in-depth understanding of cognitions, judgments, personal traits, and contextual conditions for owner-managers, such as currently owned assets and external phenomena and trends (Chen, Mitchell, Brigham & Howell, 2018; Davidsson, Delmar & Wiklund, 2006; Dobbs & Hamilton, 2007; Foss & Klein, 2015; Packard, 2017; Selden & Fletcher, 2015). With reference to the antecedents of entrepreneurial choices, the economics and management studies present both complementary and alternative views. These revolve around the major constructs, such as entrepreneurial opportunities, cognition versus judgments, as well as creation or realist, or middle-ground assumptions about the ontological status of opportunity (Kirzner, 1997; Knight, 1921; Foss & Klein, 2012; Alvarez & Barney, 2007; Sarason, Dean, & Dillard, 2006; Ramoglou & Tsang, 2016).

This paper aims to synthesize the discussion of the antecedents of entrepreneurial choices, propose the processual and configurational approach that bridges the extant views, and present the contribution of the papers in this volume to exploring the link between entrepreneurial cognition and choices. We use narrative literature review to present the major constructs and assumptions regarding how entrepreneurs make judgments in the conditions of uncertainty and select particular decisions and actions. The contribution of this paper rests on proposing the conceptual links between entrepreneurial judgment and choices in economics and management perspectives, and by highlighting how the research in the current thematic issue explains the referred link.

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In the next section, literature review is performed. We structure the discussion on individual-opportunity relationship in different conceptual approaches adjacent to management or economics fields. A processual view is proposed as a conceptual platform to accommodate the views on entrepreneurs' judgments and choices. The following paragraphs refer to the theory of the firm as the theory of entrepreneurship. Transaction cost economics and the resource-based view (RBV) were recommended as theoretical groundings, representing the major perspectives on the nature of the firm rooted in economics and management. By confronting and integrating their assumptions, we propose configurational explanation of owner-managers' judgments, decisions, and actions. Following these conceptual foundations, the paper explains how the studies in this thematic issue contribute to the understanding of the links among entrepreneurial judgments and choices. The section on the implications for future research specifies new promising areas of study, stemming from the presented papers. The conclusion follows.

## LITERATURE REVIEW

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### **Perspectives on individual-opportunity nexus and the processual approach**

Entrepreneurship as nexus of individual and opportunity has long tradition and intuitive relevance for the vast community of scholars and entrepreneurs themselves (Shane, 2012). However, the point of argument in this regard stems from the understanding of the nature of opportunity, which ultimately led to the questioning of usefulness and validity of this construct (Foss & Klein, 2017; Ramoglou & Tsang, 2016, 2017; Alvarez, Barney, McBride, & Wuebker, 2017). Economists laid conceptual foundations of the entrepreneurial activity and its economic importance, with the emphasis on economic rationales of wealth creation through innovation (Schumpeter, 1934). The economics studies acknowledge the importance of individual choices under uncertainty that target opportunity recognition or discovery. The underlying assumption is that opportunities represent objectively existing possibilities. The possibilities are framed by enabling and constraining factors that are exogenous to an individual, such as market trends and needs or external shocks (Marona & Tomal, 2020). Opportunity is then a construct or metaphor representing the possibilities that are discovered and exploited by alert individuals (Kirzner, 1973; Foss & Kline, 2015). Entrepreneurs are capable of recognizing possibilities (or market propensities) and actualizing them into wealth through

commercialized products and services (Ramoglou & Tsang, 2016, 2017; ). This activity is not merely a discovery, but it consists in the creation of ideas and inventions or in the process of creative destruction (Schumpeter, 1934). Nevertheless, creativity and subjectivity concern how entrepreneurs address external opportunities with products and services rather than opportunity itself. In economics studies, the individual-opportunity nexus is also described as the process of matching the entrepreneur's and firm's capabilities with environmental opportunities, i.e. identifying the fit between internal potential and external conditions (Penrose, 1959).

Kirznerian ideas of alertness and opportunity discovery were further developed into the entrepreneurial discovery stream in management literature, and subsumed as critical realist perspective on entrepreneurial activity (Shane & Venkataraman, 2000, Shane, 2012). Recently, this approach has also been supported by Ramoglou and Tsang (2016, 2017), who capture opportunities under the notion of extant market propensities that are actualized through entrepreneurial cognition, decisions, and actions. In entrepreneurship and technology management studies, the idea of external enablers supports the idea of independent, external conditions that inspire and stimulate entrepreneurial creative action (Briel, Davidsson, & Recker, 2018;). The concept of external enablers (Briel et al., 2018) emphasizes these determinants of entrepreneurial activity that are external and independent of entrepreneurial judgments and the firm's resources (Götz, 2020a, 2020b; Onwe, Ogbo, & Ameh, 2020; Marona & Tomal, 2020).

Nevertheless, other researchers focused on uncertainty, which makes it impossible to infer or identify objective opportunities at the start of creative activity (*ex ante*). It is only possible to recognize opportunities as embedded in products, markets, and profits (*ex post*) (Alvarez & Barney, 2007, Alvarez et al., 2017). Moreover, idiosyncrasies and equifinality in business success or failure within the same external environments point to the importance of internal potential of individuals and firms (Wijaya & Suasih, 2020). These observations supported subjectivity of the creation process rather than discovering objectively existing opportunities. In the structuration view, the entrepreneur's cognition and action belong to socially-created reality and the individual cognition represents the source of opportunities, as well as explorative rather than exploitative actions to actualize them (Sarason et al., 2006). In this vein, the entrepreneurial cognition and actions are the source of opportunities and the means of actualizing them (Alvarez & Barney, 2007). The concept of creation entrepreneurs explains entrepreneurial decisions and actions through cognitive processes, nevertheless, it also acknowledges external impacts that stem from other than socially-crated reality, such as objective principles of gravity (Alvarez & Barney, 2007). In this

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view, opportunities are cognitive processes rather than objective external conditions (Packard, 2017). The studies of entrepreneurial context reflect the blurring limits between external and internal conditions, researching both internal capabilities and external environmental conditions (Welter, 2011).

Recently, the alternative approaches of entrepreneurial discovery vs creation entrepreneurs met some middle-ground perspectives on entrepreneurial choices (Foss & Klein, 2017). These are concepts of effectuation vs. causation (Sarasvathy, 2001, 2009), bricolage (Baker & Nelson, 2005), entrepreneurial judgment (Foss & Klein, 2012) and enabling constraints (Selden & Fletcher, 2015, among others. Regarding the effectuation logic (Sarasvathy, 2001, 2009), it regards entrepreneurship as emergent process, where decisions and actions are experimental and iterative, arising from the co-evolution of cognitions, the context, and earlier events. The bricolage logic (Baker & Nelson, 2005), emphasizes the deployment of resources at hand that are reconfigured and used in a novel way. The concept of enabling constraints focuses on the run of events and proposes micro-causalities between entrepreneurial perceptions, behaviors, and artifacts that are at least partially generated by earlier events (such as institutions, extant technologies or business plans) (Selden & Fletcher, 2015). The entrepreneurial judgment perspective questions opportunities as a relevant construct. Instead, it proposes entrepreneurs' interpretations and evaluations of the context, which is at least partially objective, framing the choices (Foss & Klein, 2012, 2015). This perspective regards the entrepreneur as exercising judgment about future market conditions, combining and deploying heterogeneous assets and performing ownership of these assets. The judgments (interpretations and evaluations) focus on investment in products and services (asset ownership), and they represent the emergent choices, 'in between' the purely rational and random ones (Foss & Klein, 2017). The middle-ground perspectives depart from a purely adaptive approach and a determinism of contextual influences, as well as from purely subjective and creative role of entrepreneurs vis a vis opportunities.

The concept of creation entrepreneurship and structuration view (Alvarez & Barney, 2007; Alvarez et al., 2017; Sarason et al., 2006) focuses on entrepreneurial cognition and perceptions of reality as sources of actions. This approach highlights capabilities, motivations of entrepreneurs, which is relevant for education, training, and assessment of entrepreneurial inclinations. It is also relevant for the explanation of motivations other than purely economic and profit-oriented, such as lifestyle or social rationales in running a business (Gancarczyk, 2006). The understanding of entrepreneurial cognitive and epistemological aspects is especially useful for the policy supporting entrepreneurial attitudes and would-be entrepreneurs. It also

represents a primary arena for basic research in entrepreneurship, with a view on further application for educational and training purposes. Overall, the primary focus on cognitive processes of owner-managers can be recognized as positive approach that explains how business owners exercise decisions and actions under uncertainty. Nevertheless, the focus and outcomes of this stream are less relevant for incumbent entrepreneurs, who seek practice-oriented, effective choices in business (Ramoglou & Tsang, 2017). Their pragmatic focus is on market, product, and innovation processes to explore new prospective domains and exploit them for the sake of survival and growth. In this vein, the perspective of entrepreneurial discovery gives insights that are more practice-oriented and normative (Ramoglou & Tsang, 2017). It helps to screen environmental conditions and be alert to external enablers in uncertain conditions (Briel et al., 2018; Gancarczyk & Gancarczyk, 2013). Nevertheless, this approach underscores the importance of more nuanced approach to rules of cognition and action.

The middle-ground perspective seeks to address the shortcomings of the above extreme perspectives, applying “in between” approach. The judgment view refers to how entrepreneurs think and make choices, however, the construct of judgment differentiates from cognition. Namely, cognition has a broad scope of perceptions of reality under uncertainty, and is inherently a positive (descriptive) category (Mitchell, Mitchell, & Randolp-Seng, 2014; Sarason et al., 2006). Judgment refers to interpretations, evaluations, that directly precede decisions and actions. Consequently, it is a normative and action-oriented notion (Kirzner, 1996; Foss & Klein, 2017). Nevertheless, to build a novel and more useful grounding for research and practice, the middle-ground views need to acknowledge entrepreneurial dynamics (Li, Murad, Ashraf, Syed, & Riaz, 2020). This can be accomplished by framing it within entrepreneurial process perspectives.

Entrepreneurial process perspectives regard the flow of events as the primary unit of analysis (Gaweł, 2013; McMullen & Dimov, 2013; Steyaert, 2007; Venkataraman et al., 2012). Entrepreneurial event, in turn, is a conjunction of decisions and actions (D&As) (Selden & Fletcher 2015). The process approach enables to bridge the views, which defined the core of entrepreneurship choices either as cognitive structuration (Packard, 2017; Sarason et al., 2006) or as framed by external enablers and constrainers (Chen et al., 2018; Pryor, Webb, & Ireland, 2016). We can assume that the start of the process needs exploration of cognitive aspects (idealist perspective). In further steps, when assets are being gathered and deployed, the explanation of the entrepreneurial process needs to draw from realist perspective that acknowledges extant context and non-random choices. Ultimately, within the entrepreneurial process perspective, the extreme views on entrepreneurial

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choices should be complemented by middle-ground concepts that highlight the interactions between the entrepreneurial judgment, action, and the environment (Welter, 2011; Zahra & Wright, 2011). The process perspective enhances a rich and comprehensive agenda for entrepreneurship research and is valuable for practice. It acts as a platform to accommodate seemingly conflicting views, and to see them as continuum or at least as complementary.

### **Theory of the firm as the entrepreneurship theory**

The judgment view was largely motivated to restore the economics input to entrepreneurship studies. Holding that *the theory of entrepreneurship and the theory of the firm are two sides of the same coin*, Foss and Klein (2015) emphasized the entrepreneur as combining, deploying, and owning assets (the firm). By drawing upon and expanding the earlier classical writings of Knight (1921), Kirzner (1997), and Baumol (1996), among others, the judgment view has potential to renew the links between entrepreneurship research and economic targets of entrepreneurs. This conceptual direction enabled refreshing transaction cost economics (TCE) as one of the leading perspectives on the nature of the firm (Williamson, 1985, 1989, 1991; Gorynia, 1999; Borkowska, Klimczak & Klimczak, 2019). From the viewpoint of entrepreneurial and innovative activity, the understanding of sources and consequences of uncertainty need to be reconsidered in TCE (Hallberg, 2015). Moreover, TCE is often criticized for being static. However, when integrated with the assumptions of the resource-based view of the firm (RBV), it can also capture dynamics and heterogeneity of capabilities (Penrose, 1959; Barney, 1991; Teece, 2007; Ujwary-Gil, 2017; Ujwary-Gil & Potoczek, 2020; Reissova, Šimsova, Sonntag & Kučerova, 2020). TCE and RBV propose alternative assumptions as to motives of economic agents, rationales for the existence of firms, as well as modes and mechanisms of governance (Gancarczyk, 2017). Moreover, they have been considerably supported by the empirical evidence, which justifies their integrated adoption when explaining entrepreneurial choices (Argyres & Zenger, 2012; Chandler, McKelvie & Davidsson, 2009; Foss, 1993). The alternative lenses of RBV and TCE might be helpful to increase possible interpretations, and thus to better reflect the heterogeneity of entrepreneurship through configurational approach (Gibbert & Ruigrok, 2010).

In this vein, the heterogeneous entrepreneurial processes can be based on the exploitation and exploration of opportunities through superior capabilities, as proposed by the RBV (Penrose, 1959). On the other hand, in less favorable contexts of capabilities and contractual arrangements, this process might weigh towards transaction cost rationales. The two perspectives

combined or reconfigured may provide benchmark decisional rules for the entrepreneurs in differing contexts of firm resources and contract conditions.

## THE CONTRIBUTIONS

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The papers in this volume explore the links between entrepreneurial capabilities, cognition, and behaviors, adopting a wide range of theoretical and methodological approaches. Mensah, Asamoah, and Sagheddi perform extensive literature review regarding how cognitive skills and personal traits complement each other in affecting the entrepreneur's decisions to discover or create opportunities in an uncertain environment. They contribute with an integrated approach to entrepreneurial choices, considering both cognitive and personal characteristics, as well as creation and discovery of opportunities. This conceptual basis for a comprehensive conditions in entrepreneurs choices has been specified in the form of propositions for future research.

Flechas, Kozesinski, and Camargo focus on capability perspective in entrepreneurial choices, in particular, on the role of absorptive capacity (AC) in new ventures. Using a systematic literature review, they identify links between AC and knowledge, innovation, and performance dimensions. The study proposes theoretical input to the knowledge on the role of absorptive capacity in the context of newly created companies, and thus it broadens the entrepreneurship and innovation research. It is also informative for the practice of innovation processes in new firm, identifying potential firm strategies in this area.

The paper by Kovanen explores collaborative approach in social entrepreneurship. A systematic literature review enabled knowledge accumulation and structuring the major theoretical approaches in the field. The author finds ambiguity in the construct of collaboration in social enterprise, and difficulties to measure this phenomenon. Besides the synthesis of the field, the study contributes with critical review of conceptual grounds of collaboration in social entrepreneurship.

Nuryakin broadens extant confirmatory studies on the relationship between entrepreneurial orientation (EO) and the performance of small and medium-sized enterprises (SMEs). It supports significance and positive relationships between the referred constructs in the context of furniture SMEs in central Java. Structural equation modeling enabled additional identification of the mediating effect from relational capabilities on the core relationship studied. Nuryakin expands the extant evidence on the strategic role of entrepreneurial orientation in business performance and strengthens theoretical generalization in this regard.

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Doanh studies the entrepreneurial motivations and cognitions of Vietnamese students. The author investigates interrelations between self-efficacy, attitude towards entrepreneurship, subjective norms, perceived behavioral control, and intention to run a business. Unlike the majority of extant research, this study finds entrepreneurial intention (EI) affected by subjective norms both directly and indirectly. Self-efficacy proved insignificant as moderator between subjective norms and perceived behavioral control. However, it performed this role between attitude towards entrepreneurship and EI. This study supports the theory of planned behavior by conforming and nuancing it in the context of Vietnamese would-be entrepreneurs.

Following the focus on entrepreneurial intention, Liu and Liang offer in-depth and qualitative investigation of EI's antecedents with a focus on social entrepreneurial intention (SEI). Unlike the earlier referred studies, which adopted either literature reviews or quantitative approaches, this research uses the case study method. Based on a comprehensive theoretical framework of EI, entrepreneurial event theory and theory of planned behavior, the authors describe, illustrate and explain antecedents of SEI. The paper contributes with an analytical generalization and corroboration of the theoretical framework of SEI with two additional drivers of knowledge capital and work experience, as well as with related conceptual and practical implications.

Another qualitative and in-depth investigation of entrepreneurial motivations and attitudes is focused on specialty coffee businesses in Bangkok, Thailand, and Penang, Malaysia. Azavedo and Gogatz use explorative interviews and they report findings that challenge classical economics assumptions on income and profit maximization. Instead, they find lifestyle and professional passion as dominant motivations. The study supports the view on non-monetary motivations of entrepreneurs and offers theoretical redefinition of entrepreneurial passion as professional excellence or craft passion. Moreover, it is informative for policy-makers and educators.

This thematic issue also hosts two articles published based on the general call for papers. Although not directly linked with the major topics of the current volume, they are valuable for the understanding of entrepreneurship context. Rodríguez-Castro and Aparicio undertake the issue of measuring performance of higher education institutions. They adopt extensive literature review to identify the production models in higher education vis a vis related policy objectives. Moreover, the authors identify types of performance measures, however, they find the means of accomplishing objectives by universities largely underexplored. The paper contributes with the conceptual framework of evaluation functions and capabilities that might be relevant for educational policy and institutions of higher education. Pilelienė and Tamulienė investigate consumer choices, in particular the attitudes and behaviors towards organic

products, as well as their determinants, in the context of the Lithuanian market. The research broadens the knowledge of consumer choices towards organic goods in the specific national context, and it shows discrepancy between the environmental awareness, the knowledge of qualities of organic products, and purchasing decisions. The results are informative both for business and consumer agents, as well as for policy-makers.

## **FUTURE RESEARCH**

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The papers in this issue offer implications for further theoretical studies and empirical investigations. Regarding theory, Mensah, Asamoah, and Sagheddi recommend a combined framework of personality traits and cognitive abilities to study entrepreneurial decisions under uncertainty. They also pave the way to empirical tests by eight propositions that can further be specified to testable hypotheses and operationalized. Other potential research directions are context-specific studies and complexity theory adoption in framing individual-opportunity nexus.

The outlook for future studies in start-up companies' innovation process is offered by Flechas, Kozesinski, and Camargo. They identify interrelated avenues for future studies, such as investigations of individual and cognitive aspects of AC, strategies that new ventures may adopt for knowledge acquisition, as well as fruitful areas for further bibliometric analyses and review efforts.

Kovanen opens an agenda for three areas of future research focused on collaboration in social entrepreneurship. Namely, community and public sector to generate new services, collaboration for resources and employment with a background in power relations among organizations, and collaboration at the network- and micro-levels with a focus on governance issues.

The research by Nuryakin strengthened and nuanced the evidence of the entrepreneurial orientation-performance dependence, by identifying a significant mediator of this relationship. Further studies performed in new contexts might explore this line of deepening the role of EO by testing other mediators that are relevant in these contexts.

The study by Doanh formulates a number of implication that are both substantial and methodological. Resonating with the study by Mensah et al., they recommend the expansion of conceptual framework with personal factors as mediators and moderators of EI, as well as with variables reflecting social capital and regulatory framework, among others.

The expansion of entrepreneurial orientation antecedents in future research was proposed by Liu and Liang in the context of a social enterprise.

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Moreover, they recommend their analytical generalization to be further verified in the multi-case and quantitative methodologies that would measure the role of the constructs studied in their investigations.

Based on their findings about motivations of specialty coffee business owners in Bangkok and Penang, Azavedo and Gogatz recommend that future research is more alert to business passion as craft passion rather than profit-income passion. Moreover, further policy studies might explore these types of motivations and related needs of entrepreneurs in the area of advisory and financial measures.

This issue is also enriched by the future research implications from two papers published based on the general call of our journal. In their study on performance drivers and measures, Rodríguez-Castro and Aparicio recommend more research on the ways of accomplishing the university objectives through particular functions and capabilities. The authors propose a functional framework that might be applied in goal-oriented efforts. They also suggest the application of their framework to study the dynamics and transformations in higher education by corroborating and extending the current set of components and variables.

After recognizing the discrepancies between consumer environmental awareness and knowledge and behaviors towards green products, Pilelienė and Tamulienė propose the extension of their findings and generalizations to accommodate market contingencies and dynamics. It can also be useful to conduct the studies oriented to designing particular green product marketing strategies.

## CONCLUSION

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This paper has synthesized the extant discussion on the antecedents of entrepreneurial choices, and proposed processual and configurational approaches to bridge the extant conceptual approaches. Moreover, we have highlighted the contribution of the studies in this volume to exploring the link between entrepreneurial cognition and choices.

Considering the range of topics, constructs, and approaches, the research presented in this volume treats the concepts of entrepreneurial discovery and creation as complementary rather than alternative. Moreover, the referred studies acknowledge the role of capabilities, personal traits and entrepreneurial cognition in enterprise performance and intentions to run a business. Additional value of this volume is a broad picture of the context and related contingencies, such as geographical location, industrial and firm idiosyncrasies, as well as economic development and social

awareness levels in particular locations. The richness of findings, conclusions and recommendations in the presented research was also due to a wide range of methodologies, ranging from literature reviews, to quantitative, to qualitative studies, allowing for both statistical and analytical generalizations. We believe that this thematic issue brings new insights and broadens our understanding of the links between entrepreneurial cognition, capabilities, and behaviors. Besides expanding knowledge in the research field, it can also benefit practitioners and policy-makers.

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### Abstrakt

**Cel:** Wyjaśnienie przedsiębiorczych wyborów jest istotne dla efektywnej alokacji zasobów oraz zamożności jednostek i społeczeństw. Studia z zakresu ekonomii i nauk o zarządzaniu przedstawiają zarówno komplementarne, jak i alternatywne poglądy na temat decyzji i działań przedsiębiorców. Niniejszy artykuł ma na celu przedstawienie syntezy tej dyskusji, zaproponowanie podejścia procesowego i konfiguracyjnego, które łączy istniejące ujęcia teoretyczne, a także określenie wkładu artykułów z tego tomu do badań nad związkiem między przedsiębiorczym poznaniem a wyborami. **Metodyka:** Na podstawie narracyjnego przeglądu literatury scharakteryzowano główne koncepcje opisujące sposoby dokonywania przez przedsiębiorców osądów oraz podejmowania decyzji i działań w warunkach niepewności. Następnie, zaproponowano wykorzystanie tych podejść w ujęciu procesowym i konfiguracyjnym. **Wyniki:** Badania przedstawione w tym tomie traktują koncepcje przedsiębiorczego odkrywania i tworzenia jako komplementarne, a nie alternatywne. Ponadto, badania te potwierdzają znaczenie zdolności, cech osobowości i percepcji przedsiębiorcy dla wyników firmy i decyzji o prowadzeniu działalności gospodarczej. Wartością tego tomu jest także uwzględnienie szerokiego kontekstu i specyficznych uwarunkowań związanych z położeniem geograficznym, cechami branż i przedsiębiorstw, a także rozwojem gospodarczym i społeczną świadomością. **Implikacje dla teorii i praktyki:** Artykuł dokonuje syntezy dyskusji na temat uwarunkowań przedsiębiorczych wyborów i proponuje podejścia procesowe i konfiguracyjne, które łączą istniejące na ten temat poglądy. **Oryginalność i wartość:** Wkład do literatury na temat wyborów przedsiębiorczych opiera się na wskazaniu powiązań między rozumieniem osądów i zachowań przedsiębiorczych w ekonomii i naukach o zarządzaniu oraz na określeniu, w jaki sposób badania w obecnym numerze tematycznym wyjaśniają te powiązania. **Słowa kluczowe:** niepewność, szansa, przedsiębiorcze poznanie, przedsiębiorczy osąd, teoria firmy

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## Conflicts of interest

The authors declare no conflict of interest.

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# Entrepreneurial opportunity decisions under uncertainty: Recognizing the complementing role of personality traits and cognitive skills

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## Abstract

**Purpose:** The aim of this paper focuses on advancing the entrepreneurial literature by enhancing the understanding of the connections between personal behavior and cognitive skills in decision making under uncertainty. **Methodology:** The method of this research has been adapted the framework used by Garrett and Holland (2015), who developed propositions from the conceptual narratives of how environmental uncertainty and complexity differentially affect the motivations and cognition of independent entrepreneurs and corporate entrepreneurs to engage in entrepreneurial action. **Findings:** The findings of this research provide a conceptual basis for a broader perspective on behaviors and cognitions that motivate or hinder entrepreneurial actions while at the same time, positioning the entrepreneur's decision at the core of decision theory. **Implications for theory and practice:** Theoretically, this research contributes to a holistic view of opportunity decisions. It redirects the traditional analyses path of entrepreneurial decisions discussed distinctively from the personal behavior or cognition paradigm, which does not provide a complete view into the larger entrepreneurial decisions under uncertainty. Practically, our argument provides further insight into the black box of entrepreneurial opportunity decisions under uncertainty and thus highlights the need for a broader perspective for the entrepreneur, especially in the early stage of venture formation, where some cognitions and required personal attributes are needed in consonance for entrepreneurial action. **Originality and value:** Entrepreneurship research on

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*decision making under uncertainty has mainly focused on the effect of uncertainty on entrepreneurial actions, while an attempt at the individual level, particularly, from the cognitive framework seeks to explain why actions differ. Scholarly efforts have also been made on what informs entrepreneurial actions from the perspective of the entrepreneur's personal attributes. However, no integrated approach is offered in the literature to study how cognitive skills and personality traits complement each other.*

**Keywords:** *entrepreneurial opportunity, cognitive skills, personality traits, decision making under uncertainty, entrepreneurship research*

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## INTRODUCTION

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Entrepreneurial decisions on opportunities under uncertainty are at the core of entrepreneurship studies. The decision to discover or create opportunity, and the corresponding action to exploit them, drives market processes and the fulfillment of social and economic needs. In this regard, an entrepreneurial decision under uncertainty defines the boundary and exchange conditions under which individual decision may yield fulfilling outcomes (Short et al., 2010). The literature conveys different decision styles towards opportunity creation or recognition, which most crucially involve the nature of the entrepreneur and his cognition, and to a broader spectrum, the biological building block including genetic factors of the entrepreneur (Nicolaou & Shane, 2010). Mostly, action taking under uncertainty encompasses personality traits or behavioral processes and cognitive skills as well as some heuristics. Cognitive processes that enable entrepreneurs to use simplifying mental models to unify previously unconnected information that help them to identify and explore opportunities have been a critical focal point in decision making. Heuristics and cognitive biases, albeit overconfidence and representativeness (Busenitz & Barney, 1997; Kahneman & Frederick, 2002), counterfactual thinking, affect infusion, alertness schema and pattern recognition (Baron 2004; Gaglio & Katz, 2001), and effectuation process (Sarasvathy, 2001) have all been explored as probable strategies used by entrepreneurs to reach acceptable decisions. However, while much of the entrepreneurship literature had previously viewed opportunity as something enacted, thus suggesting personality traits (Short et al., 2010; Kerr, Kerr, & Xu, 2018), and while a growing number of scholars in recent times view opportunity from the cognitive perspective, there seems to be a conspicuous lack of studies on the complementary role of these two pillars of the literature strands. In fact, the two combine, albeit other factors such as information corridors to demystify the understanding of why some people but not others decide to discover and profitably exploit opportunities (Shane & Venkataraman, 2000).

Recent constructs by McMullen and Shepherd (2006), which assessed the link between entrepreneur action and the role of uncertainty, reveal that the entrepreneur's perception of uncertainty and willingness to bear such uncertainty are the divisive components that separate the entrepreneur's actions from his inactions on entrepreneurial opportunities (Garrett & Holland, 2015; Sadeghi, Biancone, Giacomini, & Secinaro, 2018; McKelvie, Haynie, & Gustavsson, 2011; McMullen & Shepherd, 2006). Further, in analyzing the role of emotions on investment decision under uncertainty, Brundin & Gustafsson (2013) demonstrated that emotions played a significant role in the entrepreneur's decisions to continue or discontinue investment under uncertainty. They noted that personal attributes such as self-confidence and hope magnify the entrepreneur's propensity to invest under high uncertainty, whereas frustration and embarrassment decrease the entrepreneur's predilection to invest in the presence of high uncertainty. In the same vein, Hansen et al. (2016) proposed a model that provided a unified account of different ideologies on opportunity discovery and creation, making it much easier to identify critical elements that matter for decision making on opportunity outcomes. Hansen et al. (2016) were only able to describe the effect of uncertainties as occurrences that are detrimental to the actions and subsequent decisions of the entrepreneur.

While the contributions of previous researchers have been profound to entrepreneurial research on attitudes and behavior, the synthesis between personality traits and cognitive skills remain scant for decision making under uncertainty. The 'why and how' certain actions are taken on opportunity decisions in an uncertain environment have been narrowly discussed to bring a profound generalization of the issue. We address this gap by studying the complementary relationship between personality traits – self-confidence, ambiguity aversion, locus of control, and cognitive skills – alertness to schema, tacit knowledge, counterfactual thinking, while addressing distinctively the implication of each on opportunity decisions under uncertainty. To the best of our knowledge, this paper is among the only few, if there is, which situate entrepreneurial opportunity recognition or creation in the context of decision making under uncertainty.

To sum it up, the objective of this paper focuses on advancing the entrepreneurial literature by enhancing the understanding of the connections between personal behavior and cognitive skills in decision making under uncertainty. While prior studies focused on the implications of the cognition and individual personality attributes of the entrepreneur, less emphasis has been made on the relationships between cognitive skills and personality attributes. Curious questions are the following: do some entrepreneurs use cognitive skills differently and do those skills lead to opportunity

decisions through enhancing their personality traits? More specifically, are the personality traits of the individual differently influenced by how well their cognitive skills are best put to use in an unexpected environment? For instance, will the ambiguity-averse entrepreneur be more alert to opportunity discovery when he has developed his alertness to the schema? On the other hand, will a poor cognitive skilled individual be able to decide on opportunities in time if such an individual possesses good personal attributes to achieve entrepreneurial success as put forward by McClelland (1987)? Developing propositions to argue on these questions, we position ourselves to understand further the “why” and “how” questions (Simon, Houghton, & Aquino, 2000; Baron, 2004) on how some individuals are able to recognize or create opportunities in a complex environment, while others are not able to, even in the light of high cognitive skills or strong personal attributes.

The next portion of this study is used to review themes on decision making under uncertainty. We review entrepreneurial uncertainty and argue that entrepreneurs are not bound to the strictly normative reasoning of the rational choice theorist or the prescriptive argument of the psychological and behavioral economist; instead, they switch on rationalities, using heuristics and biases built on their cognitive skills and personal attributes including available information to make opportunity decisions. This view motivates our contribution to the complementary role of personal and cognitive skills. The method used for this research is discussed in the next two sections. Finally, we engage in a discussion on the views expressed in this paper and make conclusions and suggestions for further research in the future.

## LITERATURE REVIEW

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To position the entrepreneur’s decision at the center of the decision theory, we focus on the review of distinct streams of the literature on decision making under uncertainty. We build on the following strands of the literature: (1) entrepreneurial uncertainty; (2) rational choice theory; (3) bounded rationality-heuristics and biases; and (4) the role of information in uncertain decisions. The second strand provides the normative understanding of decisions under uncertainty from the economic perspective (Savage, 1954; Scott, 2000), while the third strand describes the prescriptive reasoning from the psychological and behavioral economist perspective (Simon, 1957; Kahneman & Tversky, 1979; Gustafsson, 2009). Thus, the review here draws some understanding from not only the historical antecedent of decision making under uncertainty but also how the entrepreneurial decisions differ from some psycho-economic theories of decisions under uncertainty.

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## Entrepreneurial uncertainty

Knight's (1921) work on risk, uncertainty, and profit describes risk as a situation or game that can be known with certainty through measurable probability, whereas it describes uncertainty as having no measurable probability or likelihood of occurrence. The former depicts some degree of uncertainty that is quantifiable and can be avoided by the entrepreneur, making adjustments to reduce his exposure to it. By Knight's reasoning, only the latter rather than the former is essential in explaining the nature of competition and profit. Besides, only through it can it be possible for entrepreneurs to supersede the normal returns associated with equilibrium in competitive markets. Because entrepreneurs cannot prevent uncertainty, neither can they insure against it, and they are characterized by their aversion or tolerance towards it (Amit et al., 1993). Moreover, the uncertainty type manifested eventually determines the entrepreneur's actions and decision policy (Milliken, 1987; McKelvie et al., 2011). Brundin and Gustafsson (2013) show that entrepreneurs attach different attitude to different uncertainty levels with regards to decision making. The uncertainty can be perceived as mild, severe or absolute depending on the available information. Mild uncertainties may pose intangible effects on the decisions of the entrepreneur and hence, manageable. However, severe uncertainties may create difficult situations for the entrepreneur in discriminating between relevant and irrelevant information in the presence of a foreseeable opportunity.

As noted in McKelvie et al. (2011), the specific kind of entrepreneurial actions, however, may depend on the nature of uncertainty, mostly influenced by the level of information asymmetry (Petrakis & Konstantakopoulou, 2015). In regard to the fact that the entrepreneur bears the sole responsibility for unmasking the uncertainty towards making such pertinent opportunity (McMullen & Shepherd, 2006), understanding the nature of uncertainty presents ways to delineate them to match one's decision. In this sense, we can argue that the nature of uncertainty plays a significant role in entrepreneurial decisions. It is important to note that these uncertainties are moderated by the availability of information. Kirzner (1979) suggests that information asymmetry is the revolving factor to market disequilibrium and opportunity recognition, and complete knowledge about the environment balances entrepreneurial decisions. In most instances, the means of handling certain uncertainties using private information, tacit knowledge, and cognitive biases are treated as private resources by entrepreneurs to have a comparative advantage over competitors.

## Rational choice theory

The normative reasoning implied by the rational choice theorists follows the idea that all human actions are rational in character and motivated by want or goals that give optimal satisfaction. Individual decisions must be optimal, decisions ought to follow certain mathematical axioms to be rational; individuals are portrayed as economic agents who are fully 'rational minimizers' of subjective utility (Gigerenzer & Selten, 2002; Boudlaie et al., 2020). The rational choice theory attempts to explain decision behavior according to the assumption of utility maximization based on a selfish or altruistic preference (Neumann & Morgenstern, 1944; Scott, 2000; Moscati & Tubaro, 2011) while its theorists hold the view that people evaluate risky and uncertain prospects by comparing their expected utility values. One of the popularly used, yet well criticized for its non-practical axiomatization in human decisions, is the Subjective Expected Utility (SEU) popularized by Savage (1954). Savage's SEU describes how individuals make decisions under uncertainty in a fascinating way by reducing the whole decision spectrum into a common set of primitives; probability, utility, and options (Fischhoff, Goitein, & Shapira 1981). Under these primitives, the individual has the option to assign a probability of desirable outcomes (utilities) before making decisions. In other words, individuals are considered as identifying an alternative course of actions, anticipating their outcomes, and calculating that which is best for them. Rational individuals select the optimum alternative that gives the best satisfaction (Scott 2000). See also Mensah (2019) on how some mathematical approaches are used for decision making under uncertainty.

Nonetheless, such rationality is largely incompatible with the kind of information, the computational capabilities of the individual, and the environment (Simon, 1957; Gigerenzer & Selten, 2002). As contended in literature from the behavioral economists and entrepreneurial point of view, people behave in the context of complex social phenomena and an uncertain environment can be rational or irrational. These environmental uncertainties are defined as the lack of ability to properly envision the probable outcomes of a decision (Jafari-Sadeghi et al., 2019; McKelvie et al., 2011; Mokhtarzadeh et al., 2020; Smithson, 2012). Although a stream of research (see Downey & Slocum, 1975; Smithson, 2012) refers environmental uncertainties to the lack of predicting the likelihood of future events, others, e.g. Milliken (1987), point to the lack of information about cause-effect relationships (Milliken, 1987). Behaviors are perceived to be random in nature and diverge from rational choice theory more radically (Moscati & Tubaro 2011). As a result, the rational choice theory may not conform to the random behaviors of people in general when presented with uncertain choices. For instance,

Ellsberg's famous paradox demonstrates that decision makers and investors faced with uncertainty may not make choices consistent with the SEU but with ambiguity aversion to choices whose likelihood they have confidence in. In the entrepreneurship literature, the view is quite different. The conventional framing of rationality applies perhaps to opportunity discovery, since opportunity discovery calls for rationality that informs the search process – discovery, evaluation, and exploitation – that presents an expected outcome on the opportunity (Kirzner 1997). Miller's (2007) studies show that on the contrary, such rationality may be counterintuitive to opportunity recognition and discovery. This is because entrepreneurs engage in the distinct entrepreneurial process and the concept of rationality, if any fails to be characterized with the creative process of the entrepreneur. Recounting further from Knight's experience on rationality, which of course is different from the rational choice theorist view, a rational response to uncertainty may be to reduce it to risk if it is not possible to avoid. In this framework, rather than one focusing only on market profit, an effectuation logic must be applied, along this line, by making decisions based on affordable loss or acceptable risk (Sarasvathy, 2001).

Effectuation literature has been constructed to explain how entrepreneurs deal with uncertain environments (Welter & Kim, 2018) and how entrepreneurs handle uncertainties by taking advantage of various predictive and controlling strategies. In her theory, Sarasvathy (2001) shows that under conditions of uncertainty, entrepreneurs adopt a decision logic that is different from the one explicated by a traditional entrepreneurship model and rational choice theory. The entrepreneur exerts control over the available set of means which s/he has control over, such as personal knowledge, skills, social networks, etc., instead of focusing on goals (Gilbert-Saad, Siedlok & McNaughton 2018; Rezaei et al., 2020). As noted in Perry, Chandler and Markova (2012), the flexibilities of the effectuation logic allow individuals to take advantage of environmental contingencies as they arise and to learn as the firm grows. This said, as emphasized in Nielsen and Lassen (2012), the effectual logic is likely to be more effective in settings characterized by greater levels of uncertainty, particularly in the context of new businesses. Sarasvathy (2008) shows that effectual logic is predominantly used in the earlier stages of venture creation with a transition to more causal strategies as the new firm and market emerge out of uncertainty into a more predictable situation.

In summary, considering the complexity of the entrepreneurial process, although the construct of identity has predominantly been theorized based on the assumptions of neoclassical economics of rational choice, which assume causal effects when individuals pursue entrepreneurial opportunities, recent

argument differs. As with the satisfying theory of Simon and the effectuation theory of Sarasvathy, entrepreneurs employ effectuation logic (which includes the necessary heuristic activities), including cognitive biases when pursuing entrepreneurial opportunities in uncertain situations.

### **Bounded rationality: Heuristics and biases**

Because there are naturally no such unlimited human resources such as unlimited cognitive capabilities, unlimited information and unlimited time, 'heuristics and biases' instead make up a residual category for deviations from rationality as defined by the expected utility theory. According to Simon, an individual's cognitive abilities are limited, and so decision making becomes a search process that would lead to satisfactory result guided by aspirations (Simon, 1957; Gigerenzer & Selten, 2002). Therefore, by arriving at such satisfying decisions, people are not seen as irrational but rationally bounded by the conditions in which they find themselves. Entrepreneurs particularly do not follow normative theories, as their preferences are highly inconsistent even in a situation involving no risk or uncertainty. In making decisions bounded by constraints, entrepreneurs use heuristics and biases based on their adaptation to experiences, skills, psychological plausibility, and the structure of the environment. Known as an adaptive toolbox, such tools consist of cognitive abilities – set of rules (search, stop, decide) and specific domain heuristics used in achieving proximal goals.

Heuristics and biases study how decision-makers, in this case, entrepreneurs, employ subjective opinions and cognitive mechanisms used in decision making, especially in a complex and uncertain environment. For instance, heuristics types such as availability, representativeness and base-rate fallacy, and illusion control (Kahneman & Frederick 2002) are commonly used in literature and largely employed by entrepreneurs in decision making. Besides, people who are more prone to use heuristics and biases during the decision-making process because of the complexity of the decision environment are more likely to become entrepreneurs (Busenitz & Barney, 1997). The heuristics and biases decision framework takes the SEU model of rationality as the counterfactual for comparison purposes, and stretches on the descriptive alternative—but not a normative alternative to decisions under uncertainty (Miller, 2007). While they are very useful to opportunity decisions, they are much dependent on the entrepreneur in question. Entrepreneurs with greater cognitive skills are more probable to construct cogent heuristics towards opportunity decisions than those with lower cognitive skills. In the sections that follow, we demonstrate how some personal behaviors and cognitive skills shape these heuristics and motivate

or otherwise prevent the entrepreneur from making opportunity decisions in a complex environment.

### **Role of information in uncertain decisions**

Shane & Venkataraman (2000) assert that the information necessary to recognize opportunity is not evenly distributed because of its specialization in society. In their celebrated paper, they termed this as 'information corridors' in which human beings possess a different stock of information that influences their ability to recognize a certain kind of opportunity. The decision environment is thus affected by the availability of information, which explains how certain people are able to recognize opportunities that others cannot identify. Available information creates mental schemas, which provide a framework for recognizing new information that triggers an entrepreneurship conjecture (Shane & Venkataraman, 2000; Koellinger et al., 2007). Entrepreneurs' tolerance for ambiguity, risk-taking propensity, confidence level, and confirmation bias are all contingent on the weight of evidence informed by the information at hand. Information asymmetry is important to the success of young entrepreneurs. Recent research on entrepreneurship has suggested that many entrepreneurs would change certain earlier decisions if they had had additional relevant information prior to their decision. For instance, for failed new venture owners who took risky action based on very limited information, overconfidence and illusion control (Jafari-Sadeghi et al., 2020; Zacharakis & Shepherd, 2001; Koellinger, Minniti, & Schade, 2007), additional and relevant information might have saved their short-span failed ventures (Simon, Houghton, & Aquino, 2000).

Because uncertainty is characterized by unknown or limited information, the entrepreneur is unable to anticipate any changes in the environment from which opportunities are generated (McKelvie et al., 2011; Milliken, 1987). However, since uncertainty is the main construct under which innovation, profit, market equilibrium and allocation of resources are made, information discovery and processing become an important concept in the creation of opportunities (Amit et al. 1993; Kirzner 1979; Knight 1921). As noted by Kirzner (1979), information asymmetry is the revolving factor to market disequilibrium and opportunity recognition. In this sense, information asymmetry forms the synthetic barrier between rational theorist decisions, which assume full access to information, and entrepreneurial decisions. While the former is constructive and formalized on probabilities deduced from the given information, the latter is heuristically indeterminate.

## RESEARCH METHODS

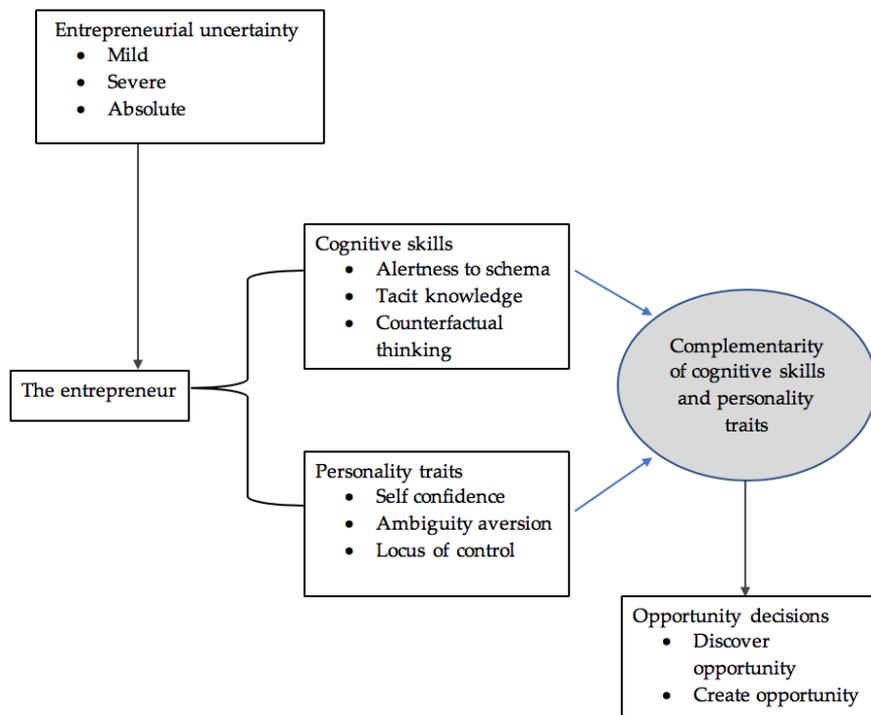
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Our primary purpose is to identify some personality traits, also referred to as behavioral and cognitive skills, which entrepreneurs use in their opportunity decisions under uncertainty, and further examine the complementary role that these two pillars in the entrepreneurship research have on each other. We adapted the framework used by Garrett and Holland (2015), who developed propositions from the conceptual narratives of how environmental uncertainty and complexity differentially affect the motivations and cognition of independent entrepreneurs and corporate entrepreneurs to engage in entrepreneurial action. Taking advantage of the existing research findings and a state-of-the-art literature review, we construct a theoretical framework via propositions to explain how the creation or discovery of opportunity under uncertainty is affected by traits and skills and why recognizing the complementing role of the two is crucial for the entrepreneur's decisions.

To provide a complete overview of the entrepreneurial decisions under uncertainty, we began with the basic concepts of uncertainty in entrepreneurial decisions and its antecedents from the literature, encompassing psycho-economic theories. Decisions under uncertainty that follow the normative and prescriptive reasoning of the rational theorist and behavioral economist yield optimal decisions and satisfying decisions. However, they are rarely what entrepreneurs rely on to make decisions on the opportunity. In this regard, the goal of the literature review was to explain how those psycho-economic theories differ from the former's approach. Moreover, since the main goal of this paper, in analyzing the entrepreneurial opportunity decisions under uncertainty, is to identify the complementing role of personality traits and cognitive skills distinctively discussed across the literature, a conceptual model, which divides into personality traits and cognitive processes, is adopted as the framework from which propositions are developed.

Across the literature, a different number of elements under these two strands are discussed (e.g., McMullen and Shepherd, 2006; Short et al., 2010; Shane & Venkataraman, 2000; Hansen et al., 2016). For instance, typical elements in the cognitive processes category include overconfidence and representativeness (Busenitz & Barney, 1997; Kahneman & Frederick, 2002), counterfactual thinking, affect infusion, alertness schema and pattern recognition (Baron, 2004; Gaglio & Katz, 2001), and effectuation process (Sarasvathy, 2001), which are all suggested as simple strategies used to reach acceptable decisions. On the other hand, elements in the personality traits category involve a person–opportunity nexus (Shane & Venkataraman, 2000) and they include self-confidence, hope, and emotions (Brundin & Gustafsson, 2013), self-efficacy and innovativeness, the need for achievement

(Kerr et al., 2018) and ambiguity seeking (Eichberger et al., 2012; Sukumar et al., 2020) among others. Although there are dozens of these traits and skills of the entrepreneur discussed in the literature, this paper focused on the main cognitive skills and personality traits that are most essential for decisions on opportunity discovery and creation. Figure 1 illustrates the conceptual model used. The model samples three main elements of personality traits: self-confidence, ambiguity aversion, and locus control; and cognitive skills: alertness to schema, tacit knowledge, and counterfactual thinking. It is important to focus on just these few because this study is to determine how these traits and skills complement each other in an uncertain environment. The research papers selected for this study, therefore, focused on the main theme. Papers, which drew attention to entrepreneurial decisions and the broader decision theory – past and old, were used to solicit for the vital view that could be used to build an argument. Because many of our strong arguments needed papers that were published in peer-reviewed journals, we did not include papers that were not peer-reviewed even though some were useful.



**Figure 1.** Conceptual model

## PROPOSITIONS

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### **Personality traits and cognitive skills in entrepreneur decisions under uncertainty**

Until recently, prior studies have presented entrepreneurial personality as the key component of new venture formation and the reason for diverse decisions on opportunities (Shane & Venkataraman, 2000; Mitchell et al., 2002; Sadeghi & Biancone, 2017a). As the unique set of personality traits and differences in psychological and demographic characteristics became difficult to comprehend, studies on decision making shifted focus towards the epistemological difference, informational access, and environmental complexities of the entrepreneur. Most of these studies have particularly focused on the cognitive skills of the entrepreneur (Baron, 2004; Busenitz & Barney, 1997; Gaglio & Katz, 2001; Simon et al., 2000). Notwithstanding, who an entrepreneur is, what defines and drives them, and how they manage what they do requires an unblemished analysis of the past and recent views of the entrepreneurial opportunity decisions. In this paper, we mostly focus our discussion on personality traits and cognitive skills that present the entrepreneur with simple mental models towards decision making under uncertainty. In this paper, we argue that the broad discussion should be focused on the complementing role of traits and skills towards the decisions on an opportunity of the entrepreneur rather than a one-sided argument or a distinct view of the two.

### **Personality traits towards opportunity decisions under uncertainty**

#### *Self-confidence*

In his article titled “Characteristics of successful entrepreneurs,” McClelland (1987) employs a critical realist perspective to understand the personality traits of successful entrepreneurs. His observation demonstrates that self-confidence is among the competencies and principal characteristics of successful entrepreneurs. This provided a helpful understanding of the way personality traits such as one’s self-confidence contribute to entrepreneurial decision making under uncertainty. The support for this positive relationship is strong both theoretically and empirically. For instance, Schumpeter (1961) postulates that such motivation drives the will and actions of entrepreneurs to eventually overtake incumbent market leaders (in the sense of creative destruction). This notwithstanding, Bandura’s (1997) theory of self-efficacy, which is rooted in social, behavioral theory, validates a positive association

between self-confidence and entrepreneurial outcome through the thoughts and behavior of the entrepreneur. In a related theory, though not in the entrepreneurial field, Vealey (2001) found a positive relationship between self-confidence and sports performance. Although the majority of prior studies found support for this line of argument, there exist some notable exceptions, such as Zacharakis and Shepherd (2001), and Koellinger et al. (2007), who found a negative association between self-confidence and performance. One possible explanation for such findings is that high confidence can lead to risk-taking and/or complacency, which in turn may impede an entrepreneurial decision under uncertainty. However, McMullen and Shepherd (2006) emphasize that if the entrepreneur is pushed by his self-confidence to overcome his doubt beyond a potential cost envisaged, then the entrepreneur's actions will be actualized. Thus, we propose that:

**Proposition 1:** *A higher self-confidence or self-efficacy of the entrepreneur will drive the willingness to bear uncertainty and make uncertain decisions on opportunities.*

Regarding this proposition 1, there is the need to draw a thin line between known self-confidence and over-confidence as a prudent measure to avoid inaccurate decisions. Although entrepreneurial confidence is desirable, overconfidence, on the other hand, creates a bias that affects the accuracy of decisions (Busenitz & Barney, 1997; Koellinger et al., 2007; Zacharakis & Shepherd, 2001). Usually, for novice entrepreneurs and new venture founders, overconfidence is pervasive; inaccurate market predictions and perception failures are highly probable. They either show optimistic overconfidence or an overestimation of their own knowledge (Busenitz & Barney, 1997; Zacharakis & Shepherd, 2001) and apparently reduce the need for thorough information required for decisions under uncertainty. Overconfidence is associated with lower metacognitive ability and positive illusions that undermine the detailed process in decision making, resulting in inaccuracies and poor result.

### *Ambiguity aversion*

Entrepreneurs are predisposed to uncertainty in which they have to make judgments about a future they do not have control of. Relative to self-confidence and entrepreneur's choices to success, prior studies emphasize that entrepreneurs often are faced with an ambiguous future that limits them from exploiting foreseeable opportunities under probabilistic judgments (Eichberger et al., 2012). In this way, ambiguity aversion, rather than risk aversion, becomes the main inhibitor of entrepreneur opportunity creation (Knight, 1921; Amit et

al., 1993). Generally, ambiguity aversion can be an inherent character of the individual, which may be invariant with the information required for decision making. For instance, an entrepreneur's willingness to start a business may entail ambiguity judgments in which information about the future is often incomplete. If the entrepreneur were to wait for such additional information to increase the success of the foreseeable opportunity, the opportunity would have passed (Simon & Houghton, 2003; Ng, 2013).

**Proposition 2:** *A high ambiguity aversion towards opportunity in a complex environment will deter entrepreneurial decision on the opportunity.*

A degree of belief informs the entrepreneur's perception and psychological aspect of judgment. Subjective judgment formed as a response to an ambiguous future, following inadequate information or environment, can worsen the entrepreneur's tolerance towards ambiguity. In such an instance, an unwillingness to act and make decisions in the face of uncertainty can discourage entrepreneurs from certain opportunity discovery and creation (Bhidé, 2000).

Sarasvathy (2001) contends that entrepreneurs often have to undertake economic decisions in which the success of the future of their businesses are dependent on leveraging the firm's internal resources with the resources of external stakeholders (Harvey, Ng, & Klein, 2015). Notwithstanding, such complexities in the presence of limited resources increase the difficulties of assigning causes of success and failure, and since the establishment of cause and effect can present difficult situations to the entrepreneur, finding an associated source of performance may be highly ambiguous, in which impreciseness may be eminent in the entrepreneur's decisions (Ng, 2015). An ambiguity seeking entrepreneur may see ambiguity as an opportunity rather than a threat and such a view of uncertainty, according to Begley and Boyd (1987), may indicate a positive relationship with the financial performance of the venture. For instance, experienced entrepreneurs may draw on existing knowledge to evaluate the ambiguity surrounding the future prospects of their businesses (Sadeghi & Biancone, 2017b). This is because experienced entrepreneurs exhibit greater knowledge of the causes underlying their subjective probabilities and they may place greater emphasis on their subjective view of the opportunity, not only because of its probabilistic success but because they have their previous experiences bound to the subjective views (Jafari Sadeghi, Kimiagari, & Biancone, 2020). Thus, experienced entrepreneurs tend to act on their own personal judgments rather than consulting on objective probability judgment, which they may perceive as unreliable (Dew, Read, Sarasvathy, & Wiltbank, 2009). The

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implication of this complexity demonstrates that when making judgments to exploit opportunities, causal ambiguities may play a significant role in undermining the belief held in one's probabilistic judgments.

### *Locus of control*

Locus of control is a very important personality trait in shaping how an individual perceives the environment. It relates to the generalized belief that the outcome of an action is contingent on one's own behavior or the outcome is a function of external forces or environmental features that cannot be influenced (Rotter, 1990; Kerr et al., 2018). Both internal and external locus of control exists to characterize people on entrepreneurial opportunity decisions under uncertainty. People with an internal locus of control believe that event in their lives, both achieving success or avoiding failure on new ventures, are due to their own decisions, efforts, or action. They, therefore, show capabilities, willingness to learn, and pursue courses that will enhance their knowledge to influence the outcome of their environment (Asante & Affum-Osei, 2019; Garousi Mokhtarzadeh et al., 2020). In contrast, people with an external locus of control find the success of a new venture to be the result of uncontrollable forces (Yan, 2018; Kerr et al., 2018). They perceive an event in life as the outcome of luck or chance and, hence, their ability to discover opportunities may be impeded by their belief in luck rather than effort (Asante & Affum-Osei, 2019). An in-depth examination of the entrepreneurship literature has identified the locus of control, internally, as one of the most dominant entrepreneurial characteristics and one that is a predictor of entrepreneurial intentions. People with a high level of perceived internal locus of control have been associated with entrepreneurial behavior and a preference for innovative strategies amidst complex environment, while people with an external or low internal locus of control are perceived as having a conservative behavior in relation to the creation of new business ventures (Wijbenga & van Witteloostuijn, 2007).

Studies have shown that the founders of new businesses have a more internal locus of control than owners who were not involved in a start-up (Begley & Boyd, 1987; Yan, 2018). In their meta-analysis, (Rauch & Frese, 2007) concluded that an internal locus of control has a significant correlation with opportunity creation and the successful exploitation of the opportunity. An earlier study by Gürol and Atsan (2006) among university students, also found that students who are entrepreneurially inclined have an internal locus of control and a higher need for achievement and innovativeness than students who are not entrepreneurially inclined. Across the literature, an internal locus of control is thus observed to have motivational inclinations that make

entrepreneurs more proactive and alert to entrepreneurial opportunities. In contrast, a low internal locus control tends to be more passive. The support for this claim is given in Wijbenga and van Witteloostuijn (2007), where it is hypothesized that an external locus of control in the dynamic environment has a low degree of adaptiveness or responsiveness to environmental contingencies. It follows then that this belief makes them prefer low-cost strategies to business innovations. In simple terms, they fail to believe that they may be able to control business outcomes and actively change their environment (Rauch & Frese, 2007; Asante & Affum-Osei, 2019), which implies their failure to recognize opportunity even when it is obvious. The ability to induce a decision on a new venture and take full control and responsibility for the business's outcome, however, requires an entrepreneur who has a higher internal locus of control and a more positive attitude for opportunity creating. Thus, we summarize with the proposition that:

**Proposition 3:** *A higher internal locus of control will have a strong impact on the entrepreneur's perceptions on (new) opportunity discovery or creation.*

### **Cognitive skills towards uncertain decisions**

#### *Alertness to schema*

A schema is a cognitive structure of an evolving mental model that guides the individual in the reasoning and processing of information for a specific task (Gaglio & Katz, 2001). They could be mental mode constructs on market price differentials for which sensitivity and alertness could generate a pure arbitrage opportunity. Such schemas can be role defined or event defined, and they demonstrate high performance and opportunity recognition by entrepreneurs who adopt them compared to those who do not (Baron, 2004; Garrett & Holland, 2015). Entrepreneurial alertness, in line with schema, refers to an attitude of receptiveness to overlooked opportunities (Kirzner, 2009). In this regard, complex schema structures interlinking each other provide the entrepreneur with a projected view of environmental changes and quick corrections to any deviation from known patterns. On this, we could postulate that sensitivity to the schema will lead to a higher propensity to opportunity discovery.

**Proposition 4:** *Entrepreneurs who are sensitive to key characteristics of their schema will have a higher propensity to opportunity discovery and quicker ways to decisions under uncertainty than those who are not.*

Alert entrepreneurs prompted by schema can reassess and react to changes in the environment so easily, especially when seemingly unrelated changes in the external environment do not correspond to the current schema. Sensitivity and habitual activation of the schema can lead to the chronic schema (Gaglio & Katz, 2001), a situation which automates individuals to notice, without searching, opportunities, and market disequilibria. McMullen and Shepherd (2006) contend that cognitive and subjective differences between individuals allow some to have a more accurate projected view of changes in reality than others, and as a result, only such personalities can take appropriate entrepreneurial actions to correct deviations from known patterns within that reality. According to Valliere (2013), such entrepreneurial alertness can be said to arise from epistemological differences, where only some individuals know what to do. In this sense, the entrepreneur can make reasonable predictions of the future to plan new business moves to his advantage. For instance, successful product innovations are based on an entrepreneur's ability to recognize and develop new or unique resource combinations. Since alertness favors an intuitive decision process, an entrepreneur's mental schema enables him to develop a detailed understanding of the unique ways in which the business's resources can be combined to achieve a greater outcome (Ng, 2015). It is roughly the case that entrepreneurs who are more likely to recognize patterns among a system of relationships and schemas are usually those who discover opportunities. This is also mostly the phenomenon seen with experienced entrepreneurs, since their experiences and developed schema offer a more nuanced understanding of their decision settings, than in the case of novice entrepreneurs (Baron & Ensley, 2006).

### *Tacit knowledge*

One of the greatest assets of the entrepreneur is his tacit knowledge formed through past experiences and the logical understanding of related patterns of events in the past. Tacit knowledge identifies the entrepreneur with a set of epistemic tools under which coherent decisions can be made. Though the concept of tacit knowledge is difficult to visualize or parametrize given its subjective, personal and idiosyncratic nature, it is known to demystify future circumstances and induce information search regarding the decision to create or recognize the opportunity. When the decision environment is varied with different degree of uncertainties and a lack of information, tacit knowledge provides an intuitive judgment on what actions must be taken (Ancori, Bureth, & Cohendet, 2000). From the cognitive point of view, the entrepreneur's knowledge forms the basis for most of the biases made in uncertain decisions. Tacit awareness connects to the uncertain

external environment and induces a construct for schemata, alertness, and meaningful patterns for the recognition of opportunities (McMullen & Shepherd, 2006; Kirzner, 2009). Johnson and Bock (2017) demonstrate that the formation of tacit knowledge over time results from accumulated prior knowledge, which becomes valuable to the entrepreneur in making sense of the uncertainty in the environment. Prior studies, including Khatri and Ng (2000), and Baron and Ensley (2006), also conclude that entrepreneurs who employ tacit knowledge are “mentally richer” in identifying and further deciding on opportunities, whereas novice entrepreneurs may be denied those opportunities under uncertainty. To this end, the following proposition is clear to the concept of tacit knowledge:

**Proposition 5:** Entrepreneurs who possess tacit knowledge that codifies into information will be ‘richer’ in recognizing an opportunity and deciding on opportunity creation.

### *Counterfactual thinking*

Counterfactual thinking is a cognitive skill that opportunity-seeking entrepreneurs engage in when confronted with a surprising or uncertain environment. It involves useful heuristics for developing educated guesses on the contrary to existing facts (Gaglio, 2004) and comparison of actual events to “alternatives that are constructed ad hoc rather than retrieved from past experience” (Kahneman & Miller, 1986, Arora et al., 2013). The imagination of ‘what might have been,’ reflecting on alternative outcomes if the individual in question has taken different actions, can produce a mixed pattern of both potentially beneficial and harmful effects (Roese, 1997; Baron, 2000). Individuals engaging in counterfactual thinking usually focus on imagined outcomes that are better than those they achieved, which produces a feeling of regret. While this may be the case, as discussed in the cognition theory elsewhere (Landman et al., 1995; Roese, 1997), the reverse implication is pervasive in the entrepreneurial literature due to its importance with respect to the process of causal inference—efforts (Baron, 2000; Gaglio, 2004)).

A positive emotional experience (Landman et al., 1995), resulting from the relevant counterfactual thinking, could result in new venture creation and strike a difference between entrepreneurs and non-entrepreneurs (Baron, 2000). Thus, we hypothesize that the relevant counterfactual thinking will lead to opportunity discovery.

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**Proposition 6:** *The relevant counterfactual thinking engaged in by the entrepreneur will have a causal consequence on opportunity creation than those who do not.*

While we propose that counterfactual thinking will lead to the creation of new entrepreneurial opportunities through a positive emotional experience, we are most interested in how opportunity finders use counterfactual thinking. To examine this, we turn to use the argument established by Gaglio (2004) and Baron (2004). Baron (2004), in particular, argues that entrepreneurs are less likely than others in counterfactual thinking, since they may want to reflect on the future-oriented perspective than engage in past guilt. This notwithstanding, using a sequence of propositions, Gaglio (2004) proposed that the mental simulation and counterfactual thinking of the entrepreneur are a mechanism through which entrepreneurs identify and develop innovative opportunities. Because counterfactual thinking is involved in the evaluation of the pursuit of goals, entrepreneurs are able to use it to construct models that correspond to conjecture and into the identification and discovery of opportunities. In a recent study, Karim (2017) found counterfactual thinking influences opportunity identification in entrepreneurial career intention. As further propounded by Gaglio (2004), opportunity finders generate forward counterfactuals based on maintaining the unusual or unexpected event's, whereas non-finders do not. It follows closely from Kirzner's view, that alert individuals are those who use counterfactuals they construct in order, albeit with other mental mode constructs, to discover opportunities in unknown circumstances.

### **Recognizing the complementarity of personality traits and cognitive skills**

Persisting research questions in entrepreneurship encompass how decisions on opportunities are made under a complex and changing environment. Specifically, why do some people but not others decide to discover and profitably exploit opportunities? Why do some people and not others succeed in new venture formation and why are some entrepreneurs more successful than others (Baron, 2004; Mitchell et al., 2002; Shane & Venkataraman, 2000)? These questions underscore the differences among individuals in terms of their personality, biological make-up, and cognitive abilities. The general research on the collective understanding of the thinking process of the entrepreneur has gone beyond the single-insight individual paradigm to embrace access to information and cognitive abilities as the probable factors to discovering opportunities and partially answering the above-raised questions (Mitchell et al., 2002; Shane & Venkataraman, 2000).

Earlier on we made propositions that reiterate the role personal and cognitive skills play in the uncertain decisions on entrepreneurial opportunities. The importance of cognitive abilities emphasizes the significance of cognition as the divisive component to answering the 'why' and 'how' questions in the entrepreneurship decision process (Baron, 2004). It includes all the processes that are cognitive in nature, such as recognizing, problem-solving, or creative thinking, all of which take place within a person. The personal nature of the entrepreneur and his environment also represent an important understanding of 'why' certain decisions are made. These two complement each other in answering the 'how' and 'why' questions on opportunities under uncertainty. The significance of these bi-directional, complementing effects on entrepreneurial decisions under uncertainty are manifested through the following propositions: (1) personality traits are enhanced by cognitive abilities and, (2) cognition towards decisions is affected by personality traits. We argue these propositions below:

**Proposition 7:** *Personality traits are enhanced by cognitive abilities.*

In theorizing from the given propositions, it is easy to recognize that entrepreneurs who have developed their cognitive abilities are adequately prepared mentally in their personal pursuit of profit to make decisions in an uncertain environment. Additionally, their perception and opinions are more influenced towards a positive desire to explore an opportunity when cognition is utilized in the decision process. For instance, entrepreneurs rich in tacit knowledge are enhanced with a higher confidence to approach opportunities, whereas poor thinking and problem-solving skills contribute to negative outcomes. Previous scholars attribute a lower perception of risk and a personal decision to start new ventures to cognitive abilities and biases (Busenitz & Barney, 1997; Simon et al., 2000; Biancone & Jafari Sadeghi, 2016). At the broadest level, these cognitive abilities induce a sense of capabilities – a personal enhancement to pursue opportunities. Cognition plays a central role in self-efficacy, self-confidence, and self-motivation. For example, tacit knowledge and entrepreneur alertness can induce an appreciable level of self-confidence needed to embrace decisions under uncertainty. There have been studies showing a positive correlation between cognitive abilities and personality traits, notably the five-factor model (Tuten et al., 2001; Rammstedt et al., 2016), and between personality and entrepreneurial outcomes (McClelland, 1987; Murnieks et al., 2015), which enhances the argument of the role cognition plays in the development of some notable personality traits of the individual.

**Proposition 8:** *Cognition towards decisions is affected by personality traits.*

Across the breadth of literature on psychology and organizational behavior, personality has been demonstrated to have an influence on several factors germane to prudent decisions (Baron, 2008; Rammstedt et al., 2016). The existence of the ability to construct schema and be alerted to it, combine tasks, and evaluate decisions on opportunities can be understood to be the consequence of a moral firm and knowledgeable entrepreneur. The study of Rammstedt et al. (2016) established education as the correlation between cognitive abilities and one's openness as well as emotional stability. It is therefore agreed that personality traits are instrumental in the development of intellectual skills (Ackerman, 1996) and mental structures. The extent to which one develops alertness to the schema, for instance, depends on belief and perception of the world. Entrepreneurs who are highly ambiguity intolerant tend to relent on the effort to construct a schema for uncertain decisions. Such a negative view of uncertainty prevents broader cognition and heuristics to creativity and opportunity search. Furthermore, recent findings suggest that emotions, motivation, affect, self-confidence and fear can potentially override and "tip the balance towards specific decisions" when the environment is uncertain (Baron, 2008; Brundin & Gustafsson, 2013; Dimov, 2007; Jafari-Sadeghi, 2020). Therefore, while the personality paradigm, in theory, maybe under-studied in recent works it is essential to cognition, the general entrepreneur behavior and decisions in an uncertain environment.

## DISCUSSION AND CONCLUSION

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The central task of entrepreneurship is the willingness to act on economic decisions using information with or without certainty. In real-world entrepreneurial decisions, entrepreneurs with balanced personality traits and cognitive skills have been found to invariably exhibit success in their own ventures (McMullen & Shepherd, 2006; Garrett & Holland, 2015; Hansen et al., 2016). Yet, few entrepreneurial studies have advanced the literature on the dual complementing role of personality traits (Nawaz, Abbas Bhatti, Ahmad, & Ahmed, 2018) and cognitive skills, examining them from the perspective of entrepreneurial behavior, identity, and context. The larger framework for decisions under uncertainty rests on the combination of personal behavior, sunk outcomes in committed ventures, the entrepreneur's cognitive skills, and the complexity of the environment. Besides, the contextual and social influences at a given time affect the decisions and the shaping of ideas of the entrepreneur (Dimov, 2007). This characterization of entrepreneurial

personality traits and cognitive skills adds to the research on decision-making. In this study, we sought to achieve this by connecting personal traits with cognitive skills in their complementarity using some propositions to buttress our argument. In this regard, eight propositions are proposed in a framework that explores the integration between entrepreneurs' cognitive skills and personality traits in their discovery of business opportunities under uncertainty. This has some implications in both theory and practice.

Theoretically, our perspective contributes to a holistic view of opportunity decisions. It redirects the traditional analysis path of entrepreneurial decisions discussed distinctively from the personal behavior or cognition paradigm, which does not provide a complete view of the larger entrepreneurial decisions under uncertainty. We believe this a great step towards a finer-grained typology of views, research, and teaching of opportunity discovery or creation in an uncertain environment. Additionally, we expect that analysis considering the complementary role of personal behavior or cognitive skills will further help to demystify the question of why and how some people but not others decide to discover and profitably exploit opportunities (Baron, 2004; Mitchell et al., 2002). Practically, our argument provides further insight into the black box of entrepreneurial opportunity decisions under uncertainty and thus highlights the need for a broader perspective for the entrepreneur, especially in the early stage of venture formation, where some cognitions and required personal attributes are needed in consonance for entrepreneurial action. This framework has implications for the characteristics of individuals planning to start a new business under the uncertainty. For instance, individuals with higher self-efficacy (personality traits) are seen as more willing to exploit business opportunities under uncertainty, as accurate decisions require a striking balance of how they are able to use some heuristics to further their cognition. We argue that, while objectively some gifted entrepreneurs may possess natural decision techniques, the ability to create certain opportunities under uncertainty relies largely on their trained cognitions and personal behavior.

We conclude by emphasizing that entrepreneurial opportunities are always marked by the understanding of personality traits and cognitive skills. Therefore, while there is a plentiful body of entrepreneurial literature on entrepreneurial behavior and cognitive skills, the discussion on the interplay between opportunity decisions must be recognized. We also propose that the framework of entrepreneurial decisions should be expanded to incorporate other symbolisms or identities that have a significant influence on the judgment of individual entrepreneurs, in order to increase our understanding. Future studies can examine the contribution of complexity and its associated biases in different types of entrepreneurial setting. Due to the presence of asymmetries

in both aspects of the paternal and intergenerational family business, the inclusion of a dimension on complexity may increase our understanding of the biases that may influence the personality traits and cognitive skills of the entrepreneur in decision-making. Finally, while the arguments presented are intuitive, more empirical research on these propositions would enrich the entrepreneurship literature on decision making.

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### Abstrakt

**Cel:** Celem tego artykułu jest rozwój literatury przedsiębiorczości poprzez pogłębienie zrozumienia powiązań między zachowaniem a umiejętnościami poznawczymi w procesie podejmowania decyzji w warunkach niepewności. **Metodyka:** Metoda tego badania została dostosowana do ram stosowanych przez Garrett i Holland (2015), którzy na podstawie narracji koncepcyjnych opracowali propozycje dotyczące tego, jak niepewność środowiskowa i złożoność w różny sposób wpływają na motywację i świadomość niezależnych przedsiębiorców i przedsiębiorców korporacyjnych, aby angażować się w przedsiębiorczość. **Wyniki:** Wyniki tych badań zapewniają koncepcyjne podstawy dla szerszej perspektywy zachowań i procesów poznawczych, które motywują lub utrudniają działania przedsiębiorcy, a jednocześnie umieszczają decyzję przedsiębiorcy w centrum teorii decyzji. **Implikacje dla teorii i praktyki:** Teoretycznie te badania przyczyniają się do całościowego spojrzenia na decyzje dotyczące szans. Przekierowują tradycyjną ścieżkę analiz decyzji przedsiębiorczych omawianych w sposób odmienny od paradygmatu zachowania lub poznania osobistego, co nie zapewnia pełnego wglądu w szersze decyzje przedsiębiorców w warunkach niepewności. W praktyce nasza argumentacja zapewnia dalszy wgląd w czarną skrzynkę decyzji dotyczących możliwości przedsiębiorczych w warunkach niepewności, a tym samym podkreśla potrzebę szerszej perspektywy dla przedsiębiorcy, szczególnie na wczesnym etapie tworzenia przedsięwzięcia, gdzie potrzebne są pewne cechy poznawcze i wymagane cechy osobowe w harmonii przedsiębiorczości. **Oryginalność i wartość:** Badania przedsiębiorczości dotyczące podejmowania decyzji w warunkach niepewności koncentrowały się głównie na wpływie niepewności na działania przedsiębiorcze, podczas gdy próba na poziomie indywidualnym, w szczególności ram poznawczych, ma na celu wyjaśnienie, dlaczego działania się różnią. Podjęto również wysiłki naukowe dotyczące tego, co wpływa na działania przedsiębiorców z perspektywy osobistych atrybutów przedsiębiorcy. Jednak w literaturze nie proponuje się zintegrowanego podejścia do badania, w jaki sposób umiejętności poznawcze i cechy osobowości wzajemnie się uzupełniają.

**Słowa kluczowe:** *przedsiębiorcza okazja, zdolności poznawcze, cechy osobowości, podejmowanie decyzji w warunkach niepewności, badania przedsiębiorczości*

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## Conflicts of interest

The authors declare no conflict of interest.

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# Absorptive capacity in startups: A systematic literature review

*Ximena Alejandra Flechas Chaparro*<sup>1</sup> , *Ricardo Kozesinski*<sup>2</sup>, and *Alceu Salles Camargo Júnior*<sup>3</sup> 

## Abstract

**Purpose:** Several scholars have pointed out that absorptive capacity (AC) is critical for the innovation process in large firms. However, many other authors consider startups as key drivers for innovation in the current global economy. Therefore, this article aims to identify how the concept of AC has been addressed in the new venture context.

**Methodology:** A systematic literature review analyzing 220 papers published between 2001 and 2018. **Findings:** The systematic literature review identifies three clusters of research addressing AC in startups: Knowledge, Innovation, and Performance, along with the central authors of the discussion, the main contributions, theoretical references, and their future research agenda guidelines. **Implications for theory and practice:** This study contributes to the innovation and entrepreneurship literature by connecting the importance of AC and new venture creation, and providing a better understanding of how entrepreneurs could enhance their innovative processes.

**Originality and value:** Based on the analysis of the literature review, a framework that differentiates knowledge acquisition strategies for new ventures was created. The framework categorizes the strategies according to the knowledge source (i.e., internal or external) and the degree of intentionality (i.e., formal or informal).

**Keywords:** innovation, absorptive capacity, startups, new ventures, entrepreneurship

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## INTRODUCTION

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Absorptive capacity (AC) is defined by Cohen and Levinthal (1990) as the ability to recognize, identify, assimilate and exploit new external information, and is considered to be critical for the innovation process. Zahra and George (2002, p. 186) defined AC as a “set of organizational routines and processes” including acquisition (to identify and obtain external knowledge), assimilation (to interpret and understand the information obtained), transformation (to integrate and combine existent knowledge with the newly acquired), and exploitation (the application of new knowledge for commercial ends). This ability involves renewing routines, practices, technological paths (March, 1991; McGrath, 2001), but in particular, it involves a learning process (Lane, Koka, & Pathak, 2006).

Previous works have addressed extensively how organizations might benefit from AC. For instance, Patterson and Ambrosini (2015) explored how AC could be configured to support research activities in biopharmaceutical firms, Engelen and colleagues (2014) identified how AC contributes to the strengthening of the entrepreneurial orientation and a firm’s performance relationship, and Lis and Sudolska (2015) studied what role AC plays in organizational growth and competitive advantage. The large number of theoretical and empirical publications addressing the AC construct over the past 30 years has also led to a number of literature reviews with different aims, such as revalidating and reconceptualizing the construct (e.g., Lane et al., 2006; Zahra & George, 2002), identifying major discrepancies among AC’s theoretical perspectives (e.g., Volberda, Foss, & Lyles, 2010), and analyzing the multifaceted dimensions of AC literature (e.g., Apriliyanti & Alon, 2017).

However, unlike these past reviews, in the present study, we propose to analyze AC in the context of new ventures, mainly due to two factors. First, because several authors have argued that startups are better suited to develop radical innovation (Bower & Christensen, 1995; Edison, Smørsgård, Wang, & Abrahamsson, 2018; Spencer & Kirchhoff, 2006). According to Giardino et al. (2014, p. 28), startups are entities “exploring new business opportunities, working to solve a problem where the solution is not well known and the market is highly volatile.” These organizations are characterized by a lack of resources, rapid evolution, small teams, little working experience, third-party dependency, and work under several uncertainties (Giardino et al., 2014). Despite the shortcomings associated with the scarcity of resources and experience (Ambos & Birkinshaw, 2010), these firms are able to launch innovative products and become a ‘game-changer’ in traditional industries, putting incumbent firms under pressure (Edison et al., 2018; Sirén, Hakala, Wincent, & Grichnik, 2017). Second, because, despite being game-changers,

startups operating in technology-intensive industries suffer the permanent threat of premature obsolescence since –and considering the high level of uncertainty– these companies often bet on ‘failed technologies’ (i.e., those technologies that result not to be the ones adopted by the market (Eggers, 2012) and to survive, they must revamp their knowledge to adjust their solutions for which the AC may be crucial. Therefore, we identified a necessity to analyze AC literature within the context of new ventures in order to better understand which topics have been studied in this regard, and try to identify which aspects can be extracted from the main findings to contribute to some extent to the improvement of entrepreneurs’ processes of knowledge renewal and innovation.

The aim of our research is to determine how the concept of AC has been addressed in the new venture context by identifying the clusters of research, the main authors, and findings. To this end, we proceeded to conduct a systematic literature review analyzing 220 papers published between 2001 and 2018. Three clusters of research regarding the importance of AC in the new venture context were identified: Knowledge, Innovation, and Performance. In addition, the central authors of the discussion were reviewed, including their main contributions, theoretical references, and future research agenda.

The text is structured as follows: section 2 reviews the concepts and discussions about dynamic capabilities and new ventures, followed by the methodology in section 3. Our results are presented in section 4, including the bibliometric and content analyses. In section 5, we discuss the findings, and the last section contains the conclusions and suggestions for future research.

## LITERATURE BACKGROUND

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Authors such as Zahra and George (2002) and Engelen et al. (2014) have recognized AC as a dynamic capability. Dynamic capabilities (DC) enable the firm to evolve and positively influence its competitive advantage (Zahra & George, 2002, p. 185). Given that the present study seeks to connect concepts from the strategic management (i.e., AC and DC) and entrepreneurship fields, it is important to discuss in which way this interaction could be addressed considering the still ongoing debate about these concerns (Arend, 2014). Teece, Pisano, and Shuen (1997, p. 516) defined DC as “the firm’s ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments.” DC is tied to the resource-based theory, in which firms’ differences, such as resources, skills or endowments, are key aspects that help companies to create a sustainable competitive advantage (Barney, 1991). However, DC complements the resource-based theory by

providing the abilities for controlling, configuring, and reconfiguring the resources for long-term survival.

According to Teece et al. (1997), resources and assets are arranged in integrated groups of individuals that perform the firms' activities or routines. In other words, through functions, routines, and competences, firms take advantage of their resources. However, differently from incumbent firms, new ventures lack functions and routines, so they need to rely broadly on team members' and entrepreneurs' idiosyncratic knowledge to operate (Bergh, Thorgren, & Wincent, 2011). In this regard, literature offers some examples of how DC has been addressed focused on individuals. For instance, Teece (2012) points out that there is a group of DC that is based on the individual "skills and knowledge of one or a few executives rather than on organizational routines" (Teece, 2012, p.1). According to the author, capabilities are built jointly by individual skills and collective learning originating from employees working together. In addition, the author notes that entrepreneurial management, besides being concerned about the improvement of existent routines, is more about creating new ones and figuring out new opportunities. Finally, Teece mentioned that the dependency on individual skills usually fades over time after five or ten years.

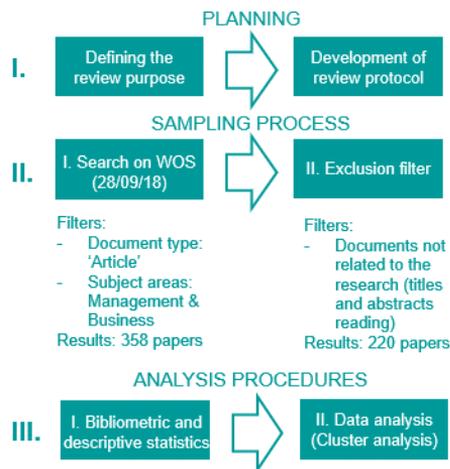
The individual approach in DC is associated with the concept of micro-foundations, which are one of the aspects that undergird the capabilities. According to Teece (2007, p. 1319), micro-foundations are the mechanisms through which sensing, seizing, and reconfiguring capacities operate; these include "the distinct skills, processes, procedures, organizational structures, decision rules, and disciplines." Certainly, all these mechanisms widely depend on individual cognition (Helfat & Peteraf, 2015) and individuals' extant knowledge (Teece, 2007). Helfat and Peteraf (2015) suggest that individual cognitive capabilities may mediate the relationship between changes in the organizational environment and strategic changes, and, therefore, individuals (by the effect of their own capacities) can reshape their organizations.

Several scholars have also discussed DC from the entrepreneurship perspective (for instance, Arend, 2014; Arthurs & Busenitz, 2006; Boccardelli & Magnusson, 2006; Newbert, 2005; Zahra, Sapienza, & Davidsson, 2006). These works offer different alternatives to connect both of the research strands (i.e., DC and entrepreneurship). For instance, Newbert (2005) proposes the new firm formation process as a dynamic capability, based on a random sample of 817 entrepreneurs; he concludes that there is evidence to support that new firm creation meets the DC conditions placed by Eisenhardt and Martin (2000) (i.e., identifiable, unique, deals with market dynamism, and is affected by learning). Arthurs and Busenitz (2006) set out that after the opportunity identification, when entrepreneurial leadership starts to transition to a more

formal type of management, new ventures need to develop new skills –as mentioned by Teece (2012)– through the usage of DC. Furthermore, Arend (2014) found out that most entrepreneurial ventures have been created based on DC from the beginning, and mainly on an individual level.

## RESEARCH METHODS

With the aim of determining how the concept of AC has been addressed in the startups' context, we conducted a systematic literature review (SLR). This methodology is a rigorous and well-defined approach that enables the identification of the current knowledge and what is known about a given topic (Boell & Cecez-Kecmanovic, 2015). Following Denyer and Neely (2004), we endeavored to develop an accurate process considering the planning, the use of explicit and reproducible selection criteria, and an analysis procedure. Figure 1 summarizes our systematic review process.



**Figure 1.** Summary of the systematic review process

### Planning the SLR

During the planning phase, we determined the purposes of the research and its most important aspects. Our main goal was to identify how past research employed AC in an entrepreneurship and startups context. We did not limit the research to any specific time frame and only peer-reviewed articles were included. We conducted a search in September 2018 on the Web of Science (WOS, Clarivate Analytics) database since it is one of the most complete peer-

review journal repositories on social sciences (Crossan & Apaydin, 2010). We defined two subject areas, “Management” and “Business,” and searched in all the indexes provided on WOS (SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, and ESCI). Given the wide diversity of terms and morphological variety to refer to a “recently created innovative company”, we applied the following Boolean search keywords: “((absorptive capacity) AND (“startup” OR “start-up” OR “start up” OR “new firm\*” OR “NTBF” OR “new venture” OR “entrepreneur\*))” in the Topic (title, keywords or abstract) category.

## Sampling process

The search returned 358 papers. An exclusion filter was applied to select only documents that address AC in the context of entrepreneurship, on the basis of a thorough reading of titles and abstracts. In order to minimize bias in this filter parameter, the documents were reviewed in two rounds by the researchers. The final search process yielded 220 documents published between 2001 and 2018.

## Data analysis

We performed bibliometric and statistical analyses to provide an overview of the literature, including the publications per year and the main journals. We also carried out a network analysis employing the VOSviewer 1.6.9 Software. The data was extracted directly from WOS, including all the information items (e.g., title, abstract, keywords, publication year, cited references, etc.). Then, we manually removed the non-related documents using Microsoft Excel. These data were exported to a text file (\*.txt) and imported to VOSviewer to create the co-occurrence and co-citation networks in order to identify the main theoretical references and central discussions. We used the default settings of the program, as presented in Table 1.

**Table 1.** Default settings of VOSviewer

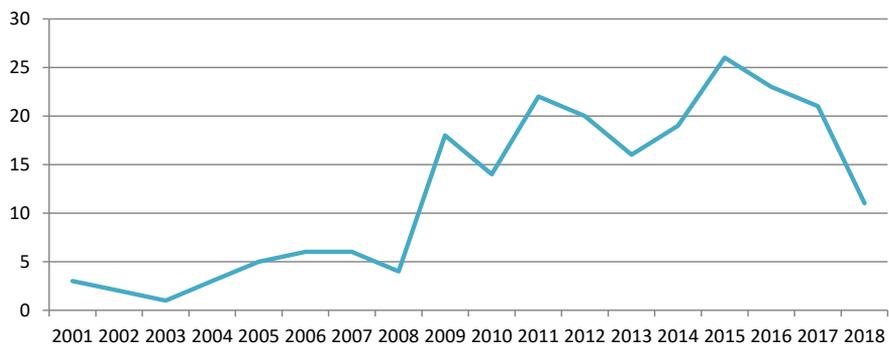
Parameter	Default settings
Counting method	Full counting
Method of normalization	Association strength
Layout of attraction repulsion	2
Layout of repulsion	0
Clustering resolution	1.00
Minimum size of clusters	1
Merging small clusters	Switched on

Based on the all keywords co-occurrence network, we identified three clusters of lines of research: knowledge, innovation, and performance. Afterward, we proceeded to classify all the papers of our database into these three clusters using Microsoft Excel. After reading the documents, we selected the most relevant articles that matched the research goal and the clustering parameter as well. A total of 50 papers satisfied these parameters and are discussed in the content analysis. The documents were manually coded using the Mendeley Desktop 1.19 software and Microsoft Excel, considering the following aspects: 1) Authors, 2) Year of publication, 3) Journal, 4) Type of article, 5) Aim of research, 6) Relevance of absorptive capacity, 7) Methodology, sample, and variables, 8) Findings, and 9) Future research agenda. We provide a detailed explanation of the coding process in Appendix A (Knowledge cluster; Innovation cluster; Performance cluster.)

## RESULTS

### Bibliometric and descriptive analyses

Figure 2 shows the evolution of publications over time. It is observed that the earliest paper in the sample was published in 2001; from 2009, there is an increase in the number of publications, reaching a peak in 2015 with 26 publications. The 220 articles are distributed over 77 journals. Table 2 shows the most representative journals accounting for about 60 percent of the sample.



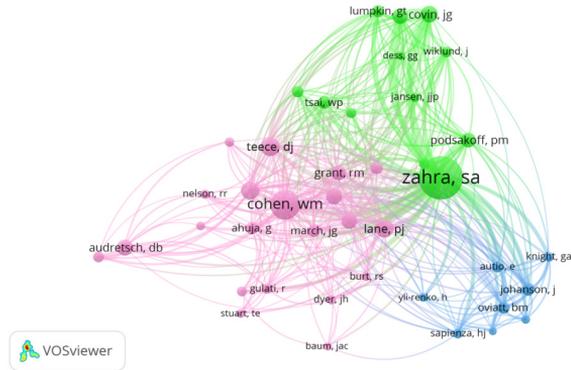
**Figure 2.** Number of papers published on AC and Startups over time

**Table 2.** Most common outlet journals

Abbreviation	Full Title	Articles
JBV	JOURNAL OF BUSINESS VENTURING	16
SEJ	STRATEGIC ENTREPRENEURSHIP JOURNAL	12
ET&P	ENTREPRENEURSHIP THEORY AND PRACTICE	11
JSBM	JOURNAL OF SMALL BUSINESS MANAGEMENT	11
IBR	INTERNATIONAL BUSINESS REVIEW	10
RP	RESEARCH POLICY	10
SBE	SMALL BUSINESS ECONOMICS	9
ERD	ENTREPRENEURSHIP AND REGIONAL DEVELOPMENT	7
JWB	JOURNAL OF WORLD BUSINESS	7
JTT	JOURNAL OF TECHNOLOGY TRANSFER	6
R&DMANAGE	R & D MANAGEMENT	6
SMJ	STRATEGIC MANAGEMENT JOURNAL	6
IJTM	INTERNATIONAL JOURNAL OF TECHNOLOGY MANAGEMENT	5
JMS	JOURNAL OF MANAGEMENT STUDIES	5
EMJ	EUROPEAN MANAGEMENT JOURNAL	4
IMM	INDUSTRIAL MARKETING MANAGEMENT	4
ISBJ	INTERNATIONAL SMALL BUSINESS JOURNAL	4
	Total:	133

In order to identify the central authors, we performed a co-citation analysis based on cited authors. This analysis builds a network based on the citation link (where one item cites the other). We set this parameter to a minimum of “40 citations of an author,” resulting in 41 central authors, as seen in Figure 3.

The map shows the number of citation links (represented by the number of lines) and the link strength (represented by the distance between items), which refers to a similarity measure normalized by the association strength (van Eck & Waltman, 2010). Zahra S. is the author with the most citation links (412) and total link strength (6082) followed by Cohen W. with 233 and 3067, respectively. The number of links and total link strength of the central authors is displayed in Table 3.



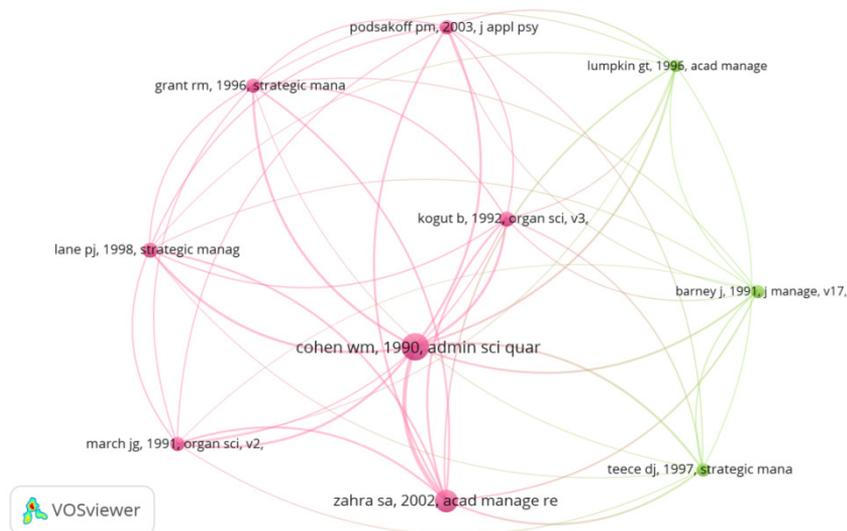
**Figure 3.** Co-citation author network

**Table 3.** Citation link and link strength of the co-citation author network

Author	Citation link	Link strength	Author	Citation link	Link strength
Acs Z.	58	841	Kogut B.	97	1653
Ahuja G.	67	1103	Lane P.	121	1879
Audretsch D.	101	1290	Lumpkin G.	66	1261
Autio E.	56	1100	March J.	72	1214
Barney J.	54	874	McDougall P.	44	827
Baum J.	40	605	Miller D.	95	1747
Burt R.	44	823	Nelson R.	47	727
Chesbrough	41	500	Nonaka I.	69	1097
Cohen W.	233	3067	Oviatt B.	69	1366
Coviello N.	40	829	Podsakoff P.	87	1537
Covin J.	105	2012	Rothaermel F.	51	709
Dess G.	42	771	Sapienza H.	53	984
Dyer J.	48	947	Shane S.	116	1694
Eisenhardt K.	99	1487	Shumpeter J.	46	728
Grant R.	86	1469	Stuart T.	42	603
Gulati R.	51	975	Teece D.	123	1888
Helfat C.	61	995	Tsai W.	72	1278
Hitt M.	58	1015	Wiklund J.	58	1208
Jansen J.	49	887	Yli-renko H.	41	814
Johanson J.	74	1444	Zahra S.	412	6082
Knight G.	47	914			

## Top 10 Co-citation references network

We also built another co-citation network but based on the analysis of cited references to find commonalities in the theoretical background. The resultant network, exhibited in Figure 4, contains the top ten cited references. We present a brief description of these publications below.



**Figure 4.** Top 10 Co-citation references network

Cohen and Levinthal (1990, p. 128) introduced the term AC to refer to the “ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends.” The authors argue that AC is critical to the firms’ innovative capabilities, and it requires prior related knowledge to evaluate and utilize the outside new knowledge. Similarly, March (1991, p. 83) suggested that knowledge “makes performance more reliable,” and learning and technological changes might improve competitive advantage. In this study, March popularized the idea that firms must enhance their technological explorative and exploitative abilities and look for a balance between them in order to ensure survival and achieve better performance. In this regard, Barney (1991), aiming for a more comprehensive understanding of sustained competitive advantage, proposed that some resources and characteristics (such as heterogeneity, valuable, rareness, or inimitableness) are crucial for a firm’s competitiveness, and they may vary over time.

To Kogut and Zander (1992), one central aspect of the competitive dimension is the ability to transfer knowledge within the firm. The authors drew on the perspective that organizations are repositories of tacit and explicit knowledge, skills, and social networks, which enable companies to learn new abilities by recombining their existent resources and capabilities. In this same vein, Grant (1996) explores how to integrate the specialized knowledge of individuals into firms. Drawing on the resource-based theory, Grant (1996, p. 110) conceptualizes the knowledge-based view as a new perspective to understand a company, placing knowledge as “the most strategically important of the firm’s resources.” Additionally, he identified the key characteristics of knowledge in order to create value: transferability (the capacity of transference across individuals), capacity of aggregation (the potential to add new knowledge to the existing one), and appropriability (the ability of the owner of a resource to receive a return).

Alternatively, Lumpkin and Dess (1996) explore the relationship between entrepreneurial orientation (EO) and firm performance. The authors defined EO as the practices, processes, and decision-making activities that lead the firm to enter new or existing markets, and is characterized by the “propensity to act autonomously, a willingness to innovate and take risks, and a tendency to be aggressive toward competitors and proactive relative to marketplace opportunities” (Lumpkin & Dess, 1996, p. 137).

In order to address the question of how firms achieve sustained competitive advantage, Teece et al. (1997) proposed the dynamic capabilities concept. As discussed in section 2, this perspective “emphasizes the development of management capabilities, and difficult-to-imitate combinations of organizational, functional and technological skills” (Teece et al., 1997, p. 510). Similarly, from the basis that not all firms have equal chances to acquire knowledge, Lane and Lubatkin (1998) reconceptualized the construct of AC as a dyad-level construct and established some conditions for this interaction to occur: the specific type of knowledge, similarities in practices, logic and organizational structure, and familiarities between the firms. Zahra and George (2002) also reconceptualized AC as a dynamic capability related to knowledge creation and exploitation in order to gain sustained competitive advantage. Additionally, they proposed that AC is built upon two capacities: potential capacity (knowledge acquisition) and realized capacity (knowledge transformation and exploitation). Ending this top ten references network, Podsakoff et al. (2003) present an important methodological review about biases in behavioral research methods that are often employed and cited by AC researchers. The authors summarized the most common sources of method biases, their effects, and techniques to control them.



## Knowledge cluster

New knowledge is an essential input factor for innovation and new firm's progress (Mueller, 2006; Prashantham & Young, 2011; Sullivan & Marvel, 2011; McKelvie, Wiklund, & Brattström, 2018; Bingham & Davis, 2012) by offering the possibility of renewing existent skills, technological paths, and developing innovative capabilities to improve competitive advantage and stimulate growth (Zahra, Filatotchev, & Wright, 2009; Agarwal, Audretsch, & Sarkar, 2010). Several authors recognize R&D as a major vehicle to acquire new knowledge (Acs, Braunerhjelm, Audretsch, & Carlsson, 2009; Mueller, 2006). However, very often, new and small firms do not have the resources to structure an R&D department; thus, partnerships with institutions such as universities or research laboratories are crucial to develop new knowledge (Hayton & Zahra, 2005; Hayter, 2013; Carayannis, Provan, & Grigoroudis, 2016; Dai, Goodale, Byun, & Ding, 2018). Sullivan and Marvel (2011) emphasize that technology and market knowledge is highly important to achieve positive results and enhance the innovative process. In any case, direct inter-personal contacts and proximity to the environment are useful to access knowledge (including tacit knowledge) faster and more successfully (Mueller, 2007, p. 356).

Based on Huber (1991), De Clercq et al. (2012) categorized knowledge acquisition (KA) into five types: experiential learning (learning from experience), vicarious learning (learning by observing others), searching (learning by searching for specific information), grafting (learning by incorporating entities that possess knowledge), and congenital learning (drawing on intrinsic knowledge gained from founders or personal experience). Differently, Carayannis, Provan, and Givens (2011) proposed to classify KA into two groups regarding the form of acquisition: (1) formal KA and arbitrage (referring to the intended ability to manage and apply knowledge for a specific purpose), and (2) informal KA and serendipity (referring to the unintended rewards of enabling knowledge from different sources).

Friesl (2012) identified four knowledge acquisition strategies: "low key" in which there are low levels of collaborative and internal learning and low performance as well; "mid-range," where the emphasis is on collaborative and market-based learning but low levels of internal learning; "focus," where the firms' efforts concentrate on both collaborative and internal learning; and "explorer," in which firms have high mean values for all knowledge acquisition categories (i.e., collaborative, internal, and market-based learning). In this latter group, firms have a particular interest in renewing their knowledge base in order to achieve the highest level of performance.

We identified three recurrent research topics in the present cluster: entrepreneurial internationalization (EI), spin-offs, and identification of

opportunities. The first topic, EI, explores how new firms go about looking to expanding their activities into foreign markets (De Clercq et al., 2012; Bruneel, Yli-Renko, & Clarysse, 2010; Yu, Gilbert, & Oviatt, 2011). Considering that entering foreign markets might entail the obsolescence of existing knowledge and capabilities, to acquire new knowledge becomes crucial to successful internationalization (De Clercq et al., 2012; Prashantham & Young, 2011; Bruneel et al., 2010; Fernhaber, McDougall-Covin, & Shepherd, 2009; Tolstoy, 2009). Therefore, AC emerges as a cornerstone for new venture survival and a critical factor for growth (Mueller, 2007; Qian & Acs, 2013; Moon, 2011). Some studies point out that networks and alliances may enable and accelerate initial commercial activities in new markets (Bruneel et al., 2010; Yu et al., 2011; Sullivan & Marvel, 2011; Perez, Whitelock, & Florin, 2013), and support the absence of in-house translators of new knowledge as suggested in AC theory (Cohen & Levinthal, 1990).

The second topic of research studies is the creation of spin-offs as a vehicle to commercialize new knowledge developed in public research institutes, in large incumbent firms, or in universities (Knockaert, Ucbasaran, Wright, & Clarysse, 2011; Qian & Acs, 2013; Hayter, 2013; Patton, 2014). Qian and Acs (2013, p. 191) argued that the level of knowledge spillover entrepreneurship depends not only on the speed or level of knowledge creation, but also on entrepreneurial absorptive capacity (EAC), defined as the “ability of an entrepreneur to understand new knowledge, recognize its value, and subsequently commercialize it by creating a firm.” Different from Cohen and Levinthal’s AC concept, EAC focuses on the entrepreneur’s abilities—not on the firm’s abilities—and involves the capacity to build a new business.

The third and last topic considers AC as a means to identify opportunities and enhance the firm’s performance (McKelvie et al., 2018; Saemundsson & Candi, 2017). Due to the fact that existing knowledge base might become obsolete within a short period of time, new ventures must intensively promote the search for novel knowledge, primarily in market and customer knowledge (McKelvie et al., 2018). Regarding the principles of AC set by Cohen and Levinthal (1990), to absorb new knowledge requires certain existent abilities. This is probably a challenge for startups because, in many cases, they are building new markets and customers have not been identified at all. In this respect, McKelvie et al. (2018) suggest that new ventures may not over-rely on external knowledge acquisition, especially when the firm works in a highly dynamic sector. Furthermore, Saemundsson and Candi (2017, p. 43) proposed to divide potential AC into “problem absorptive capacity, i.e. the ability to identify and acquire knowledge of the goals, aspirations and needs of current and potential customers, and solution absorptive capacity, i.e. the ability to identify and acquire external knowledge of solutions to fulfill

them.” The authors found out that changes in problem absorptive capacity are a stronger trigger for identification of new opportunities than changes in solution absorptive capacity.

### **Innovation cluster**

According to Dushnitsky and Lenox (2005a, 2005b), Corporate Venture Capital (CVC) carry a potential innovative benefit. The authors suggest that the greater the firm’s AC, the greater the firm’s investment in entrepreneurial new ventures and, therefore, the firm’s innovation rate (Dushnitsky & Lenox, 2005b, 2005a). Nevertheless, the role of AC is not restricted to an enabler of innovation. In fact, access to new information provided by CVC can improve the AC of the firms (Wadhwa & Hall, 2005), although this strategy may limit the knowledge created. Similarly, Lee, Kim, and Jang (2015) argue that the firm’s knowledge diversity enables corporate investors to acquire and maximize useful knowledge.

On the other hand, Winkelbach and Walter (2015) found out that prior knowledge held by the firms has a non-significant effect on value creation. Knowledge creation and knowledge-related learning capabilities (which are moderated by AC) enable firms to deal with dynamic environments to create value and develop innovation. Scholars approach the pursuit of new knowledge by firms to promote innovation in different ways. For instance, human mobility across national borders may foster knowledge creation (Liu, Wright, Filatotchev, Dai, & Lu, 2010). The new knowledge may come from scientists and engineers that return from abroad to start up a new venture in their native countries (Liu et al., 2010). Regarding the type of source of new knowledge (i.e., internal or external), Kamuriwo, Baden-Fuller, and Zhang (2017) point out that external knowledge development is more associated with breakthrough innovations and with a faster time-to-market.

Nevertheless, existing literature suggests that there are some setbacks related to knowledge acquisition and innovation. Marvel (2012) pointed out that sometimes knowing less is better to create innovation. His findings suggest that acquiring the knowledge of ways to serve markets is “negatively associated with innovation radicalness” (Marvel, 2012, p. 464). Therefore, the less knowledge about existing offerings in the market and how they work, the greater the chances for developing breakthrough innovations.

Knowledge acquisition can also stem from universities in the form of academic entrepreneurship, technology transfer, and research commercialization. Using the AC perspective, two multiple case studies explored the Proof of Concept (PoC) process within a University Science Park Incubator (UK) and provided evidence that AC plays a crucial role in obtaining

commercial outcomes (McAdam, McAdam, Galbraith, & Miller, 2010; McAdam, McAdam, & Brown, 2009).

Finally, network market orientation is found to make a significant contribution to the development of AC in international new ventures. Monferrer, Blesa, and Ripollés (2015) showed that network market orientation facilitates the development of dynamic adaptive and absorptive capabilities, which influence their capacity to develop innovative, dynamic capabilities.

### **Performance cluster**

AC might also moderate the firm's performance (Nielsen, 2015; Zahra & Hayton, 2008). In our review, we found two perspectives of performance: addressed as a capability to innovate and as a financial output. Typically, firms engage in activities such as acquisitions, alliances and CVC when pursuing growth and profitability. Yet, it is not completely clear how these activities may influence the firm's performance. To that end, Zahra and Hayton (2008) suggest that AC moderates this relationship. According to their findings, after studying 217 global manufacturing firms, the investments made for building AC positively influence the firm's performance benefits derived from international venturing. Conversely, Benson and Ziedonis (2009, p. 330) argue that "internal technological capabilities remain a critical determinant of success in innovation-driven acquisitions." A limit on CVC investment is imposed by the acquirer's total R&D expenditures, and beyond this limit, the firm's performance starts to improve at a diminishing rate. Wales, Parida, and Patel (2013) posit that the relationship between AC and financial performance is mediated by Entrepreneurial Orientation (EO) referred to as the "strategy-making practices, management philosophies, and firm-level behaviors that are entrepreneurial in nature" (Anderson, Covin, & Slevin, 2009, p. 220).

Based on an individual perspective of AC, Nielsen (2015) proposes that individuals with higher levels of education have also higher absorptive and learning capacities that leverage the likelihood of firms' survival and growth. Additionally, some authors (for instance, Rhee, 2008; Witt, 2004) claim that, in general, the social network represents the theoretical lenses used to investigate performance and startup success. Surprisingly, Rhee (2008) found that social networks of the startup's team members do not help their ventures to reap superior performance. By comparing university and corporate spin-offs, Clarysse, Wright, and Van de Velde (2011) revealed that different characteristics in the technological knowledge base (e.g., specificity, newness, or tacitness) influence the spin-off's performance and growth. According to Simsek and Heavey (2011), corporate entrepreneurship impacts positively the knowledge-

based human, social, and organizational capital and is also positively associated with the firm's performance (i.e., profitability and growth).

Considering international sales performance, Javalgi, Hall, and Cavusgil (2014) argue that AC has a positive relation with customer-oriented selling and performance in international B2B settings. Furthermore, Un and Montoro-Sanchez (2011) define performance as the development of new technological capabilities through investments in R&D. Their research uncovered that the prior capabilities enable the firm to develop new technological ones. In another approach, Zheng, Liu, and George (2010) suggest that a key performance indicator is the valuation or market value, which is influenced by the innovative capability and the network heterogeneity of the firms.

Dynamic and operating capabilities must interact to enable entrepreneurship (Newey & Zahra, 2009). AC may be a key knowledge-based mechanism, which connects learning at both product development and portfolio planning levels. Finally, Deeds (2001) suggests that there is a positive relationship between a high technology venture's R&D intensity, technical capabilities, and AC and the amount of entrepreneurial wealth created by the venture.

## DISCUSSION

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On the basis of the issues raised in the previous section, we observed a relationship between the three clusters: firms employ and develop their AC in order to identify and transform new knowledge into innovation projects, which in turn leads to performance improvement and growth (see figure 6). This relationship is confirmed by authors such as Mueller (2006), who emphasizes the contribution of new knowledge and knowledge exploitation as valuable inputs for economic regional growth. Moreover, Zahra et al. (2009) reinforce the idea that for a startup to grow, it is necessary to revamp its skills, replace its dated capabilities, and build up new ones. In this regard, AC plays an important role as an enabler for integrating knowledge from different sources. Another approach that supports the relationship presented in Figure 6 is the innovation capability because this construct integrates the creation or appropriation of new knowledge, the transformation of that knowledge into new or improved products, and the firm's progress or performance enhancement (Aas & Breunig, 2017).



**Figure 6.** Relationship between the three clusters

We identify that there are open discussions about different aspects. The first is the favorability of certain types of knowledge sources (i.e., internal or external) for developing innovations. McKelvie et al. (2018) argue that in highly dynamic environments, the payoff attributed to investments in externally acquired knowledge is not significant. In this same vein, Marvel (2012) found out that knowing less is better to create innovation; the less knowledge about existing offerings in the market, the greater the chances for developing breakthrough innovations. Conversely, Kamuriwo et al. (2017) claim that external knowledge development is more associated with breakthrough innovations and with a faster time-to-market. The second aspect is the role of prior knowledge. On the one hand, Winkelbach and Walter (2015) identify the sole reliance on prior knowledge may foster traps and hinder the ability to foresee opportunities. On the other hand, Un and Montoro-Sanchez (2011) argue that prior stock of knowledge and capabilities enable the development of new ones and thus ensure value creation. Finally, there are some mismatches related to the volume of new knowledge required for developing breakthrough innovations; in the discussion set out by Marvel (2012) it is not clear whether large amounts of knowledge are favorable or not in the development of radical innovation products.

There are three major reasons for companies to engage in knowledge renewal: to address the evolving character of environmental conditions and customer's preferences for enabling growth (Marvel, 2012; Perez et al., 2013; Zahra et al., 2009), to enter into foreign markets (i.e., internationalization) (Prashantham & Young, 2011; Rhee, 2008; Tolstoy, 2009), and to identify entrepreneurial opportunities (McKelvie et al., 2018; Saemundsson & Candi, 2017). Regarding the types of strategies for knowledge acquisition, we identified two of the former: formal and informal (Carayannis et al., 2011), and two of the latter: internal and external (Friesl, 2012) (see Figure 7).

*Types of strategies for acquiring knowledge*

		<b>Internal</b>	<b>External</b>
<b>Types of Knowledge Acquisition</b>	<b>Formal</b>	<ul style="list-style-type: none"> <li>• Experiential</li> <li>• Vicarious</li> <li>• Searching</li> <li>• Congenital</li> </ul>	<ul style="list-style-type: none"> <li>• Grafting</li> <li>• Human mobility</li> <li>• Partnerships with universities and institutions</li> <li>• Social networks</li> <li>• Acquisitions and alliances</li> </ul>
	<b>Informal</b>	Serendipity (unintended process)	Serendipity (unintended process)

**Figure 7.** Types and strategies of knowledge acquisition

Internal–formal strategies comprise four categories: experiential learning (learning from experience), vicarious learning (learning by observing others, for instance, customers or competitors), searching (learning by searching for specific information), and congenital learning (drawing on intrinsic knowledge gained from founders or personal experience) (De Clercq et al., 2012). On the other hand, external–formal strategies include grafting (learning by incorporating entities that possess knowledge) (De Clercq et al., 2012), human mobility (i.e., knowledge transfer from the exchange of experience as a result of human mobility across national borders) (Liu et al., 2010), partnerships with universities and technology institutions (Clarysse et al., 2011; Mueller, 2006), social networks (Newey & Zahra, 2009; Witt, 2004), and acquisitions and alliances (Dai et al., 2018; Yu et al., 2011; Zahra & Hayton, 2008). Both internal–informal and external–informal are based on the serendipity approach, which refers to the unintended rewards of enabling knowledge from different sources (Carayannis et al., 2011).

From the review, we highlight three recommendations for startups concerning absorptive capacity. First, considering the resource limitations of startups, developing partnerships with institutions such as universities or research laboratories could enhance the capacity for identifying and gathering new knowledge (Hayton & Zahra, 2005; Hayter, 2013). Second, networking, direct inter-personal contacts, and proximity to the environment are useful to access knowledge and become crucial to successful internationalization (De Clercq et al., 2012; Mueller, 2007). Finally, in order to improve the opportunities recognition, new firms should emphasize the problem

absorptive capacity, in other words, in identifying and acquiring knowledge related to the aspirations and needs of current and potential customers, instead of on existent solutions (Saemundsson and Candi, 2017)

Additionally, some common issues among researchers were identified. First, there is wide adoption of the definition of AC proposed by Cohen and Levinthal (1990) as the mechanism through which firms identify, acquire, and exploit new knowledge in order to achieve more sustainable levels of growth. Second, internal capabilities enable the firm to transform new knowledge into value. Third, intellectual property rights may inhibit the openness to acquire external knowledge and limit the offers to receive venture capital.

## CONCLUSION AND FUTURE RESEARCH AGENDA ---

The purpose of this paper was to identify how the concept of AC has been addressed in the new venture context. We selected 220 documents and applied a systematic literature review method that evidenced three clusters of research: knowledge, innovation, and performance. We concluded that the AC construct first conceived by Cohen and Levinthal in 1990 still stands as an important theoretical lens. Several scholars used the concept in its original context, but others extended it to other research fields, such as the role of AC in universities and research institute spin-offs, corporate venture capital, entrepreneurs' networks, and as a crucial factor to new venture performance.

Bibliometric analyses showed an increasing interest in AC in the context of new firms. In spite of the earliest paper being published in 2001, the main concepts (which currently prevail) were proposed during the decades of the 1990s (Cohen & Levinthal, 1990; Grant, 1996; Kogut & Zander, 1992; Lumpkin & Dess, 1996) and the early 2000s (Zahra & George, 2002). We identify three inter-related clusters of research regarding the importance of AC in the new venture context: knowledge, innovation, and performance. The relationship between the clusters reflects how firms employ and develop their AC in order to identify and transform new knowledge into innovation projects, which in turn leads to performance improvement and growth.

Content analysis revealed three main concerns related to knowledge obsolescence: growth and dynamic environment and markets, entrepreneurial opportunities, and internationalization. Firms can apply several strategies, internal or external, in order to acquire knowledge, and also might follow both formal and informal processes to address the strategies.

Regarding future research, we identify three avenues exhibit in Table 4. The first avenue contemplates AC from the individual perspective to follow the multilevel approach set by some management areas, which started with

the firm level, business unity, project, and ended on an individual level (e.g., uncertainty management; Gomes et al., 2019). The second avenue centers on bibliometric analysis and literature reviews aiming to identify pivotal studies, which have changed or incorporated content into the AC literature. Finally, the third avenue is related to the strategies for knowledge acquisition in order to clarify the conflicting aspects identified in our content analysis.

**Table 4.** New avenues for future research

Avenues for future research	Potential research questions
The individual perspective	<ul style="list-style-type: none"> <li>• Which are the micro-foundations and individual cognitive aspects associated with AC and knowledge renewal?</li> <li>• Which mechanisms can contribute to the enhancement of AC? For instance:               <ul style="list-style-type: none"> <li>• Exposure to new experiences</li> <li>• Involvement with different areas of knowledge</li> <li>• Access to education and training programs</li> </ul> </li> </ul>
Bibliometric analysis and literature review	<ul style="list-style-type: none"> <li>• How has the AC concept evolved, and which are the pivotal studies that have changed or incorporated content to the AC literature?</li> </ul>
Strategies for KA	<ul style="list-style-type: none"> <li>• Which are the barriers and constraints for KA during the different stages of the startup formation?</li> <li>• What is the effect of the type of strategy for KA (internal or external) on the degree of radicalness of the innovations of the startups?</li> <li>• What is the relationship between the type of strategy for KA and the appropriateness for determining the problem (customer concerns) or the solution (product concerns)?</li> </ul>

In addition, we identify some suggestions from the literature: empirical research for validating models or propositions, considering larger samples, longitudinal analysis, different sectors, cultures, and regions. Furthermore, the authors propose to conduct further studies analyzing the types of networks, the interdependencies between the innovation strategies, public policy on innovation, and incorporating different measures of AC.

We contribute to the innovation and entrepreneurship literature in different ways. First, we have connected the importance of AC and new venture creation, to provide a better understanding of how entrepreneurs could enhance their innovative processes. Second, we have established an overview of the existing literature on AC in startups, highlighting the main authors and drivers. Third, we have clustered the pertinent literature with distinct research themes regarding the entrepreneurial AC found in our systematic review and have also proposed a framework that differentiates

knowledge acquisition strategies for new ventures. Finally, we have suggested future research opportunities on entrepreneurship and absorptive capacity.

The results also allow us to identify some practical implications. The analyzed literature suggests that there are certain strategies that entrepreneurs may adopt in order to acquire and absorb new knowledge. We categorize these strategies according to the knowledge source (i.e., internal or external) and the degree of intentionality (i.e., formal or informal). This effort is aimed at persuading entrepreneurs and practitioners to bear in mind a wide range of strategies that mediate between acquiring knowledge and achieving growth objectives and expansion into new markets.

Finally, some limitations must be considered regarding the systematic literature review method. First, concerning the sampling procedures, the keyword selection, which includes only articles published in English and databases from one specific scientific citation indexing service, can limit the resulting sample. In addition, there is some subjectivity involved in the selection of articles for analysis; this is mainly because it relies on the authors' interpretations from reading titles and abstracts. Furthermore, the concept of startups is not very precise. We noticed that it still remains ambiguous and unclear since it is defined differently among the authors. Therefore, it can be difficult to filter the sample in order to restrict the analyses to one specific type of firm.

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## Appendix A. Coding process of the three clusters of research guidelines

### Knowledge cluster

AUTHORS	YEAR	JOURNAL	TYPE	AIM OF RESEARCH	RELEVANCE OF AC	METHODOLOGY	SAMPLE	VARIABLES	FINDINGS	FUTURE RESEARCH AGENDA
Mueller	2006	RESEARCH POLICY	Empirical article	To understand the role of entrepreneurship and university-industry relations to acquire new knowledge to contribute to regional economic growth.	To identify, capture, and exploit new knowledge.	Cobb-Douglas production function. Panel data cross-sectional time series.	West German region (institutions, universities, new ventures, and firms).	Dependent: Knowledge related entrepreneurship (startups). University-industry relations (grants, spillovers, spinoffs). Independent: Economic Performance.	There is a positive relationship between a well-developed regional knowledge stock and regional economic performance. Regions with a higher level of entrepreneurship (especially in innovative industries) experience greater economic performance. Universities are a source of innovation.	Research visibility of universities' relevance to regional growth. Studies on public policy on innovation
Zahra et al.	2009	JOURNAL OF BUSINESS VENTURING	Conceptual article	How threshold companies (the intermediate stage between startup and established companies) develop new capabilities to improve performance.	AC has two major functions: wealth creation and protection of shareholders' interests. AC allows threshold companies to convert their knowledge into products, goods, and services that create wealth.	Literature review	–	–	To develop AC requires sustained investments in human resources, infrastructure, and research programs. Managerial accountability and AC can sometimes substitute for each other while being complementary.	Follow-up with empirical research to validate the propositions proposed, incorporating measures of managers' skills and environmental conditions. To examine the potential interactions between managerial accountability and absorptive capacity at different thresholds of firms' evolution.
De Clercq et al.	2012	JOURNAL OF BUSINESS VENTURING	Conceptual article	To provide an evaluative overview and evaluation of published research on the roles of learning and knowledge in early new ventures internationalization.	To capture new knowledge based on the preexisting knowledge in outcomes of early internationalization.	Systematic Literature review	48 relevant articles published between 1994 and 2010.	–	Vicarious and congenial learning appear to play a central role in the internationalization process. Search is probably the leading KA type to enhance the post-entry performance. A new venture may be better able to absorb new foreign knowledge when it possesses an extensive knowledge base.	Further studies regarding the individual learning level, center on explaining how a venture realizes learning advantages when internationalizing.
Acis et al.	2009	SMALL BUSINESS ECONOMICS	Empirical article	To develop a knowledge spillover theory of entrepreneurship to improve the microeconomic foundations of endogenous growth models.	To acquire new knowledge.	Longitudinal panel study. F tests, regression techniques, fixed effect panels.	Startups data from World Bank across 1997-2004 from 19 countries.	Dependent: Entrepreneurship Independent: Knowledge stock, R&D exploitation by incumbents. Barriers to entrepreneurship.	Entrepreneurial activity does not involve only the creation and the management of opportunities, but also the exploitation of knowledge not capitalized by incumbent firms.	Expand the explanation about where opportunities come from, how intra-temporal knowledge spillovers occur, and the dynamics of occupational choice leading to the new firm formation.
Prashantham and Young	2011	ENTREPRENEURSHIP THEORY AND PRACTICE	Conceptual article	To answer what explains differential internationalization speed among international new ventures, after their initial entry into international markets?	AC allows knowledge creation and utilization that enhances a firm's ability to gain and sustain a competitive advantage.	Literature review	–	–	The pace of internationalization varies according to new ventures' capabilities in accumulating and utilizing knowledge through exploitative learning. Social capital could facilitate AC.	Empirical research in order to validate the propositions suggested incorporating moderators and confounding factors such as knowledge-intensity of the industry and firm, firm-specific factors, and home country effects.
Bruneel et al.	2010	STRATEGIC ENTREPRENEURSHIP JOURNAL	Empirical article	To address how firms can accumulate the knowledge and skills required for successful international expansion and how young firms may compensate for their lack of firm-level international experience by utilizing other sources of knowledge.	Facilitates future learning of new and related knowledge.	Survey, multiple regression, and sensitivity analyses.	114 young, technology-based firms in Flanders, Belgium.	Dependent: Extent of internationalization. Independent: Experiential learning Inter-organizational learning. Congenial learning.	The firm's experience in a determined international market negatively moderates the effects of congenial and inter-organizational learning. The lower the startup's experiential learning, the more the effects of the team's prior international knowledge base and skills obtained by key partners.	To conduct other empirical researches with larger samples in other regions and industries, and also longitudinal studies to analyze the dynamics of learning and internationalization.

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Fernhaber et al.	2009	STRATEGIC ENTREPRENEURSHIP JOURNAL	Empirical article	To develop a knowledge-based model of internationalization to investigate the role of external sources of international knowledge	AC is recognized as an organizational mechanism for integrating internal and external sources of knowledge.	Longitudinal panel study. Internal regressions and correlations.	206 U.S. high technology new ventures between 1996-2000.	Dependent: New venture internationalization Independent: Alliance partner int'l knowledge. Venture Capital int'l knowledge. Proximal firm int'l knowledge	External sources are positively associated with a startup's level of internationalization. The nature of external sources of international knowledge depended on the international knowledge of the new venture's team.	Additional tests using other samples, and comparing new and mature firms to analyze the differences. To include the international entry year as a control variable. And to examine how external sources of knowledge impact a new venture's country location decision, taking into consideration country differences.
Yu et al.	2011	STRATEGIC MANAGEMENT JOURNAL	Empirical article	To examine the role of networks in accelerating new venture sales into foreign markets	To help young ventures to learn new knowledge in foreign markets	Longitudinal panel study. Cox proportional hazard models, regressions, and correlations. Kaplan-Meier analysis.	Longitudinal dataset of 118 new ventures in the U.S (1990-2000).	Dependent: Venture initiation of foreign sales. Independent: Technology expertise of technology alliance partners. Marketing alliances with foreign firms. Marketing alliances with internationally experienced startups.	Knowledge derived from ventures' technology and marketing alliances increases the likelihood that startups exploit opportunities in international markets. The probability of a startup initiating foreign sales may be altered by the technological and marketing relationships and by the time required for process knowledge and to exploit international opportunities	New empirical studies considering other high-tech industries, environments, and characteristics. To study how a venture's alliance network influences its degree and scope of internationalization through longitudinal analyses.
Bingham, and Davis	2012	ACADEMY OF MANAGEMENT JOURNAL	Conceptual article	To understand whether the distinct learning processes that organizations use (e.g., trial-and-error learning, vicarious learning, experimental learning, and improvisational learning) combine over time in ordered ways.	To identify and capture new knowledge.	Theory-building (Eisenhardt, 1989) and theory elaboration methods (Lee, 1999). Semi-structured interviews. Case-study	9 entrepreneurial firms with headquarters in Singapore, the U.S., and Finland.	--	Learning sequences (LS) exist, evolve, and are influenced by initial conditions. LS have 2 patterns: seeding and solving. These 2 patterns vary across firms, and the team's international experience influences their adoption.	Empirical studies with a broader sample.
Sullivan and Marvel	2011	JOURNAL OF MANAGEMENT STUDIES	Empirical article	The article examines how an entrepreneur's acquisition of different types of knowledge and reliance on their network for knowledge relate to outcomes of product/service innovativeness and first-year venture sales.	AC allows entrepreneurs to understand, assimilate, and apply new knowledge more effectively.	Survey, OLS regression, sensitivity analyses, hierarchical moderated regression analysis, test of the slopes.	151 venture founders from 16 technology incubators in the USA.	Dependent: First-year venture sales. Product/service innovativeness. Independent: Knowledge acquisition. Moderator: Network reliance on acquiring technology and market knowledge.	Acquiring technology knowledge positively affects the innovativeness of a new venture. Entrepreneurs' network reliance on networks for technology knowledge acquisition.	To conduct other empirical researches with larger samples in other regions. Expand the understanding of the type of networks' reliance and the potential AC.
Agarwal et al.	2010	STRATEGIC ENTREPRENEURSHIP JOURNAL	Conceptual article	To develop implications of the link between knowledge spillovers and strategic entrepreneurship and identify key topics, themes, and issues for future research.	The ability to identify and value new ideas, including those of supply-side agents.	Literature review	--	--	Knowledge spillovers and strategic entrepreneurship are linked to each other, and examining this relationship is important to understand the causes and consequences of value creation and appropriation, diffusion of knowledge, growth, and prosperity of regions and nations.	To research impact on knowledge spillovers and strategic entrepreneurship within and across organizational contexts, the underlying mechanisms that relate knowledge spillovers and strategic entrepreneurship (among other research questions)
Mueller	2007	SMALL BUSINESS ECONOMICS	Empirical article	To identify whether or not entrepreneurship is an important vehicle for knowledge flows and economic growth.	To identify, capture, and exploit new knowledge.	Longitudinal panel study. Cobb-Douglas production function and regressions.	74 planning regions in West Germany (1990-2002).	Dependent: Regional economic growth. Independent: Entrepreneurship, Knowledge creation.	A strong regional knowledge stock is central to economic growth. New knowledge in private firms is more likely to be converted into new products or services. However, research in public organizations is often characterized by basic research which is very important for the regional and national knowledge stock.	Empirical studies with a broader sample.
Knockaert et al.	2011	ENTREPRENEURSHIP THEORY AND PRACTICE	Conceptual article	To assess how knowledge can be transferred and employed in Science-based entrepreneurial firms (SBEF) in order to enhance its performance.	To identify, use, and transfer knowledge successfully.	Longitudinal inductive case study approach.	9 SBEFs from Inter University Micro Electronics Centre, Belgium.	--	Tacit knowledge is better transferred when a substantial part of the former research team become founders of the new venture.	Further research studying a matched sample of SBEFs in the early stages that failed and succeeded in order to compare them and to identify which specific types of tacit knowledge is crucial to enhance SBEF performance.

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Qian and Acs	2013	SMALL BUSINESS ECONOMICS	Conceptual article with empirical evidence	To propose a better understanding of how entrepreneurial activity builds knowledge.	To allow entrepreneurs to understand new knowledge, recognize its value, and commercialize it.	Literature review, Correlation matrix, path analysis, regressions.	Patent data from the U.S. Patent and Trademark Office, 305 MSAs/PMSAs	Dependent: New knowledge. Entrepreneurship. Independent: Human capital. New knowledge.	Knowledge spillover entrepreneurship depends on new knowledge and entrepreneurial AC (EAC), defined as the "ability of an entrepreneur to understand new knowledge, recognize its value, and subsequently commercialize it by creating a firm"	Additional empirical work using an individual unit of analysis (surveys with entrepreneurs).
Tolstoy	2009	JOURNAL OF SMALL BUSINESS MANAGEMENT	Empirical article	To investigate the prospective impact network knowledge and knowledge combinations have on entrepreneurial firms' knowledge creation.	It is the mechanism by which firms identify, acquire, and exploit new knowledge.	Survey, Structural equation model, using linear structural relations (LISREL).	Random sample of 188 international SMEs from Statistics Sweden Business Register	Dependent: Knowledge creation. Knowledge combination. Independent: Dependence on customer knowledge. Dependence on supplier knowledge.	Knowledge combination is a predominant activity to enable knowledge creation in foreign markets. In order to create commercial products and services, firms must constantly rewrap knowledge by combining it in new ways.	Further investigation regarding the processes involving knowledge combination and knowledge creation in foreign-market networks of international entrepreneurs, and the cost of creating knowledge in external networks rather than in a firm's internal network.
Hayton and Zahra	2005	INTERNATIONAL JOURNAL OF TECHNOLOGY MANAGEMENT	Empirical article	To examine the extent to which the AC of high technology new ventures is influenced by the human capital characteristics of their top management teams (TMT).	AC is the ability to identify, acquire, assimilate, and exploit new knowledge.	Survey, Hierarchical regressions, and correlations.	340 high technology new ventures from the USA.	Dependent: Innovation. Financial performance. Independent: Venturing. Human capital.	Human capital diversity of the TMT moderates the relationship between venturing activities, innovation, and financial performance. The diversity of the TMT in terms of both functional experience and formal educational background can enhance the acquisition and exploitation of new knowledge.	To consider alternative indicators of human capital of top management and to examine the roles of the TMT characteristics in organizational learning from venturing activities.
Hayter	2013	SMALL BUSINESS ECONOMICS	Conceptual article	To answer the question: what is the role of networks in encouraging and supporting knowledge-based entrepreneurship?	To identify, capture and exploit new knowledge	Literature review	--	--	The ability of an entrepreneur and an entrepreneurial firm to take advantage of the information and resources provided by a network is determined by their internal capability to do so. From the knowledge-spillover perspective, networks provide resources and support the knowledge, but few empirical studies exist relating to entrepreneurship.	To develop more empirical research relating to knowledge-spillover and entrepreneurship. Studies to examine the relationship between the content and nature of networks and entrepreneurial outcomes such as firm establishment, performance, and evolution.
Carayannis et al.	2011	IEEE TRANSACTIONS ON ENGINEERING MANAGEMENT	Empirical article	To examine the roles of knowledge acquisition and transformation in regional sustainability of new venture formation.	The means by which new venture founders incorporate new knowledge into their organizations.	Agent-based simulation, 30 runs of the simulation in six configurations. F-statistics.	--	Dependent: New venture formation. Independent: Formal knowledge acquisition. Serendipitous knowledge transformation.	Formal knowledge acquisition is more effective in knowledge-scarce regions, while informal knowledge acquisition and serendipity are more appropriated for new venture formation in knowledge-rich regions.	Empirical tests to validate the models and to analyze the rate and quality of new venture dynamics
Patton	2014	INTERNATIONAL SMALL BUSINESS JOURNAL	Empirical article	To analyze the incubation process through the lens of AC in order to evaluate how it might strengthen the business model of new technology firms.	AC enables knowledge development and critically, facilitating the transformation of knowledge into a resource which supports business development and sustainability.	Case study	27 new firms at two University incubators at Southampton and Bristol between 2009 and 2011.	--	The interaction between incubator directors, mentors, and business support agents enables experiential and exploitative learning, which are the precursors of knowledge accumulation.	Future research needs to investigate how the incubation process creates a context which encourages founders to engage with those who can assist the accumulation of the knowledge to develop a commercial business model.
Perez et al.	2013	EUROPEAN JOURNAL OF MARKETING	Empirical article	To gain a better understanding of how small technology start-ups learn about a key customer in the context of B2B relationships, and to propose a model of interfirm learning with customers	The ability of a firm to recognize the value of new, external information, assimilate, and apply it to commercial ends and enhance innovative performance.	Qualitative case-based approach over two to three years.	Three cases of alliances to develop new products or technologies between a young technology firm and a large, well-established customer.	--	A similar knowledge base affects positively the new venture's ability to learn about customers. Learning-by-interacting is beneficial for technology start-ups to access new markets and new resources to develop innovative solutions that could not have been developed alone.	Further research using large-scale longitudinal studies and considering the effect of inter-firm market orientation on performance and innovation.

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Friesl	2012	BRITISH JOURNAL OF MANAGEMENT	Empirical article	To delineate the relationship of activity configurations for knowledge acquisition and company performance.	AC helps firms to identify, acquire, and use knowledge that affects firms' performance and innovativeness.	11 semi-structured interviews. Survey, 88 CEOs. Multiple regressions and correlations analysis. ANOVA.	Young biotechnology companies in Germany.	Dependent: Performance. Independent: Knowledge acquisition strategies.	There are four knowledge acquisition strategies for knowledge acquisition and performance: low key, mid-range, focus, and explorer. Knowledge acquisition strategies that show a high intensity and that combine both complementary and supplementary knowledge acquisition are linked to higher levels of company performance.	To conduct other empirical researches with larger samples in other regions and with a greater number of respondents. New studies aiming to investigate how young companies actually orchestrate knowledge acquisition in practice.
Moon	2011	ASIAN JOURNAL OF TECHNOLOGY INNOVATION	Empirical article	To examine the factors that influence a firm's openness to external sources of knowledge in the Korean service sector.	To recognize the value of new, external information, assimilate it, and apply it to commercial ends.	Survey. Negative binomial regression, correlations, Tobit regression.	2498 Korean service new firms	Dependent: Degree of openness to external knowledge sources. Independent: Overall tightness of appropriability of a firm. The share of employees with graduate degrees. Whether a firm is a startup. Firm size.	The appropriability strategy, the share of employees with graduate degrees, being a startup, and firm size seem to be major determinants of the openness to external knowledge sources in Korean service industries. The use of intellectual property rights may not be effective in enhancing the openness to external knowledge in Korean service industries, it may eventually restrict the incentive to use external knowledge.	To develop the measures of AC in terms of human capital and skill and to compare the determinants of openness in the manufacturing and service sectors.
Carayannis et al.	2016	JOURNAL OF TECHNOLOGY TRANSFER	Empirical article	To examine the influence of the new venture, the entrepreneur's social capital, and the firm performance on the new venture's knowledge acquisition activities.	The means by which new venture founders incorporate novel knowledge into their organizations.	Simulation methodology. 3 runs in 3 configurations. Statistical analysis, regressions, ANOVA, Post-hoc Bonferroni tests.	-	Dependent: Regional rate. Independent: Level of new venture formation.	The increase in the firm's knowledge acquisition has a positive impact on the survival of new ventures and the sustainability of entrepreneurship in a region.	To develop and test more realistic scenarios in the simulation, and qualitative and quantitative researches.
McKelvie et al.	2018	ENTREPRENEURSHIP THEORY AND PRACTICE	Empirical article	To address how perceptual differences of environmental dynamism explain differences between external and internal knowledge development for the continuous innovative efforts in new ventures.	The ability of a firm to acquire new knowledge.	Survey. Harmon's one-factor test. Hierarchical linear regression, correlations, and robustness test.	316 new ventures in the TIME sector in Sweden.	Dependent: New venture innovation. Independent: External market knowledge acquisition. Internal knowledge generation. Market dynamism and Technological dynamism.	The newer ventures invest in knowledge from the external knowledge, the more likely they are to continue their entrepreneurial activities and develop more new products. New ventures within the same industrial sector have different perceptions about the market and technological dynamism, these perceptions are important for understanding knowledge development processes.	New studies using a longitudinal design or panel approach in order to capture temporal differences in the length of time. Future researches involving decision making.
Dai et al.	2018	JOURNAL OF MANAGEMENT STUDIES	Empirical article	To examine how new ventures access and use knowledge from different external sources, and gauge the influence of these efforts on their strategic flexibility.	A mechanism for firms to acquire and integrate diverse and non-redundant knowledge.	Survey, ANOVA, correlations, multiple regressions. Aiken and West's (1991) procedure to decompose the interaction terms.	148 high-tech ventures in the Yangtze River Delta, China.	Dependent: Strategic flexibility. Independent: NPJ alliances. Loosely coupled external sources of knowledge. Moderator: Decentralization. Institutional support.	In new ventures, decentralization of decision-making and institutional support enhances knowledge integration. There are 2 ways in which new high-tech ventures may improve their strategic flexibility: by accessing information and knowledge, and new product development allancing.	Further research employing a longitudinal design with the use of archival data. New empirical studies considering other high-tech industries, environments, and characteristics.
Saemundsson and Candi	2017	TECHNOVATION	Empirical article	To investigate relationships between knowledge and opportunities in new ventures and how potential AC is related to the identification of opportunities in new technology-based firms (NTBFs).	To acquire, assimilate (potential AC), transform and exploit (realized AC) knowledge for innovation	Survey collected twice, one year apart. Three-step Hierarchical regression analysis, correlations, interaction diagrams.	94 NTBFs in Northern Europe	Dependent: Entrepreneurial opportunities. Independent: Problem absorptive capacity. Solution absorptive capacity.	Changes in problem AC were a stronger trigger for new opportunities identification than changes in solution AC.	More work is needed to improve measures of AC and to better understand the sources of the solution, problem and realized AC.

## Innovation cluster

AUTHORS	YEAR	JOURNAL	TYPE	AIM OF RESEARCH	RELEVANCE OF AC	METHODOLOGY	SAMPLE	VARIABLES	FINDINGS	FUTURE RESEARCH AGENDA
Dushnitsky, G; Lenox, MJ	2005	RESEARCH POLICY	Empirical article	Do firms that invest corporate venture capital (CVC) learn about and appropriate new technologies and practices from those ventures in which they invest?	The greater a firm's AC, the greater the marginal impact of CVC investment on firm innovation rates. The greater a firm's AC, the greater a firm's investment in entrepreneurial ventures will impact the firm's innovation rate.	Longitudinal panel study	2289 public firms that invested corporate venture capital or patented during 1969-1999.	DV: patent citations, IV: R&D Expenditures, negative binomial specification with the firm, sector, and year fixed and random effects and lagged independent variables.	The authors found that increases in CVC investment are associated with subsequent increases in future citation-weighted patenting rates. Furthermore, the magnitude of this effect depends on the firm's AC and the strength of intellectual property protection.	Future studies using other measures of AC (such as R&D expenditure).
Dushnitsky, G; Lenox, MJ	2005	STRATEGIC MANAGEMENT JOURNAL	Empirical article	What are the conditions in which firms are likely to pursue equity investment in new ventures as a way to source innovative ideas?	The greater a firm's cash flow and AC, the more likely it is to invest in new ventures.	Longitudinal panel study	1171 U.S. public firms during the period 1990-1999 60,444 firm-year-sector observation.	DV: annual Firm CVC investment in ventures IV: Firm Sector CVC, Tech, Opportunity, IP Regime, Complementary Assets Importance, Firm Cash Flow, Firm Patent Stock, Technological proximity, Firm Advertising, Firm Internal R&D, Firm Sue.	Ventures in industries with weak intellectual property protection and where complementary distribution capability is important are more likely to receive CVC. Cash flow has a positive effect on equity investment. Firms with greater AC are more likely to invest in new ventures.	Further researches aiming to analyze the latent interdependencies among the innovation strategies (e.g. internal R&D and CVC).
Wadhwa, A; Kotha, S	2006	ACADEMY OF MANAGEMENT JOURNAL	Empirical article	The study investigated the conditions under which CVC investments affect knowledge creation for corporate investors. What are the limits to knowledge creation from CVC investments? And when are these limits likely to manifest?	Access to new information through CVC improves the AC. However, there are limits to the amount of new knowledge that an investment company can absorb.	Longitudinal panel study	Telecommunications equipment manufacturing industry between 1989-1999, and Venture Xpert, the official database of the National Venture Capital Association 36 corporate entities 383 firm-year observations.	DV: successful patent applications for a firm in a year. IV: number of CVC investments; corporate investor's involvement; technological knowledge diversity CV: prior joint ventures, alliances, and mergers and acquisitions; prior patent stock of firm; firm age; knowledge relatedness between the investor and portfolio firms; the number of venture capitalists.	When investor involvement is low, the number of CVC investments has an inverted U-shaped relationship with innovation performance. When investor involvement is high, the relationship reverses, and an increase in investments boosts innovation.	Investigate other industries; examine why technological diversity did not moderate the relationship between CVC investments and innovation.
Filatovchev, I; Liu, XH; Wright, M	2011	RESEARCH POLICY	Empirical article	What is the impact of returnee entrepreneurs and their knowledge spillovers on innovation in high-tech firms in China?	AC moderates the innovation promoted by returnee entrepreneurs.	Longitudinal panel study	1318 high-tech firms in Beijing Zhongguancun Science Park between 2000-2003	DV: The number of patents per employee of the firm; the proportion of sales from new products IV: Skill intensity; Returnee spillovers; MNE's R&D activities CV: in-house R&D; firm age; firm size; ownership; export intensity; imported technology; industry R&D intensity.	Returnee entrepreneurs create a significant spillover effect that promotes innovation in other local high-tech firms that is moderated by the non-returnee firm's AC.	To compare the efficacy of the knowledge brought by returnee entrepreneurs versus the resources and knowledge of multinational enterprises in stimulating the development of emerging economies.
McAdam, M; McAdam, R; Galbraith, B; Miller, K	2010	R & D MANAGEMENT	Empirical article	What is the role and influence of the Principal Investigator (PI) in the Proof of Concept (PoC) process within a University Science Park incubator setting using an ACAP perspective.	How organizations acquire new knowledge and leverage it to achieve a competitive advantage.	Multiple case analysis of PoC; interpretive research philosophy.	UK university projects	-	PIs had good technical knowledge and ideas for applications but were lacking in commercial awareness and business reality. This lack of commercial awareness was found to be the most significant challenge to increasing ACAP within the USJ through the stakeholders using the PoC's routines and practices.	Mostly managerial recommendations, such as the suggestion that rules regarding ownership of patents and licenses should have more clarification to increase the entrepreneurial motivation of the PI's.

AUTHORS	YEAR	JOURNAL	TYPE	AIM OF RESEARCH	RELEVANCE OF AC	METHODOLOGY	SAMPLE	VARIABLES	FINDINGS	FUTURE RESEARCH AGENDA
Winkelbach, A; Walter, A	2015	INDUSTRIAL MARKETING MANAGEMENT	Empirical article	What is the interplay between AC, prior knowledge, and value creation.	AC moderates the interplay between complex knowledge and value creation. ACAP = prior technological knowledge.	Survey. Moderated hierarchical regression.	Database of 127 science-to-industry R&D projects in technology-based markets.	DV: transfer value IV: Knowledge attribute complexity, prior knowledge, absorptive capabilities, absorptive capabilities CV: tie strength, prior partnership experience, and structural characteristics.	Prior knowledge has no significant effect on value creation per se. Instead, the impact of complex technological knowledge on value creation is enhanced at high levels of both prior knowledge and structural characteristics.	Future studies can replicate our research using longitudinal designs, which could eliminate several biases including a potential hindsight bias. Additionally, future studies should integrate the dyadic perspective into science-to-industry technology transfer projects. Finally, it will be worthwhile to analyze our framework in other national contexts because cultural and context-related aspects can increase the influence of specific factors.
McAdam, R; McAdam, M; Brown, V	2009	R & D MANAGEMENT	Empirical article	To explore the Proof of Concept (PoC) process within a University Science Park Incubator as a means for improving the commercialization of University technology transfer using an AC perspective.	Importance of Absorptive Capacity on PoC outcomes.	Multiple case analysis; Interpretive research philosophy; semi-structured interviews.	16 PoC projects;	-	AC influencing factors such as levels of R&D investment, prior knowledge base, and integration of stakeholder and technology planning which impact the PoC outcomes.	Mostly managerial recommendations, such as outsourcing some include more PoC planning measures or programs aiming commercialization.
Marvel, M	2012	JOURNAL OF SMALL BUSINESS MANAGEMENT	Empirical article	Explore knowledge acquisition asymmetries in early venture development and how they are related to innovation creation.	AC as a control variable: aspects of prior knowledge and experience may relate to AC and the development of radical offerings.	Survey	166 founders of new technology ventures in university incubators	IV: Knowledge Acquisition. DV: Innovation Radicalness. Control Variables: nature of the venture's offering, experience depth, formal education, experience breadth, and physical sciences/engineering education.	Asymmetries in knowledge acquisition during early venture development are vital to innovation creation. Innovation radicalness was positively associated with acquiring knowledge of customer problems and markets. Acquiring knowledge of ways to serve markets was negatively associated with innovation radicalness. The fewer technology entrepreneurs know about comparable offerings in the market and how to develop them, the greater their chances of creating breakthrough innovations.	Future studies are encouraged to explore the multidimensional nature of knowledge and learning in explaining opportunity discovery, exploitation, and venture outcomes
Monferrer, D; Blesa, A; Ripolles, M	2015	EUROPEAN JOURNAL OF INTERNATIONAL MANAGEMENT	Empirical article	How market-orientated networks contribute to the development of adaptive, absorptive, and innovative knowledge-based dynamic capabilities in international new ventures (INVs)? (market orientation is defined as a strategic orientation established jointly by the different members in the business relations network)	The participation of INVs in market-orientated networks encourages their AC. Network market orientation makes a significant contribution to the development of AC in INVs.	Survey; structural equations modeling	303 firms founded after 2005 and with international activity	Variables: market orientation of the network and dynamic capabilities of the firms	The study shows the utility of the network market orientation construct. Knowledge derived from the firm's market-oriented networks, helps the firms to develop dynamic capabilities in order to act sustainably in their international markets.	Future studies that continue to analyze factors that can explain the international competitiveness of INVs.
Kamuriwo, DS; Baden-Fuller, C; Zhang, J	2017	JOURNAL OF PRODUCT INNOVATION MANAGEMENT	Empirical article	What are the coordination mechanisms, models, and approaches that are most effective at producing breakthrough innovations?	Search capabilities and AC of partners can be used when TBM's are undertaking fundamental research.	Longitudinal panel study	69 UK new biotechnology firms over 11 years.	DV: number of the firm's patents that turned out to be a breakthrough innovation; product development rate IV: Knowledge development made. CV: funds, VC backing, public stock listing, number of employees, number of alliances, technology type, therapeutic categories	External knowledge-development mode is associated with more breakthrough innovation and a faster movement of innovations to market.	Future studies will need to model the firms' choice of knowledge development modes directly and the antecedents to the knowledge development.

AUTHORS	YEAR	JOURNAL	TYPE	AIM OF RESEARCH	RELEVANCE OF AC	METHODOLOGY	SAMPLE	VARIABLES	FINDINGS	FUTURE RESEARCH AGENDA
Lee, SM; Kim, T; Jang, SH	2015	MANAGEMENT DECISION	Empirical article	To identify the circumstances under which CVC investment facilitates knowledge transfer from startups to investing firms	AC plays a critical role in facilitating knowledge transfer across organizations	Longitudinal panel study	29 investor firms that invested in entrepreneurial firms at least once during 1995-2005	DV: Amount of knowledge transferred through CVC investment IV: the number of CVC investments CV: Age/Size of the corporate investor; R&D intensity; Industry relatedness; Corporate investor's stock of patents; Economic cycles MV: Tie strength of CVC program; Knowledge diversification of the corporate investor	The relationship between the CVC investment and the level of knowledge transfer either diminishes or results in negative returns. The authors found out that corporate investors need a proper mechanism of knowledge transfer if they are to maximize the innovative outcome of CVC investment.	Future studies analyzing different regions and different environmental settings that may influence the design of CVC programs and their effects on knowledge transfer from the start-up to the investing firm. Additionally, a much wider range of time span should be used to examine the effect of CVC investment.

## Performance cluster

AUTHORS	YEAR	JOURNAL	TYPE	AIM OF RESEARCH	RELEVANCE OF AC	METHODOLOGY	SAMPLE	VARIABLES	FINDINGS	FUTURE RESEARCH AGENDA
WRL, P	2004	ENTREPRENEURSHIP AND REGIONAL DEVELOPMENT	Conceptual article	How entrepreneurial network activities can be measured and which indicators exist to quantify start-up success. What is the relationship between entrepreneurial networks and start-up success.	Networking abilities influence the AC of founders. Entrepreneurs will not be able to benefit from co-operations and information from network partners if they do not possess the necessary knowledge and the capacity to absorb the information in their own organization.	Theoretical Essay / Literature Review	--	--	The study reveals that the major shortcomings of existing network studies are found to be the neglect of different starting conditions, the focus on individual founders' networks instead of multiple networks in start-ups with an entrepreneurial team, and the assumption of a linear causal relation between networking and start-up success.	Future research studying the dynamics of networks, changes in network utilization, and measurable definitions for the different network types.
Zahra, SA; Hayton, JC	2008	JOURNAL OF BUSINESS VENTURING	Empirical article	Does the AC moderate the relationship between international venturing and company performance?	the importance of AC for achieving profitability and growth over international acquisitions and alliances.	Hierarchical regression modeling	217 global manufacturing firms	DV: profitability and revenue growth IV: international acquisitions and international alliances moderated by AC	AC moderates the relationship between international venturing and firms profitability and revenue growth.	It would be useful to document the various types of knowledge a firm might gain from international venturing and the specific types of knowledge associated with various approaches to international venturing
Deeds, DL	2001	JOURNAL OF ENGINEERING AND TECHNOLOGY MANAGEMENT	Empirical article	What is the relationship between a high technology venture's R&D intensity, technical capabilities and AC, and the amount of entrepreneurial wealth created by the venture?	AC is positively related to the amount of entrepreneurial wealth created by the venture.	Longitudinal panel study	80 pharmaceutical biotechnology companies, which went public between 1982 and 1993	DV: MVA (Market value added) IV: Research and development intensity; Technical development capability; Absorptive capacity CV: Hot markets, Number of employees	There is a positive relationship between a high technology venture's R&D intensity, late stage technical capabilities and AC, and the amount of entrepreneurial wealth created by a high technology venture.	Studies of entrepreneurial wealth creation in other technology and industry contexts in order to expand understanding. Further studies about the relationship between the R&D intensity, technical development capabilities and AC, and other measures of a high technology venture's performance, such as survival, growth, profitability, etc.
Benson, D; Ziedonis, BH	2009	ORGANIZATION SCIENCE	Empirical article	What are the beneficial effects of CVC investing on acquisition performance?	Information gained through CVC investing can be useful, but internal technological capabilities remain a critical determinant of success in innovation-driven acquisitions.	Longitudinal panel study	34 CVC investors in the IT sector that acquired a total of 273 startups between 1987 and 2003	DV: Acquisition Performance IV: CVC Intensity, Stability, Consecutive years investing in CVC, total years investing in CVC CV: Characteristics of the Acquirer, Characteristics of the Target and the Deal	As CVC investments increase relative to an acquirer's total R&D expenditures, acquisition performance improves at a diminishing rate. Firms consistently engaged in venture financing earn greater returns when acquiring startups than do firms with more sporadic patterns of investing, even controlling for firm profitability, size, and acquisition experience.	Future research should engage in utilizing more direct measures of a corporate investor's "reputation" within the external venture capital and startup communities. The authors suggest the following questions: Do CVC investors in the IT sector "learn more" from innovative startups because of the inability of startups and investors to safeguard technological know-how from expropriation? Are CVC investors in IT more actively seeking out innovative young companies as acquisition targets in response to competitive pressures within the industry?

AUTHORS	YEAR	JOURNAL	TYPE	AIM OF RESEARCH	RELEVANCE OF AC	METHODOLOGY	SAMPLE	VARIABLES	FINDINGS	FUTURE RESEARCH AGENDA
Newey, LR, Zahra, SA	2009	BRITISH JOURNAL OF MANAGEMENT	Empirical article	How collaborating companies use AC processes at operating and dynamic capability levels?	The authors propose AC as a key knowledge-based mechanism linking learning to product development and portfolio planning.	Case study, Interviews with 12 key informants	2 biotech companies	-	At the operating capability level, firms build AC in value networks during their product development experiences and this learning needs to be captured at the product portfolio planning level. Then, product portfolio planning acts as a dynamic capability reconfiguring operating capabilities based on beliefs about follow-on entrepreneurial opportunities. Under conditions of endogenous change, dynamic capabilities are guided by a proactive entrepreneurial logic, complementing the need for reactive adaptive responses in circumstances of exogenous change.	Future research could consider how interactions between portfolio planning and product development enables/constrains the AC of the organization in the face of exogenous shocks. Additionally, studies aiming to understand the traps associated with value network, AC as a linking mechanism between dynamic and operating capabilities, and how firms need to build their portfolio planning capabilities to better prepare for and/or limit the adverse impacts of exogenous shocks. Future researchers might engage a longer longitudinal study that tracks the interaction between these capability sets over multiple product development experiences and the resultant revisions that occur to the product portfolio.
Clarysse, B, Wright, M, Van de Velde, E	2011	JOURNAL OF MANAGEMENT STUDIES	Empirical article	How different characteristics in the technological knowledge base at start-up influence spin-off performance?	Importance of the knowledge in the same domain as the parent (university/corporate) for spin-off's growth.	Longitudinal panel study	48 corporate and 73 university spin-offs, comprising the population of spin-offs in Flanders during 1991-2002.	DV: venture growth IV: Scope, Necessity, Tacitness, Relatedness CV: firm age, number of employees, start-up capital of the spin-off, technological domain (industry)	Corporate spin-offs grow most if they start with a specific narrow-focused technology sufficiently distinct from the technical knowledge base of the parent company and which is tacit. The novelty of technical knowledge does not play a role in corporate spin-offs but has a negative impact on university spin-offs unless universities have an experienced technology transfer office to support the spin-off.	Expand the research to other geographical regions, incorporating different institutional contexts; conduct a longitudinal design detailing the changes in the scope of technology; research the role of social capital and networks provided by the parent organization or considered the nature of the relationship with the parent organization.
Wales, WJ, Parida, V, Patel, PC	2013	STRATEGIC MANAGEMENT JOURNAL	Empirical article	What is the nature of the relationship between ACAP and financial performance?	AC x Financial performance trade-off	Survey, one-factor analysis	285 Swedish small- to medium-sized enterprises	DV: growth IV: ACAP, EO CV: Firm age, size, productivity growth, equity ownership, geographical focus, market sector	There is indirect evidence associated with ACAP that produces an inverted U-shaped relationship with financial performance and that Entrepreneurial Orientation (EO) may enhance returns to investments in ACAP.	Research on other industry sectors; studies making a direct cost measure.
Simssek, Z, Heavey, C	2011	STRATEGIC ENTREPRENEURSHIP JOURNAL	Empirical article	How corporate entrepreneurship (CE) contributes to extending the firm's knowledge-based capital and its performance.	CE enables ACAP of SME enterprises. CE governs firm performance as a dynamic capability by reconfiguring, extending, and modifying the firm's knowledge-based resources	Survey, Confirmatory factor analysis to validate the scales; cross-sectional design	TMTs of 125 firms	DV: Firm performance IV: the firm's pursuit of CE (firm's pursuit of innovation, venturing, and strategic renewal); Knowledge-based capital (human, social and organizational capital)	The pursuit of CE enhances the firm's knowledge-based capital residing in people (human capital), relationships (social capital), and systems (organizational capital). CE is mediated by capital type.	Other studies examining CE effects and the mediator role of knowledge-based mechanisms and performance.
Zheng, YF, Liu, J, George, G	2010	JOURNAL OF BUSINESS VENTURING	Empirical article	How do the effects of innovative capability and inter-firm network attributes on valuation vary with firm age?	A heterogeneous network provides access to diverse information flows and, consequently, provides the opportunity to absorb external information. ACAP is positively influenced by a heterogeneous network.	Longitudinal panel study	170 biotechnology start-ups	DV: Firm valuation IV: Innovative capability CV: Market condition, Biotech firm density, Geographic area, Technological field, Public company, Total alliances, Equity alliances	The relative value of network status declines while the impact of innovative capability increases with firm age. Furthermore, there is a growing complementary effect of innovative capability and network heterogeneity on firm valuation.	The authors suggest the following questions: What happens to the effects on firm valuation in the long run? Does the capability/network effect reach a plateau effect after increasing or declining when routine development and information accumulation reach their equilibrium stage when new routines or information contribute little to firm value? Or do firm capabilities undergo a life cycle with periods of growth and decline?

AUTHORS	YEAR	JOURNAL	TYPE	AIM OF RESEARCH	RELEVANCE OF AC	METHODOLOGY	SAMPLE	VARIABLES	FINDINGS	FUTURE RESEARCH AGENDA
Rhee, JH	2008	ASIAN BUSINESS & MANAGEMENT	Empirical article	What are the determinants of entry mode choice and internationalization performance of new ventures?	To match the information-processing requirement inherent in firm internationalization, employees need to have a corresponding information-processing capacity.	Survey	95 Korean venture firms that had international operations	DV: Entry mode, performance IV: Competitive advantages based on technology, Start-up team members' social network, Employees' absorptive capacity CV: Firm size	The results indicate that the AC of employees is not as important as the social networks of start-up team members in determining entry mode in international expansion. Social networks of start-up team members do not help their ventures reap superior performance.	Further theoretical perspectives need to be applied to better understand the internationalization of new ventures.
Nielsen, K	2015	JOURNAL OF TECHNOLOGY TRANSFER	Empirical article	What is the importance of human capital for industry choice and subsequent performance of first-time entrepreneurs?	Individuals with higher levels of education are expected to be better at adapting to a changing environment because of their higher absorptive and learning capacities.	Survey, OLS regressions, ordered logit model (OLM)	1,151 individuals starting new ventures in 133 different industries	DV: New venture performance IV: Human capital CV: Tolerance of ambiguity, Creativity, Social capital, Wealth and initial investment	Technical academics are found to perform better in both profitable and uncertain industries, whereas non-technical academics perform better only in profitable industries. Both types of academics are more likely to enter uncertain industries.	Further research might explore the causes of the differences in performance between technical and non-technical academics in uncertain industry environments with the intention of improving university entrepreneurship policy and education. Exploring the relationship between higher education in different fields of study and the adaptive capabilities, causal/effectual reasoning regarding the start-up process, intrinsic/extrinsic work values, and entrepreneurial opportunity costs would be valuable.
Javalgi, RG; Hali, KD; Cavusgil, ST	2014	INTERNATIONAL BUSINESS REVIEW	Conceptual article	How sales representatives can contribute to or even largely fulfill the research function?	The degree to which AC contributes to producing a meaningful and valuable knowledge advantage for the firm.	Literature Review, Conceptual model	–	–	The authors propose that international sales performance for firms practicing corporate entrepreneurship will be enhanced when salespeople practice customer-oriented selling and the firm's absorptive capacity is stronger.	Empirical testing of the conceptual model. Additional opportunity lies in the investment of the incentive and control structures that would best balance salesperson independence with customer-oriented selling and information sharing.
Un, CA	2011	INTERNATIONAL JOURNAL OF TECHNOLOGY MANAGEMENT	Empirical article	How existing capabilities influence new entrepreneurial technological capabilities, and in what way the existing capabilities affect the development of new technological capabilities.	AC enables the development of new knowledge.	Survey	1,215 manufacturing firms operating in Spain	DV: development of new technological capabilities through investments in R&D IV: the capability to invest and the capability to absorb CV: firm's size, experience in business, and industry.	Prior capabilities to invest and to absorb enable the firm to develop new technological capabilities. The capability to absorb affects both types of investment, the capability to invest only affects external investments in R&D.	Further analyses about the origin of the resources and capabilities, how they are developed, and why competitors cannot imitate them.

### Abstrakt

**Cel:** Kilku uczonych wskazało, że zdolność absorpcyjna (AC) ma kluczowe znaczenie dla procesu innowacji w dużych firmach. Jednak wielu innych autorów uważa start-upy za kluczowe czynniki napędzające innowacje w obecnej gospodarce światowej. Dlatego niniejszy artykuł ma na celu określenie, w jaki sposób koncepcja AC została potraktowana w kontekście nowego przedsięwzięcia. **Metodyka:** Systematyczny przegląd literatury analizujący 220 artykułów opublikowanych w latach 2001–2018. **Wyniki:** Systematyczny przegląd literatury identyfikuje trzy grupy badań dotyczących AC w start-upach: wiedza, innowacje i wyniki wraz z głównymi autorami dyskusji, głównymi wkładami, odniesienia teoretyczne i wytyczne dotyczące ich przyszłego programu badawczego. **Implikacje dla teorii i praktyki:** Niniejsze badanie wnosi wkład do literatury dotyczącej innowacji i przedsiębiorczości łącząc znaczenie AC i tworzenia nowych przedsięwzięć oraz zapewniając lepsze zrozumienie, w jaki sposób przedsiębiorcy mogą usprawnić swoje procesy innowacyjne. **Oryginalność i wartość:** Na podstawie analizy przeglądu literatury stworzono ramy różniące strategie pozyskiwania wiedzy dla nowych przedsięwzięć. Ramy kategoryzują strategie według

*źródła wiedzy (tj. wewnętrznego lub zewnętrznego) oraz stopnia intencjonalności (tj. formalnej lub nieformalnej).*

**Słowa kluczowe:** *innowacje, chłonność, startupy, nowe przedsięwzięcia, przedsiębiorczość.*

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## **Conflicts of interest**

The authors declare no conflict of interest.

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# Social entrepreneurship as a collaborative practice: Literature review and research agenda

Sunna Kovanen<sup>1</sup> 

## Abstract

**Purpose:** The aim of this article is, firstly, to explore and structure the emerging research on collaboration in social entrepreneurship, and secondly to tackle the identified gaps in the literature with a research agenda based on the communities and networks of practice theory. **Methodology:** The article relies on a systematic literature review, which summarizes the existing evidence base and critically evaluates major theoretical approaches. The analytical focus is on ambiguity and scales of collaboration. **Findings:** Three main research strands have been identified: first, community and public sector collaboration focusing on the participatory initiation of services by local communities; second, collaboration for resources and employment focusing on power relations between established organizations; and third, network- and micro-level collaboration focusing on collaborative governance of complex networks. A vaguely contextualized and non-critical approach to social entrepreneurship remains prominent; however, recent studies on community and network collaboration present nuanced approaches to scalarity and ambiguity. **Implications for theory and practice:** Existing research could benefit from explicit and broader theorization of collaboration, the analysis of ambiguous experiences and contexts and attending to the interplay between daily practices and larger-scale institutional change. The paper presents a compiled reference base and gives directions about future research and practice re-thinking social enterprise as a collaborative endeavor. **Originality and value:** The article contributes to social entrepreneurship studies by structuring the field and enhancing critical theory on the topic.

**Keywords:** social entrepreneurship, social enterprise, cooperation, collaboration, communities of practice, networks of practice

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## INTRODUCTION

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As critique on the discourse of individual social entrepreneurs increases, some recent scholarship has turned the focus on social entrepreneurship as a collaborative endeavor (de Bruin, Shaw, & Lewis, 2017; Montgomery, Dacin, & Dacin, 2012). Collaboration is claimed to explain both the success of some enterprises (Borzaga & Galera, 2016) as well as the risk of the mission drift of others (Kwong, Tasavori, & Wun-mei Cheung, 2017). Studying collaborative processes has deconstructed the myth of heroic leadership (Stubbs & Vidović, 2017), has revealed its reliance on peer-networks and grassroots mobilizing (Richter, 2018), and has underlined the interdependency of collaboration and ethics in economy (Bachnik & Szumniak-Samolej, 2017). This emergent scholarship relies on a myriad of theory fields with established traditions as well as diverse new conceptualizations and applications. The aim of this study is to support the prospective research endeavors by providing an overview of state of the art and increasing conceptual transparency between different approaches (Tregear, 2011). This is done firstly through conducting a systematic literature review (SLR) on collaboration in social entrepreneurship, with the focus on Europe. Secondly, a new research agenda with the communities and networks of practice theories (Brown & Duguid, 2001; Wenger, 2008) is suggested. The review answers the following research questions (RQ):

*RQ1: What do we know empirically about collaboration and which theories have been applied in social entrepreneurship research?*

*RQ2: How have ambiguity and scales of collaboration been approached so far?*

*RQ3: What are prospective directions for future research?*

It will be argued that an emerging paradigm shift towards collaborative processes can be identified and empirical knowledge exists especially in the fields of village-based engagement and institutional resource collaboration. However, there is room to improve the political, analytical, and geographical rigor of the research, and this article suggests approaching the gap with a practice approach.

Although early social entrepreneurship literature has received criticism for its “monological” (Cho, 2008, p. 36) and “neoliberal” (Mauksch, 2012, p. 157) approach, it still features among the most cited works. Thus, a critical review of the knowledge base is required to overcome this inheritance. Social entrepreneurship has been defined as an individual skill and character (Christmann, 2014; Forster & Grichnik, 2013; Thompson, 2008), driven by leaders with “a passion...and a strong ethical fiber” (Mair & Martí, 2006, p. 38).

Dey and Steyaert (2010) describe this discourse as a messianistic celebration of managerial thought, which renders exploitative structures as simple market-based problems (Dacin, Dacin, & Matear, 2010) and people dealing with them as passive victims. Equally criticized has been the frequent reliance on anecdotal empiric work with idiosyncratic case studies (Mair & Martí, 2006), often derived from private foundations (Nicholls, 2006; Olinsson, 2017) who have their own business-case in celebrating social entrepreneurship. Even though the quality of the empirical work has been increasing, social entrepreneurship is still usually studied from the perspective of one single leader (Dey & Teasdale, 2016; Muñoz, 2010) and with interviews conducted with the leaders only (Kimmitt & Muñoz, 2018; Shaw & Carter, 2007; Tracey, Phillips, & Haugh, 2005).

Therefore, this review aims at expanding this canon by approaching social entrepreneurship as a collaborative, ambiguous, and multi-scalar endeavor. Focus on ambiguity in collaboration serves to reveal whether the calls to broaden the rational and overly positive research approach have been applied (Dart, 2004; Dey & Steyaert, 2012). The second focus is inspired by the critique on inadequate analyses of the spatiality of social entrepreneurship (Amin, Cameron, & Hudson, 20020; Bacq & Janssen, 2011; Muñoz, 2010). This approach contributes to the studies on social enterprise networks (Dufays & Huybrechts, 2014; Littlewood & Khan, 2018) without focusing on them explicitly, as qualified work on this field has already been conducted. Furthermore, studies on networks tend to rely strongly on social network theory (Littlewood & Khan, 2018) and focus on organizations' and individuals' network constellations instead of on their actual making. Therefore, a precise focus on collaboration covering diverse theories on the field was considered relevant.

Finally, it is argued that the critical elements of the communities and networks of practice approach provide previously overlooked and underdeveloped potential for the emerging research field (Contu & Willmott, 2003). Theory's attention to mundane collective practices and lay work helps to understand the processes and resources of social entrepreneurship, as Dacin, Dacin, and Matear (2010, p. 201) have proposed in their classic article, but remaining in their empirics on the level of "Skoll's proven track record."

The article is structured as follows. The next section describes the selection and analysis process of the material. The three following sections present the content of the review grouped into three major strands of research: The first section presents research on Community and public sector collaboration (21 articles). The second section discusses Collaboration for resources and employment (15 articles), and the third tackles research

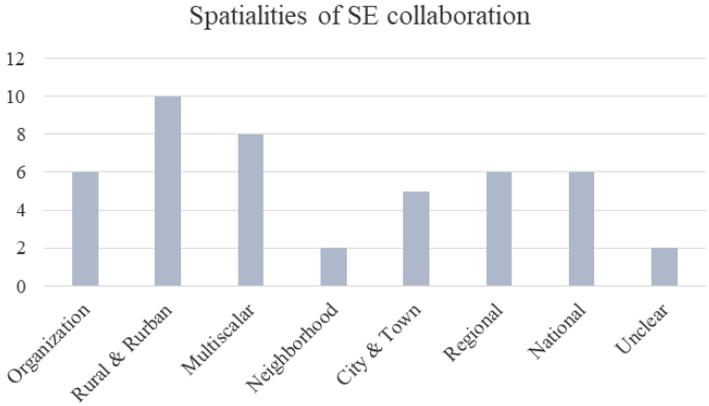
on Network- and micro-level collaboration (10 articles). Each begins with a figure summarizing the empirical results, in order to support reading and to provide a collective reference base for the results. The figures contain, in summary, the main drivers, outcomes, hindrances, practices of collaboration identified within each strand. The overall results on collaboration are summarized in the section six. The seventh section presents the communities and networks of practice literature and proposes research questions based on four selected concepts within the theory. The article ends with a summary of the contribution of this text to the research field.

## **Methodological proceeding**

The research followed the Systematic Literature Review method (SLR) according to the guidelines of Petticrew and Roberts (2007). According to the authors, an SLR is useful for synthesizing and evaluating large amounts of empirical data in a transparent manner and thus highlighting needs for further research. The research was conducted between March and April 2019, based on the following steps (Petticrew & Roberts, 2006).

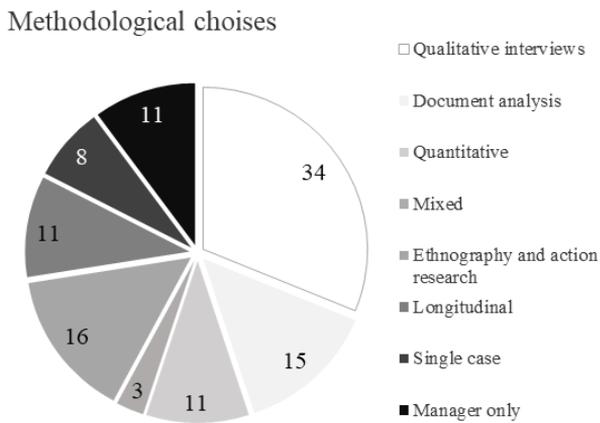
- 1) Defining the scope and conducting the search: The articles have been sampled with the Web of Science and SCOPUS (Elsevier) databases, which are among the largest multidisciplinary sources in social sciences. Articles were searched with 'social AND entrepreneurship' or 'social AND enterprise' in the title and with 'collaboration,' 'cooperation,' 'collaborative' OR 'collective' in the abstract. Apart from the operators, automatic search filters were applied to limit the search to peer-reviewed, English-language journal articles. The result comprised of 332 abstracts with 15 duplicates.
- 2) Defining inclusion and exclusion criteria: The abstracts were evaluated according to the following inclusion criteria: 1) Their main results and theoretical discussion handle collaboration. 2) Social entrepreneurship is studied as a specific and independent field, instead of, e.g. entrepreneurship education or institutional entrepreneurship. 3) Excluded were conference papers, editorial letters and book chapters, as well as articles with a focus on Bottom-of-Pyramid markets. The selection included 104 articles. As a conceptual starting point, the author refers to the definition of Phillips, Lawrence, and Hardy (2000), according to whom "collaboration involves the negotiation of roles and responsibilities in a context where no legitimate authority is sufficient to manage the situation" (p. 26), excluding purely contractual or competitive relationships.
- 3) Limiting the selection based on quality: The text of the articles was reviewed and selected with the following inclusion criteria: 1) The

- articles had a robust methodology, i.e. they described methods used, criteria of sampling, amount of data, and argumentation for the choices.
- 2) Empirical data is from a European or comparable context, meaning that some articles (5) from North America, such as George and Reed (2016), from Latin American countries (Kimmitt & Muñoz, 2018), and New Zealand (Newth, 2016) were chosen. Narrowing the spatial focus helps to avoid overly generalized and universalized claims on social entrepreneurship, criticized by Dey and Steyaert (2010, p. 89). However, it recognizes the diversity of realities behind spatial categories such as 'North' and 'South,' and the relevance of lessons that European-focused knowledge may learn from those (Lewis, 2017). This final selection resulted in 41 texts. Finally, five empirical articles most cited by the systematically selected texts and eligible according to the selection criteria were added: Tracey, Phillips, and Haugh (2005, 2007), Shaw and Carter (2007), Jack and Anderson (2012) as well as Battilana and Dorado (2010). Thus, the total number of texts is 46.
- 4) Synthesizing and analyzing results: The texts were analyzed with a simplified qualitative content analysis method, according to Mayring (2010). Firstly, three different research strands were identified according to their different theoretical foundations and empirical focus. Secondly, more detailed empirical findings were identified from the whole literature base and were manually coded under seven categories describing collaboration in order to find the most supported empirical evidence. Finally, the empirical findings were linked with the specific strand, in which they were most discussed. The categories were identified with a combined inductive and deductive method. The categories of drivers, conditioning elements and practices of collaboration emerged inductively during the analysis. Drivers were mentioned as such in some texts (Smeets, 2017), but it also covers results about 'motivations' of collaboration discussed in others. Categories of hindrances, negative experiences and outcomes of collaboration emerged deductively from the overall conceptual approach on ambiguity of collaboration, and categories were combined and adjusted in the course of the analysis. In the graphics, the font size of the empirical results indicates their relative frequency in the texts. However, the categorization should not be understood as exclusive or exhaustive, but rather as an informed interpretation of the subject. Decisions on how to classify articles and evidence, which could relate to several strands or categories, have been made considering the coherence of the strands and contents as a whole. In the analyzed texts, the most frequent spatial context has been the United Kingdom (14 articles), and especially Scotland within it. Based on the applied spatial lenses (Figure 1), collaboration is most frequently observed in rural spaces and rural-urban networks ('rurban,' 3 articles) and within the community- and network collaboration strands.



**Figure 1.** Spatialities of SE collaboration

Furthermore, texts with a rural, urban, or multiscalar focus commonly analyze the spatial and geographical aspects of collaborative processes, whereas in many other texts, the spatial frame is only briefly mentioned as a methodological choice. Texts with a national focus commonly analyze the institutional and political framework of collaboration. Qualitative interviews are the most used method in the sample, but ethnographic methods in diverse intensities are rather frequently used as well (Figure 2). Despite the pleas to diversify the empirical research base (Dacin, Dacin & Matear, 2010), reliance on single case studies is still fairly common. In addition, in 11 out of 46 articles, only managers have been interviewed or surveyed.



**Figure 2.** Methodological choices

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**LITERATURE REVIEW**

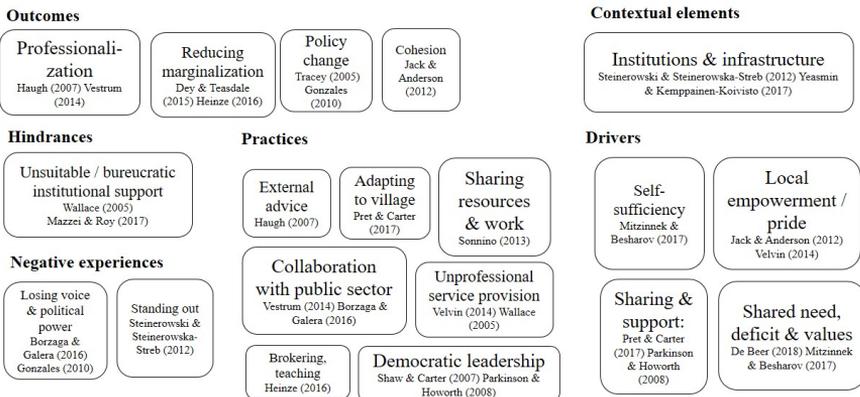

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**Community and public sector collaboration**

The first presented research strand is community collaboration (Figure 3). Relying on rural sociological theories on social capital, social networks and embeddedness, the authors focus on the production of public services by and with village residents. The authors ask questions about the embeddedness of social enterprises (SE) into their communities (Vestrum, 2014), the influence of embeddedness on enterprises' social responsibility (Pret & Carter, 2017) and about the relationships between SEs, villagers, service users, and the public sector (Borzaga & Galera, 2016). The authors confirm that good relationships with the residents and their inclusion into the endeavor are essential for the success of establishing new service enterprises in rural areas. In addition, they emphasize the strong influence of different structures and institutions in the diverging local conditions of entrepreneurship. However, a nuanced understanding of scales tends to be lacking, especially in the conceptualization of the 'community,' and public sector collaboration is often discussed in rather simplified terms as well.

**Summary of empiric results in community collaboration literature**

General condition: existing networks


**Figure 3.** Community- and public sector collaboration

Typical applications of the more structural direction of this strand include those of Jack and Anderson (2002), Vestrum (2014), and Steinerowski and Steinerowska-Streb (2012). The community collaboration of SEs is described as a “rural ethos’ and self-help [which] gathers people together” (Steinerowski

& Steinerowska-Streb, 2012, p. 173) and a process, in which “through local social contacts, entrepreneurs feel connected to and embedded in their neighbourhoods” (de Beer, 2018, p. 465). Thus, continuation of the typically local social structure is the foundation and the goal of entrepreneurship (Jack & Anderson, 2002; Pret & Carter, 2017). Identified drivers include pride and faith in the region as well as a genuine and shared need for a missing service (Borzaga & Galera, 2016; Haugh, 2007; Velvin, Bjørnstad, & Krogh, 2016). After identifying the need, its fulfillment requires a certain amount of community ownership (Haugh, 2007; Vestrum, 2014). The social entrepreneur seems to maintain a central position as a teacher or ‘democratic leader’ of the venture, who works with and for the participants (de Beer, 2018; Dey & Teasdale, 2016). As Parkinson and Howorth (2008, p. 298) put it, “the first person agency comes in and out of focus against the backdrop of community and collective agency.” As a result, community collaboration in social entrepreneurship may enhance social cohesion and the quality of services, if the new services become better adjusted to the local conditions. Practices of collaborative service provision, in turn, tend to develop from participatory and unprofessional towards professional over time.

This research strand has, however, certain repeating problems. Firstly, the concept of community is rarely defined, but in between the lines, it usually refers to the residents of one village embedded in one, single social structure. This approach has been criticized by Gibson-Graham (2006), who provides references to a small number of articles in this review. They claim that this language provokes a “commonality of being, an ideal of sameness,” which leads to “putting the cart of common substance, it would seem, before the ethical and political horse” (Gibson-Graham, 2006, p. 125). Mitzinneck and Besharov (2018), instead, take a more nuanced view in their recent article on volunteer-based energy cooperatives. The authors explore tensions emerging between cooperative members only *after* they have defined their shared needs. As a solution, the cooperatives either push the most controversial projects to a later stage, allow different members to support different sub-projects or accept only projects enjoying a full consensus.

Secondly, studying community collaboration as a foremost local social structure presents the space of the enterprises as a self-confined and stable entity (Haugh, 2007; Shaw & Carter, 2007; Sonnino & Griggs-Trevarthen, 2013). For example, Steinerowski and Steinerowska-Streb (2012, p. 170) point out the specific challenges of rural structures for entrepreneurship, such as low accessibility and distances, but position these as a binary against an idealized ‘urban’ structure. This fixation on local or unified scale is fruitfully criticized by some recent studies, such as Pret and Carter (2017), who describe craft

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entrepreneurs' simultaneous embeddedness in both the villages they live in as well as in their creative and multi-scalar, professional communities.

Thirdly, the faith in local communities is especially problematic if it remains blind to the political and institutional power entangled in collaborative relationships. Authors such as Haugh (2007) and Heinze, Banaszak-Holl, and Babiak (2016) mention the involvement of local politicians in the enterprise without specifying whether it has been adequate and constructive. Furthermore, Shaw and Carter (2007) describe deficits in public service production as opportunities. According to Wallace (2005) and Parkinson and Howorth (2008), however, this language transfers corporate logic and values from national politics into the social entrepreneurship sector, disarming the actors from their radical potential and transforming them as players in neoliberal politics. Mazzei and Roy (2017) and Borzaga and Galera (2016) describe the effects of such public sector collaboration. In Borzaga and Galera's (2016, p. 39) case the "close relations that social cooperatives have established with public agencies have strongly hampered their degree of autonomy." Social cooperatives have managed to advocate a new legislation on social procurement, but the resulting regulations have pushed the cooperatives to serve the median voter and neglect the more marginal or unmet needs they originally emerged to serve. In addition, Borzaga and Galera, and Gonzales (2010) describe how corruptive relationships were overcome by the cooperatives.

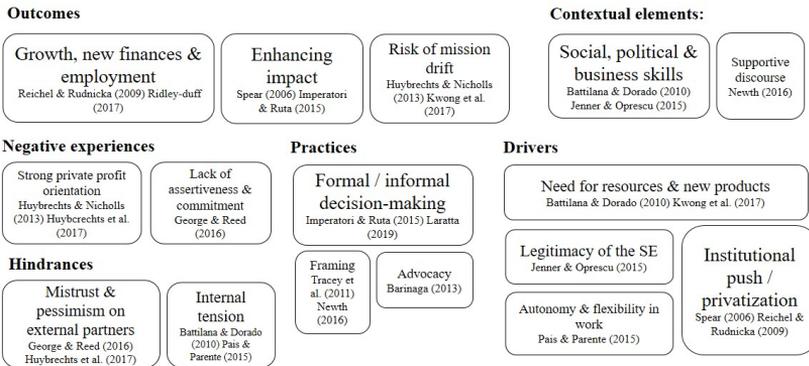
To summarize, despite the forward-looking motivations of local service producers to help their peers in need, community collaboration is not entirely seen as an endogenous process. The existing infrastructure and the relationships with the public sector alike, condition social entrepreneurial processes strongly. Especially areas remote from the major markets and with market-oriented public policy exhibit less vibrant community collaboration, regardless of the pursuits of the grassroots actors (de Beer, 2018; Steinerowski & Steinerowska-Streb, 2012). If community ventures make it through the challenging early years, they may succeed in professionalizing bottom-up production. This seems to require supportive leaders, who identify strongly with their participants. In the long run, community ownership tends to decrease together with participants' trust in public policies, if the public support system is not responsible and flexible enough to the SEs' holistic approach. Nevertheless, public sector collaboration is a frequent means to ensure the long-term operation of small, bottom-up SEs. Such institutionalized relations are at the focus in the next strand.

## Collaboration for resources and employment

The second research strand discusses collaboration for resources and employment (Figure 4), with the majority of the texts relying on organizational (Imperatori & Ruta, 2015; Pais & Parente, 2015) and institutional theories (George & Reed, 2016; Huybrechts & Nicholls, 2013; Huybrechts, Nicholls & Edinger, 2017).

### Summary of empiric results in collaboration for resources and employment

General condition: existing networks



**Figure 4.** Summary of empiric results in collaboration for resources and employment

In general, these studies focus on the relevance of collaboration for attaining new resources for the organizations, and the management of diverging stakeholder interests in the process. The authors ask questions about the ways of organizing work and decision-making (Imperatori & Ruta, 2015; Ridley-Duff, 2009) and about the relationships of power, autonomy, and impact between SEs and resource providers (Kwong, Tasavori, & Wunmei Cheung, 2017; Laratta, 2009). Unlike in previous strands, the institutional literature provides an explicit theory and conceptualization of collaboration. Although this increases the analytic understanding of the ambiguity in stakeholder relations, the functional and rational foundations of the theory remain largely unquestioned. According to the results, collaboration is often driven by request for new resources, bearing a risk for conflicts of interest, especially if the partners' power positions and values differ greatly from one another. Several authors approach collaboration as a multiscale phenomenon affected by the institutional environment, whereas micro and material spatiality remains largely unobserved.

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Most illustrative articles discussing resource relations are those of Kwong, Tasavori, and Wun-mei Cheung (2017), and Huybrechts and Nicholls (2013). In their framing, the SEs' main driver for collaboration is to gain more resources to pursue their own ends, such as increasing their impact and influence over other actors. Resource holders, in turn, are drawn to collaborate with SEs due to the legitimacy of the latter as the representatives of their beneficiaries (Jenner, 2016; Newth, 2016). Kwong, Tasavori, and Wun-mei Cheung (2017) have comprehensively described the ambiguities related to this in their interviews with nine SEs in the UK. They classify SEs' resource collaboration relationships as dormant, complementary, collaborative, and dominant. The first three types support a SE in its original mission, developing commonly between other organizations such as charities, whose values are in line with the SE. In dominant resource relationships, a public or private partner holds a crucial share of the SEs resources, and is keen on having a say about its use. The latter type of relationships bears the strongest risk of mission drift, although they may result in organizational and financial growth as well. This model is supported in its different aspects by Huybrechts and Nicholls (2013), Huybrechts, Nicholls, and Edinger (2017), Laratta (2009), and Newth (2016). The aforementioned report about "the frightening" power of supermarkets (Huybrechts, Nicholls & Edinger, 2017, p. 597) in their collaboration with Fairtrade SEs and about the pioneering, alternative trading structures created as a response. In other cases, SEs engage in the practices of advocacy, framing and negotiation to overcome such constraints on their mission. Finally, Newth's (2016) case is an example of a collaborative resource relationship, where the resource holders' impact on the SE's work is described as "positive resistance" (p. 389), which rather "refines the innovation" than hinders it (p. 389).

Even though these findings diversify the overly positive picture presented by community collaboration scholars, several authors rely on resource dependency and related theories with a rational and functional approach (Bauer, Guzmán & Santos, 2012; Jenner, 2016). In this line of thinking, organizations treat their partners "instrumentally and as subordinate to their individual goals but willing to engage in reciprocal favors to achieve those goals" (Dunham, 2010, p. 520). Battilana and Dorado (2010), for example, describe how workers in their 'successful' case study tried to "embarrass or convincingly threaten [micro-lenders] to pay" (p. 1424) without reflecting the ethics of such practice. This framing leaves no room to consider that the actual organizational benefit may be only realizable in an ethical and affective bond or collective identification with others (Wynne-jones, 2017). Newth (2016), instead, describes the resource-dependency-relationship as a shared sensemaking process, but a rational take prevails in his description of the

entrepreneurs' actions. The entrepreneurs "refine their innovation to make them sufficiently attractive to institutional donors" (Newth, 2016, p. 389), never showing a hint of uncertainty or illogicality. Critical reflection, especially about the actual change-agency behind the superficial case descriptions and a few quantitative variables, is missing also in both Jenner's (2015), Reichel and Rudnicka's (2009) as well as Bauer, Guzmán, and Santos's (2012) texts.

Other authors, however, give a more socially nuanced insight, especially into the intra-organizational collaboration. For example, according to Pais and Parente (2015), Spear (2006), and Imperatori and Ruta (2015), collaboration is driven by the nature and value of the collaborative work in itself. Workers appreciate both autonomy and flexibility in their personal tasks as well as support from their team or a larger network "Thus, work becomes a central opportunity for personal growth, for taking on responsibility and for joining in and identifying with life in a community" (Imperatori & Ruta, 2015, p. 338). Autonomy in these framings is close to the definition of Wynne-Jones (2017) as freedom "from dictates of corporate or legislative actors ... by being interdependent through cooperation" (p. 262). Furthermore, Imperatori and Ruta (2015) and Kwong, Tasavori, and Wun-mei Cheung (2017) imply that intrinsic motivations of collaboration and beneficiaries' active participation seem to be nourished by participatory and informal, rather than managerial and formal organizational practices. However, according to Battilana and Dorado (2010), informality in hiring procedures bears a risk of nepotism. Other than that, the actual organizing practices are rarely studied in depth. Pais and Parente (2015) as well as George and Reed (2016) highlight that especially the lack of assertiveness of some long-term participants may be frustrating for the more innovation-driven leaders.

Finally, in terms of scalarity, some authors blend or ignore the material, historical and institutional context of their cases altogether and thus strengthen the criticized image of social entrepreneurship as a universally successful solution (Jenner, 2016; Kwong, Tasavori, & Wun-mei Cheung, 2017; Pais & Parente, 2015). Therefore, this strand also has the weakest spatial analytics. Scales are addressed as different power positions between organizations with or without an institutional context but rarely as material and spatial arrangements. For example, Newth (2016) and Laratta (2009) describe how specific legislations as well as institutional and political heritages in different countries have contributed to different regional patterns of collaboration. Spear (2006) and George and Reed (2016), in turn, describe how their cases emerged in changing institutional environments due to privatization, funding cuts, or unemployment.

To summarize, ambiguity in organizational collaboration emerges from participants' various needs for resources and values of collaboration.

Especially if a SE is dependent upon a strongly established organization, it can benefit from growth by using the resources from its partner but can run into mission drift. Articles on resource collaboration rely on and develop especially the institutional and bricolage theories, which serve the analysis of strategic inter-organizational relationships amongst institutional forces well. The authors avoid conflating local scale with successful collaboration but tend to discuss it as a straightforward and uncontextualized process, instead. An internally collaborative way of working is an important motivation in itself to participate in SEs. Meaningfulness emerges especially from the combination of supportive, participatory and flexible organizational practices, which have received, however, only limited attention in the literature so far. Many authors overlook these potentials and challenges of internal collaboration altogether in their reliance on a rational and non-relational approach to organizations. The literature on network collaboration takes this aspect a step further.

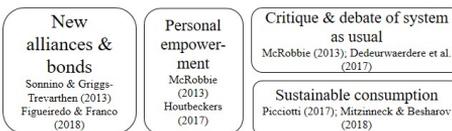
## Network- and micro-level collaboration

The third research strand expands the focus from communities and organizations to regional and multi-stakeholder networks (Figure 5). These texts discuss how innovation, ecological solutions and collaborative decision-making are learned and spread in the fields of agriculture, music and media, and work integration.

### Summary of empiric results in the network collaboration literature

General condition: existing networks

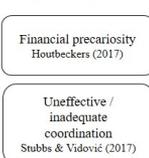
#### Outcomes



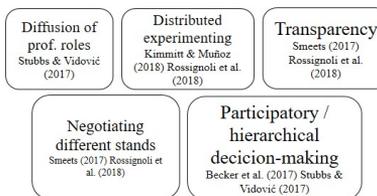
#### Contextual elements



#### Negative experiences



#### Practices



#### Drivers



**Figure 5.** Summary of empiric results on network- and micro-level collaboration

Typical questions in this section address cooperatives' impact on the region and environment (Figueiredo & Franco, 2018; Picciotti, 2017), development and functioning of a collaborative decision-making network (Dedeurwaerdere et al., 2017; Smeets, 2017; Stubbs & Vidović, 2017) as well as lived practices of social entrepreneurship (Houtbeckers, 2017b; McRobbie, 2013). In comparison to previous strands, these studies aim at explaining how different networks, scales and political geographies are intertwined in the collaborative processes across and beyond formal boundaries. Collaboration with civil society and the importance of information and communication technologies gain stronger attention. Both ambiguity and scales of collaboration are the most elaborately analyzed in this research strand. The accounts of power and privilege at a micro-level as well as their linkage to the possible changes in large systems, remain intriguing but are so far mostly disconnected arenas for future inquiry.

Illustrative examples of this strand are authored by Stubbs and Vidović (2017) and Rossignoli, Ricciardi, and Bonomi (2018). They describe collaboration as a "collective learning process" (Rossignoli, Ricciardi and Bonomi, 2018, p. 423) with "intrinsic fragility" (p. 427) or as a "complex relationship between a formal absence of hierarchy and the informal hierarchies" (Stubbs & Vidović, 2017, p. 148). The identified drivers of collaboration are commonly more critical in nature, such as environmental problems or opposing injustice in larger political and economic systems. This can be traced back to the political and feminist economic theories applied in this strand (Picciotti 2017, p. 236; Stubbs & Vidović, 2017, p. 145). Concerning outcomes of collaboration, according to Dedeurwaerdere et al. (2017), urban-rural collaboration not only enhances sustainable consumption as an individual choice, it also supports social learning about the complexities of different choices and the emergence of collective, political subjectivity. McRobbie (2013) and Houtbeckers (2017b) describe such empowering subjectivation as an embodied and emotional process, which is supported in particular by socially entrepreneurial co-working spaces for the precarious self-employed in cities. Finally, materiality of collaboration is tackled apart from the body also in technology. Smeets (2017) and Rossignoli, Ricciardi, and Bonomi (2018) describe how modern ICT has strongly supported the upscaling of SEs by providing a transparent system of handling information and payments. ICT "renders procedures modular and adjustable ... allowing a gradually wider and more diverse network of interacting actors" (Rossignoli, Ricciardi and Bonomi, 2018, p. 430).

Especially interesting in this strand are the analyses of complex collaborative decision-making processes and practices in networks. Firstly, in terms of scales, Becker, Kunze, and Vancea (2018) and Picciotti (2017), for

example, describe SE as a bridging organization between local governments, non-profit organizations, and a multinational enterprise. Rossignoli, Ricciardi, and Bonomi (2018) and Picciotti (2017), instead, focus on Italian cooperatives, and the spreading and institutionalization of diverse, successful local practices into other locations and organizations. In some reported cases, the organization was able to push local institutional changes only thanks to the simultaneous spatial upscaling to other regions. However, these institutional changes were not provoked by the enterprises' sole agency. Rather their space of operation has co-evolved together with local, national and international regulatory frameworks (Smeets, 2017; Stubbs & Vidović, 2017). Finally, Stubbs and Vidović (2017) and McRobbie (2013) discuss not only the spatial spread of new practices, but also the intertwining of material space with the social entrepreneurial process. For example, the initiators' passage from the cities to the countryside, Croatia's position in the EU's semi-periphery, or a city's gentrification patterns and local traditions of resistance, they all provide both preconditions and are affected by the entrepreneurial practice.

The recognition of distributed agency has important implications for the handling of internal ambiguity in collaboration as well. The studied initiatives are heterogeneous and complex, whose common strategy is yet to be defined. Their participants find common ground at best by the practices of deliberation (Smeets, 2017) and distributed experimenting (Becker, Kunze & Vancea, 2017; Kimmitt & Muñoz, 2018). They enable the participants to acknowledge and accept disagreements in fundamental principles, and look for the best practical solutions in a participatory decision-making process beyond diverging opinions (Becker, Kunze & Vancea, 2017; Rossignoli, Ricciardi & Bonomi, 2018). The theories of commons-enabling decision-making and collaborative learning applied by a few authors in this strand give a very advanced contribution to understanding these processes. Whereas institutional theories focus on the clash between established institutional fields, the above-mentioned theories observe how new, ethical practices and nascent, fragmented institutions emerge. However, how the practitioners experience the ambiguity of collaboration on a daily basis is grasped only by the studies with an explicit focus on feminist political theories and embodiment. McRobbie (2013) and Houtbeckers (2017b) describe the actual and potential risks of burnout among urban self-employed social entrepreneurs. Reasons are found in inadequate delegation and unequal engagement between the participants as well as in structural competition and precarity imposed on the self-employed. Stubbs and Vidović (2017), in turn, describe an initiative with an outspoken ideal of participatory structure, which in reality "reflects a kind of 'laissez-faire' approach, relying on individual responsibility as a key value" (p. 158). Thus, "the 'freedom to act' can become more a source of anxiety

and uncertainty than a source of empowerment” (Stubbs and Vidović, 2017, p. 158). This practice unwillingly cements the position of a charismatic leader.

To summarize, local SEs may upscale into nodes in large-scale networks, create bonds between organizations with different principles and legacies, and nurture collective and empowering subjectivities. They may provide founding stones for new economic institutions of value-based, deliberative, distributed decision-making and trading, with an influence on policy. This influence results especially from their stronger outward integration instead of an inward integration into the immediate locality. However, the potential power conflicts, which innovative and radical networks may face with established and powerful institutions, could be better informed by organizational and institutional literature. In addition, such networks require committed partners who recognize the mutual interdependence and are able to handle diverging positions constructively. Especially in large networks, inadequate coordination, transparency and democracy are challenges, which some organizations have solved with ICT-based solutions. The literature drawing on feminist political economies is aware of this problem and discusses the mundane challenges of participatory work in fierce market competition. However, there is still a little discussion between the micro-level focus on embodied subjectivation and the large-scale focus on the emergence of social entrepreneurial networks. Furthermore, community collaboration literature could inform network studies about the ways and challenges of including village residents into multi-scalar networks and providing basic services on the ground.

## Summary of the research on collaboration

The empiric material analyzed in this article builds a solid knowledge base about the drivers, outcomes and contexts of collaboration in social entrepreneurship. These studies have been presented along three different research strands, with their specific theories and assumptions but also significant overlaps. *Community collaboration* literature brings forth a thorough discussion about the emergence process of new enterprises from mainly rural, participatory initiatives in collaboration with the public sector. Whereas this early formation process is overlooked by the organizational literature on *resources and employment*, the latter presents a stronger understanding of the challenges of the power imbalance between established organizations. Some studies relying on the organizational literature and the majority of the third research strand, *network collaboration*, have explored internal tensions in complex networks. The third strand, in particular, has an emphasis on ecological production and civil-society collaboration. In

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summary, collaboration is relevant for balancing both stable institutional and resource relations as well as reaching societal change.

However, as studies tend to draw on a narrow palette of theoretical insights, much of the current research falls short of understanding ambiguity and scalarity in its field. Especially in classical sociological and entrepreneurship theories in the first and the second strand, collaboration is frequently approached as a stable structure or an external and instrumental asset of the organization itself. In the empiric findings, however, the desire to work collaboratively appeared rather as a constitutive practice of social entrepreneurship, present in all aspects of work and production. It is also a conflictive and spatially complex process. Some recent articles in community and network collaboration literature have started to address these topics (Houtbeckers, 2017b; Mitzinneck & Besharov, 2018). The review has identified the following research gaps: Firstly, both collective practices of leadership in challenging conditions and embodied and mundane work experiences, especially those of power, privilege and failure, have been overlooked. Secondly, collaboration for resources has been treated as a challenging, but uncontextual development pattern. Thirdly, institutional change and the transformative power of SEs has been approached on a macro- and inter-organizational scale, but how this process is related to the mundane ethical negotiations and transformations internally has not been adequately researched. In the following section, the author turns to the communities and networks of practice approach as a possible way of taking the research along these lines further.

## RESEARCH AGENDA

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### **Advancing the field with the communities and networks of practice approach**

Communities of practice (CoP) builds a theory of learning as a joint engagement with the world, nurturing collective identification across spatial and organizational boundaries (Blackmore, 2010; Lave & Wenger, 1991). It has been applied in research on knowledge processes in commercial organizations and to a smaller extent in civic engagement (Duguid 2008), but in the field of social entrepreneurship, it is largely an unknown terrain. However, it could help to address the above-mentioned research gaps in a number of ways. First, the CoP approach conceptualizes working, knowledge and learning as a lived experience of participation in a joint enterprise, instead of as an individual, cognitive capability, or an inevitable structuration (Tandon, 2014;

Wenger, 2008). Therefore, according to Duguid (2008), it attends directly to the uneasy and embodied experiences of collaboration and provides a solid theoretical base to approach the phenomenon. Second, it provides a theory of how organizations and people sustain and transform themselves simultaneously, identified as the overall relevance of collaboration for SEs as well. Third, as different communities, institutions and their change are recognized along with differences in continuous practices instead of along local or organizational borders (Amin & Roberts, 2008), it helps to observe institutional change on a micro-scale. It might direct attention beyond isomorphic pressures or social cohesion towards understanding, how such structures emerge or break in situated practice (Snyder & Wenger, 2010). In the following, CoP and networks of practice (NoP) approaches to social entrepreneurship literature are briefly discussed, and the above-mentioned claims are elaborated further with an introduction to a new research agenda based on four selected conceptual tools of the theory: negotiation of meaning, boundary, learning trajectory and pattern. Amongst all central concepts in CoP-theory, these are both less used as well as the most appropriate lenses with which to respond to the question of this review.

CoP theory studies “learning as a social participation” (Wenger, 2008, p. 4), which takes place when people mutually engage in a joint enterprise (p. 73) in informal and voluntary groups. Members of CoPs create and rely on a history of habits, lessons and artifacts as a shared repertoire, which develops into collective identities and builds the basis for fixed institutions with their strongly codified practices (Wenger, 2008, pp. 89–91). As CoP research gives a rich account on “the process of social interaction and co-creation of meaning” (Tandon, 2014, p. 158) in “heterogeneities of proximity” (Amin & Roberts, 2008, p. 365), it is suitable for studying collaborative and value-laden dynamics in local economies. Amin and Roberts (2008) have conducted a thorough review of CoP research, differentiating diverse CoPs based on the role of proximity in them. The article is a response to the critique of the spatial simplification and romanticization of the CoP approach, which has also inspired the concept of networks of practices. NoPs are, like CoPs, interfaces of learning but are not dependent on direct interactions or shared identity. In NoPs, collaboration takes place within the common practice repertoire, but it may be dispersed, instead of embedded, in physical closeness and brought forward by professional, transportable standards (Brown & Duguid, 2001).

In social entrepreneurship literature, only one theoretical framing based on the CoP approach by Anita Tandon (2014) was found. Also, NoPs have been identified once by Houtbeckers (2017a) at the intersection of the fashion industry, self-employment, and upcycling. CoP theory has been commonly used in studies on social innovations and learning sustainable practices

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(Bradbury & Middlemiss, 2015; Füg & Ibert, 2019), which at times have SEs as cases (Bendt, Barthel, & Colding, 2013; van der Horst, 2008). However, its frequent application in the field of organizational knowledge management has caused an impasse in the theory's development. The main focus has been on practitioners with either a strong professional identity or highly valued knowledge (Amin & Roberts, 2008; Roberts, 2006) instead of pioneers with unconventional ideas. Furthermore, it has become commonplace to "ignore or suppress Lave and Wenger's (1991) understanding that learning processes are integral to the exercise of power and control" (Contu & Willmott, 2003, p. 284). As SEs can be considered to integrate both socially innovative practices as well as organizational and market practices, it could provide an ideal field to combine the best of both above-mentioned applications of the CoP approach.

### *Negotiation of a meaning: Reification and participation*

Although negotiation of meaning is a central concept in CoP theory, it has been barely applied in analysis. According to Wenger (2008), participating in joint work produces "meaning as an experience of everyday life" (pp. 52–53), which motivates and attaches people to common work. Negotiation of meaning takes place via interdependent processes of participation and reification. Reification fixes or 'objectifies' a common meaning with the help of outspoken rules, standardized methods or tools, whereas in participation, the common meanings are interpreted, persuaded, and changed (Wenger 2008, pp. 54–56). In this framing, collaboration cannot be understood as a conscious, rational strategy (Montgomery, Dacin & Dacin, 2012), but rather as an open process and an aim in itself, constituting the foundation for learning, innovation, and motivation (Brown & Duguid, 2001).

Furthermore, a collaborative SE is not successful merely when it scales up effectively, but also the process needs to be negotiated in a participatory manner. Studying the experiences and meaning-making behind common goals can help to understand "how affective dimensions also play a constructive role" (Wynne-Jones, 2017, p. 262) in reaching for or diverting from them. For example, the reluctance against external financing and institutionalization by many community enterprises becomes more understandable, when attending to the reification process that such funding implies. Negative experiences of bureaucratization and increasing legal responsibilities may accumulate into 'predispositions' (Roberts, 2006, p. 629), hindering learning and participation. The way these affective undertones impact collaboration could be attended with the following research questions: *What meanings of work are there in social enterprises and how are they negotiated? How*

*does the extent of participation and reification in collaboration relate to the participants' possibilities of learning and transformation?*

### *Boundaries*

According to Wenger (2010, p. 125), "shared practice by its very nature creates boundaries," which become interfaces of learning and contestation. Thus, attending to boundaries enables one to observe collaboration beyond the obvious organizational borders and binary categories of 'tight local' and 'distant loose' ties. Boundaries are the most explored phenomenon in social entrepreneurship research. According to Tandon (2014), sectoral boundaries (public, private, third) form a central interface in social entrepreneurship. In Bendt, Barthel, and Colding's (2013) research, in turn, boundaries emerge between and within SEs from different forms and durations of participation, such as between long-term volunteers and visitors. Also, practices of patenting design patterns and employment regulation, originally aimed at bridging gaps between sectors, may become strong boundaries themselves (Houtbeckers, 2017a).

According to the existing CoP applications in social entrepreneurship by Houtbeckers (2017b) and Tandon (2014), social entrepreneurs seem to take up the role of a boundary spanner. Boundary spanning is both an innovative and isolating practice, because spanners rarely enjoy the full recognition in any of the practice networks they engage in (Wenger, 2010). In addition, there seems to be a difference between more privileged boundary spanners, who benefit from high persistence and global networks (Houtbeckers, 2017b), and those who experience frustration due to lacking peer-support (Oreszczyn, Lane, & Carr, 2010). CoP and social entrepreneurship research alike have had a stronger emphasis on the aforementioned type of collaboration (Richter, 2017), ignoring that practitioners may even avoid it altogether and become hostile to outsiders (Contu & Willmott, 2003). These aspects of power and privilege have been discussed by some social entrepreneurship scholars (Barinaga, 2013), but apart from Bendt, Barthel, and Colding (2013), they have been barely explored in CoP and NoP literature. Therefore, the concept of boundary and the following research questions, inspired by Tandon (2014, pp. 162–163), might bring light to the potential internal inequalities in social entrepreneurial collaboration: *What kind of boundaries of collaboration emerge in socially entrepreneurial practice? What is the relationship between institutionalized privileges and boundaries of collaboration in social entrepreneurship? How do boundaries relate to SEs' stability and change-agency?*

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### *Learning trajectory and pattern*

Wenger (2008) describes trajectory as a history of learning and identification, which accumulates in CoPs and provides an established future orientation for the newcomers participants. Patterns, in turn, refer to the spreading of practices themselves across spaces and institutional settings, forming a locally adapted but recognizable chain of practice (Wenger, 2008). Trajectories in SEs pave ways for future negotiations about acquiring new resources and members or for adopting innovative patterns. The concept of trajectory may thus help to observe, how experience becomes authority in collaborative leadership, manifesting itself in empowering and accessible as well as in discouraging and privileged positions. It is also a means to study how institutions or isomorphic forces are enforced and challenged, not only on the basis of obvious sectorial borders, but also according to the practical accumulated experience (Lave & Wenger, 1991).

To the author's current knowledge, neither of these concepts has been applied in CoP research on social economy. Füg and Ibert (2019, p. 17), for example, rely on the concept of "(trans-) local professional community" and reveal its centrality for the "unfolding and consolidation" of an innovative approach in regional planning. However, the research focuses on an already highly professionalized field, whereas the concepts of trajectory and pattern may help to observe, how such innovative and boundary-spanning processes can or cannot emerge between *different communities* of professional, informal and marginal practices. In Houtbeckers' (2017a) research, for example, the "relations of non-participation are mediated by institutional arrangements" (Wenger, 2008, p. 169), and this blocked a social entrepreneur from opening up a new employment trajectory for her trainees. Such institutionally marginalized trajectories may well be discouraging for participants elaborating their future commitment in a particular SE. To explore these collaborative patterns further, the following research questions are suggested: *What kind of trajectories of collaboration does social entrepreneurship nurture? In which conditions do emerging patterns of social learning and innovation challenge or become part of institutionalized market and governmental relationships?*

## **DISCUSSION**

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This article presents the results of an SLR on collaboration in social entrepreneurship, and a research agenda based on CoP and NoP theories. It has analyzed peer-reviewed, empiric research reports and focused especially on the ambiguity and scalarity of collaborative processes of social

entrepreneurship. The four concepts of the CoP approach have been discussed: negotiation of meaning, boundaries, learning trajectories and patterns, and proposed as tools to approach the processual, controversial, mundane, and transformative in joint undertakings. The article finishes by summarizing the findings and their contribution to the social entrepreneurship research field.

The request to attend to the less straightforward side of collaboration is not new. For example, in their theory of institutional collaboration, Phillips, Lawrence, and Hardy (2000, p. 27) claim that “unstructuredness” is the most important aspect of inter-organizational relations. Other early theorists, such as Muñoz (2010) and Dacin, Dacin, and Matear (2010) have encouraged scholars to focus on the geographical and challenging side of the SEs’ embeddedness, including resistance to change and failure. However, until recent years, the theoretic and empiric answers have been modest. Even though the current research base is growing in amount and quality, the following aspects are still overlooked. Firstly, most of the authors neither define their conceptualization of collaboration nor reflect the scope or limits of their approach to the phenomenon clearly. This is perhaps linked to the limited application of theoretical approaches, mainly covering institutional theories, bricolage and community collaboration, whereas theories of participation, commons, social movements, governance of third sector organizations, or collaborative learning are rarely explored. Secondly, there is a need to recognize collaboration as an ambiguous and embodied process, where mundane practices, experiences and meanings of participation as well as negotiation of responsibilities play a central role. Finally, there is a need to be more contextually precise concerning the scales and the material and institutional environments of collaboration. In particular, many studies on village initiatives and local social enterprises overlook the “multiple shifting, tangled and dynamic networks connecting rural to rural and rural to urban” (Woods, 2007, p. 491) ... unevenly distributed across rural space” (Salemink, Strijker, & Bosworth, 2017, p. 561).

CoP and NoP literature provides, instead, a promising path to the less explored terrains. Even though the original theory’s contributions to the more critical questions posed in this review are not fully developed, the first attempts taken by Roberts (2006), among others, give a basis to build upon. Especially useful are her questions about power and tensions emerging from a CoP’s position in the larger society and its internal expertise hierarchies. This daily, iterative work of governing has been recognized as a crucial element of just and innovative collaboration in several of the newest articles (Pret & Carter, 2017; Richter, 2018; Rossignoli, Ricciardi, & Bonomi, 2018; Smeets, 2017) as well as in central textbooks on social, solidarity economy and commons (Nyssens & Petrella, 2015; Utting, 2015). CoP and NoP theories

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could contribute to this literature, especially with their attendance on how material and embodied practices enable collective subjectivation but also open it up to new impulses. Collaborative governance models and the question of ownership, in turn, have been explored in the civil society organization literature of the EMES-school (Meyer et al., 2015) and in the cooperative studies (Kasabov, 2016). These approaches deserve to be further applied and expanded with the CoP and NoP approach on the actual practices with which the different governance and ownership models are brought about.

The concepts of boundaries and trajectories, in turn, enable one to observe how practices may lay the foundations for new routines and institutions providing services and livelihoods, but also block other practices and innovations from spreading and upscaling (Tandon, 2014). This approach is suited to analyzing the mundane workings of the institutional and transformative power of collaboration between social and solidarity economic actors. CoP analysis alone is not enough to grasp the level of institutional transformation, but may provide some tools for understanding their reinforcement and rupture.

## CONCLUSION

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This article provides the following contributions to the field of social entrepreneurship research. It presents the state of the art empirical research on collaboration in social entrepreneurship in European and related contexts. It summarizes the evidence about elements, drivers, practices, hindrances, negative experiences, and outcomes of collaboration. By critically evaluating the current, most frequent, theoretical strands, the article provides a map to navigate the emerging paradigm shift and to develop its analytical, political, and geographical quality. It expands existing reviews and theoretical work, focusing especially on network theories. Furthermore, the article has evaluated the suitability of CoP and NoP theories and their particular concepts for this task. The article also acknowledges the limitations of the theory and methodology it relies on.

Concerning management practice, the article encourages to apply of a more critical, less functional and spatially nuanced perspective on enterprises' collaborative relations. Summarized empirical evidence on outcomes, risks and governance practices of collaboration may be a useful source for practitioners as well. Concerning theory, the possibilities of combining the research agenda with other approaches with a related ontological standpoint, such as diverse economies and commons, have been proposed. The strength of such a combination can be illustrated by naming

two premises, which these theories hold in common. Firstly, that individual agency and creativity is embedded in and enabled only by collective, emotionally supportive, and critical undertakings (Gibson-Graham, 2006; Wenger, 2008). Secondly, that collaboration between isles of innovation is the precondition for larger societal transformations, yet the horizontal and dispersed learning processes required for such transformation are easily drowned by universal, top-down governance and corporate management practices (Duguid, 2008; Helfrich & Bollier, 2019; Snyder & Wenger, 2010). If these premises hold any truth, they are certainly worth further explorations with rigorous analysis in future research.

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### Abstrakt

**Cel:** Celem tego artykułu jest, po pierwsze, zbadanie i ustrukturyzowanie pojawiających się badań nad współpracą w przedsiębiorczości społecznej, a po drugie zajęcie się zidentyfikowanymi lukami w literaturze za pomocą programu badawczego opartego na społeczności i sieciach teorii praktyki. **Metodyka:** Artykuł opiera się na systematycznym przeglądzie literatury, który podsumowuje istniejącą bazę dowodów i krytycznie ocenia główne podejścia teoretyczne. Analiza skupia się na niejednoznaczności i skali współpracy. **Wyniki:** Zidentyfikowano trzy główne wątki badawcze: po pierwsze, współpraca społeczności i sektora publicznego skupiająca się na partycypacyjnym inicjowaniu usług przez społeczności lokalne; po drugie, współpraca w zakresie zasobów i zatrudnienia skupiająca się na stosunkach władzy między ustanowionymi organizacjami; i po trzecie, współpraca na poziomie sieci i mikro, skupiająca się na wspólnym zarządzaniu złożonymi sieciami. Dominuje niejasno kontekstualizowane i niekrytyczne podejście do przedsiębiorczości społecznej; Jednak ostatnie badania dotyczące współpracy społeczności i sieci przedstawiają pewne niuanse podejścia do skalarności i niejednoznaczności. **Implikacje dla teorii i praktyki:** Istniejące badania mogłyby odnieść korzyści z jawnej i szerszej teorii współpracy, z analizy niejednoznacznych doświadczeń i kontekstów oraz zajęcia się wzajemnym oddziaływaniem między codziennymi praktykami a zmianami instytucjonalnymi na większą skalę. Artykuł przedstawia skompilowaną bazę referencyjną i daje wskazówki dotyczące przyszłych badań i praktyki ponownego przemyślenia przedsiębiorstwa społecznego jako przedsięwzięcia opartego na współpracy. **Oryginalność i wartość:** Artykuł wnosi wkład do badań nad przedsiębiorczością społeczną poprzez uporządkowanie dziedziny i wzmocnienie krytycznej teorii na ten temat.

**Słowa kluczowe:** przedsiębiorczość społeczna, przedsiębiorstwo społeczne, współpraca, wspólnoty praktyk, sieci praktyk.

### Biographical note

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### Conflicts of interest

The author declares no conflict of interest.

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# Mediating effect of relational capabilities in the relationship between entrepreneurial orientation and SMEs performance

Nuryakin<sup>1</sup> 

## Abstract

**Purpose:** The aim of this research is to analyze empirical evidence of the effect of entrepreneurial orientations on SMEs' business performance. The previous study found that entrepreneurial orientation became an important key for an entrepreneur to enhance business performance. This study also examined the role of relational capabilities as an intervening variable to achieve business performance.

**Methodology:** The sample in this study was the furniture SMEs in the region of central Java with a sample size of 208 SMEs. This study used purposive sampling methods. Structural Equation Modelling (SEM) was used to test results of the data analysis with the help of software AMOS/Amos Graph. **Findings:** The results of the study showed that entrepreneurial orientation has a significant positive effect on business performance. Entrepreneurial orientation has a significant positive effect on relational capabilities. Relational capabilities are mediated the positive relationship between entrepreneurial orientation and business performance significantly.

**Implications for theory and practice:** The results of this study indicate the effect of entrepreneurial orientation on business performance and relational capabilities and mediating role of relational capabilities. Therefore, SMEs ought to develop relational capabilities with SMEs networks through strengthening entrepreneurial orientation to achieve SMEs' performance. **Originality and value:** The main contribution of the study from the combination of entrepreneurial orientation and relational capabilities of SMEs to enhance business performance.

**Keywords:** entrepreneurial orientation, relational capabilities, business performance.

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Received 20 April 2019; Revised 28 September 2019; Accepted 30 September 2019 (paper moved to be published in 2021). This is an open access article under the CC BY license (<https://creativecommons.org/licenses/by/4.0/legalcode>).

## INTRODUCTION

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Indonesian furniture export sales were ranked 18th, far below Malaysia and Vietnam, in the *Central Java Directory of Exporters* in 2014. However, the furniture and handicraft industry in Indonesia has the potential to grow more significantly in the future because of abundant raw materials and adequate skilled personnel to support them, as well as product design which is as good when compared with other countries. Indonesian export capabilities in the furniture sector have not yet been able to compete in the arena of global competition. In global export markets, the European region has huge potential at 42%, while Asia is 40%, 9% in America, 7% Australia, and 2% Africa (Asmindo, 2014).

It is essential for furniture SMEs in Indonesia to have an entrepreneurial spirit and penetrate these international markets. Studies on the importance of SMEs to have an entrepreneurial orientation have also been investigated by previous researchers such as (Baker & Sinkula, 2009; Kohtamäki, 2008; Kraus, Rigtering, Hughes, & Hosman, 2011; Nadli, Nordqvist, Sjoberg, & Wiklund, 2007; Teck, 2012). Furthermore, Baker and Sinkula (2009) describe the importance of the company to be oriented on the market and entrepreneurial in achieving the firms' growth and identifying market opportunities. The companies conducting orientation towards entrepreneurship will efficiently develop the company's innovation through increasing both the quality and quantity produced.

Zimmerer, Scarborough, and Wilson (2005) declare the 21<sup>st</sup> century as the century of entrepreneurship. Entrepreneurship is a concept and management practices that are important in the history of today's business world. Hitt, Ireland, Sirmon, and Trahms (2011) state that entrepreneurship is an activity or process carried out by individuals or groups to create prosperity (performance) through the creation of value. Lumkin and Dess (1996) argue that the concept of entrepreneurial orientation describes the mindset of organizations in the search for a new venture that provides a framework for the company's research activities.

*This research investigates the phenomenon of the exported furniture sales trend in Indonesia that has shown a decline. The market coverage of the export-oriented furniture SMEs in the Central Java region has increased. Based on the potential export market, Indonesian furniture products are still open, so the export-oriented furniture SMEs should be able to enhance their ability to enter international markets. The objective of this study is to empirically demonstrate the effect of entrepreneurial orientation on business performance through variable relational capabilities on the scope of furniture*

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*SMEs. Relational abilities are an essential concept in bridging the relationship between entrepreneurial orientation and business performance.*

## LITERATURE REVIEW

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### **The relationship between entrepreneurial orientation and business performance**

Entrepreneurial orientation provides a strategic role in growing business performance (Bhuian, Richard, & Shamma, 2010). Furthermore, entrepreneurial orientation is an essential factor that mediates four managerial traits, such as the need for achievement, and tolerance of ambiguity, conformity, and individualism to achieve organizational performance. Wiklund (1999) asserts that entrepreneurial orientation is an entrepreneurship process based on the organization where several factors coming from inside and outside of a company can influence proactive action, innovation, and risk-taking by the company. So that the work is embedded in a management framework.

Several studies have shown that companies with entrepreneurial orientation have better performance, but some are showing no positive correlation between entrepreneurial orientation and firm performance, so the question arises whether an entrepreneurial orientation strategy is always a suitable orientation if its relationship with performance is complicated (Wiklund & Shepherd, 2005). Furthermore, Rauch, Wiklund, Lumpkin, and Frese (2009) used a *meta-analysis* approach that examined entrepreneurial relationship orientation with performance. The result showed that entrepreneurial orientation is a determinant of the performance of the company. Moreover, the study and assessment of the field of entrepreneurship studies show a slow and limited development to the accumulation of the body of knowledge from entrepreneurship, due to the lack of agreement on key issues about what constitutes entrepreneurship.

Covin and Lumpkin (2011) explain that the entrepreneurial orientation literature review shows a lack of universal consensus about the nature of the construct of entrepreneurial orientation, its dimensions, and its influence on performance. Therefore, researchers should explore more profoundly the concept of entrepreneurial orientation. Next, some studies on the relationship between entrepreneurial orientation and firm performance have been carried out by inserting a moderating or mediating variable.

Wang (2008) examined the relationship between entrepreneurial orientation and firm performance by inserting organizational learning as a mediator variable. The results showed that organizational learning

mediated the entrepreneurial relationship orientation and firm performance. However, these studies remained limited, partly because the research model that was built only covered the characteristics of medium and large companies. The relationship may be difficult to explain in the context of small businesses, due to the individual learning of entrepreneurs who play more roles in their organizations.

The role of the intra relational and extra relational capital industry is as a moderator variable in entrepreneurial relationship orientation and firm performance (Stam & Elfring, 2008). Furthermore, relational capital as a contingent value proposes an optimal business performance resulting from the harmony of a strategic attitude linked to the configuration of the intra and extra industry. Baker and Sinkula (1999) developed a model that put entrepreneurial orientation and market orientation as an independent variable and profitability as the dependent variable. The willingness to innovate mediates entrepreneurial relationship orientation and market orientation. According to the theories above, the hypothesis of this study is:

*H1: Entrepreneurial orientation has a positive effect on business performance.*

## **The relationship between entrepreneurial orientation and relational capabilities**

Janney and Dess (2006) state that social capital attached to entrepreneurs in developing business networks can balance the risks coming up in their business. Membership of business networking organizations can offset the risk of entering a new business start-up. The members get exclusive access to information and opportunities to cope with the uncertainty in the business environment. Meanwhile, Chuluunbaatar, Ottavia, and Kung (2011) examined the relationship between relational capital (trust and linkage) and the socio-economic conditions in the process of starting entrepreneurship. The result showed that entrepreneurs tended to take risks proactively, and aggressively sought to build their social capital based on the principle of mutual benefit.

Other researchers found that a car company in Japan sought to absorb the risk by building a relationship of efficient business with suppliers to stabilize the performance of the company (Okamuro, 2001). Jamsa, Tahtinen, Ryan, and Pallari (2011), in their study, showed the importance to the organization of using their network as a source of power and an opportunity for continuous excellence. Chang (2012) advised that the sensitivity of market orientation, the absorbing knowledgeability, the social networkability,

integrative communication ability, and negotiation ability, are important abilities required by an entrepreneur.

Studies that tested the entrepreneurial relationship orientation and relational capability are still relatively limited. Hoang and Antoncic (2003) emphasized the importance to the company of establishing inter-organizational relationships between businesses in gaining access to a variety of business resources. The resource consisted of access to capital and intangible other resources. For example, the network provides emotional support for the risk-taking that entrepreneurs do and further improves the persistence to stay in business.

Dakhli and De Clercq (2004) examined the effects on innovation of two forms of capital in relational capabilities, namely human capital and social capital. The study used the conceptualization of social capital, previously consisting of belief, association activities, and norms of behavior, to examine the relationship among the indicators of social capital and innovation. The result of the study also found a positive correlation between human capital and innovation, and partial support for the positive effects of the beliefs and activities of the association in innovation.

The study done by Hoang and Antoncic (2003) placed network and relation in-network as a dependent variable in the process of entrepreneurship. They argued that an entrepreneur invests much time building new contacts and maintaining the current communications and exchanging valuable information within the relationship to get the best performance. Lumkin and Dess (1996) state the importance to the organization when risk-taking of anticipating and chasing new opportunities and being involved in the launch of a new market. A proactive company will be the first mover and will make use of this opportunity to improve its profitability and build brand recognition.

Based on the description above, the second hypothesis is as follows:

*H2: Entrepreneurial orientation has a positive effect on relational capabilities.*

## **The relationship between relational capabilities and business performance**

Relational capabilities have a relation to focus on the acceleration of knowledge access, the support of innovation and market entry capability, and the creation of a competitive advantage (Nuryakin, 2018; Nuryakin & Ardyan, 2018; Smirnova, Naudé, Henneberg, Mouzas, & Kouchtch, 2011). Relational capability emphasizes the importance of relationships involved in better business exchange to gain information, specific relationships, and benefiting

through integrated knowledge. Other researchers explain that the relational capability in some references were mentioned as the improvement of the performance of company in communicating, coordinating, and arranging business interaction (Day & Van den Bulte, 2002, J. H Dyer & Singh, 1998; Jacob, 2006). A relational capability consists of three dimensions; process configuration ability, communication with customers ability, and controlling business ability. Those dimensions measure the capability of a company in providing solutions for customers as an indicator of relational capability.

Lorenzoni and Lipparini (1999) in their study, concluded that a network in the firm (interfirm relationship) was an essential part of a distinctive organizational capability that gave a strong influence in improving the growth and innovation of the company. The relational capability was identical with one represented by the ability to coordinate the social network, to combine knowledge beyond the limit of organizations. So, it accelerated the access of transferring knowledge in the company and later affected the growth of the company.

Smirnova et al. (2011) in their study found that relational capability gave a positive and significant effect on marketing performance. Lee, Lee, and Penning (2001), in their research, tested the internal ability and external network in marketing performance. Internal skills focused on entrepreneurial orientation, technology skills, and financial resources invested during the building period. The result showed that those dimensions from internal skills affected performance and innovation. The interaction among internal skills based on partnership statistically gave a significant effect on performance.

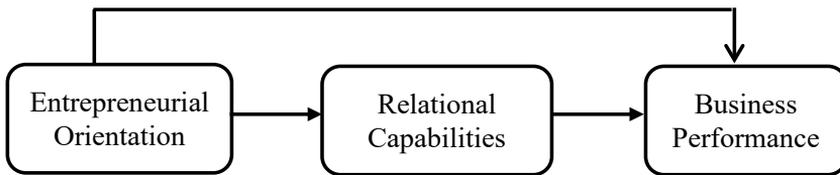
A study from Pinho (2011) offered a framework that was useful for more profound research on the social network field and dynamic skills. In terms of creating new dynamic skills to overcome the turbulence of unpredictable market condition, SMEs need to expand their networks by building networks providing access to new information. These dynamic skills changed positively and influenced international performance. Other research showed these findings; first, membership of some organizations did not affect the performance of private companies in China; second, short-term investment, and the flow of social capital determined the performance of the firms significantly (Zhang & Fung, 2006).

Hormiga, Batista-Canino, and Sánchez-Medina (2011) tested the relationship with customers, suppliers, the information network of a company, and company reputation in successful performance. The results showed that the relational capital with the dimensions of connection with the customer and supplier relationships had a significant correlation to the success of the marketing performance. Other results showed that the informal network of the company and its reputation also correlated to the

success of the company's performance. Results of research conducted by Borchert and Bruhn (2010) concluded that human capital, relational capital, teamwork, and team size affected the company's corporate objectives measured by the company's performance. The other study that explained the role of relational capital on company performance was done by Taghieh, Taghieh, and Poorzamani (2013). The results showed that intellectual capital and relational capital affected the financial performance of a company. The research also concluded that intellectual capital and relational capital also had a significant effect on the market value of the company.

Based on the description above the following hypothesis can be developed and the research model (Figure 1):

*H3: Relational capabilities have a positive effect on business performance.*



**Figure 1.** Conceptual model

Figure 1 above explains the importance of relational capabilities for companies in mediating the relationship of entrepreneurial orientation on business performance. Entrepreneurial orientation and relational capabilities in this study have the potential to increase business performance.

## RESEARCH METHODS

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### Research samples

Respondents in this study of 200 SMEs are a group of furniture exporters located at the center of the furniture industry in Jepara, Sukoharjo, Klaten, and Sragen in Central Java. The analyzed unit of the study were managers or owners of these furniture SMEs. The sampling technique used was *purposive sampling* which was then reviewed using the experience of the manager or owner.

## **Instrument and measurement**

This study used primary data collected through questionnaires filled in by respondents. All variables in this study, namely the constructs entrepreneurial orientation, relational capabilities, and business performance, were measured by using a Likert-scale questionnaire with answers in the range 1 - 5. The scale depicted ratings from 'strongly disagree' to 'strongly agree.' The instrument in this study applied an indicator of the three constructs, entrepreneurial orientation, relational capabilities, and business performance.

Lin and Peng (2008) explain business performance is an operation of the organization, including the achievement of company goals, both internal and external. Meanwhile, business performance indicators in this study were measured through sales growth, profit, and market share. Wiklund (1999) defines entrepreneurial orientation as the entrepreneurship process based on the company where proactive action, innovation, and risk-taking by the company can be influenced by many factors coming from inside and outside the company so that the work is embedded in a management framework. Indicators of support for the development of new ideas, the courage to enter new markets, the use of technology, and the courage to launch new products and innovations, measured the entrepreneurial orientation in this study. Adecco (2007) defines relational capability as an intangible asset based on an effort to develop, maintain, preserve and build a relationship that is qualified by the relations of the company. Relational capability in this study measured the quality of the relationship with the buyer, the information from the buyer on international product quality standards, the orientation of long-term relationships with buyers, and mutually beneficial relationships.

## **Screening data**

In the early stages of processing data, the researcher did the data screening by testing normality, and potentially outlier data detection (Ghozali, 2011). The respondents surveyed in this study were 200 owners/managers of exported furniture oriented SMEs scattered across the four areas in Central Java, namely Jepara, Sukoharjo, Klaten, and Sragen. Only 172 people responded to the questionnaire but eight questionnaires were incomplete. In addition, when the data was processed, there were 30 questionnaires from outside respondents, so they were dropped from the study sample. Therefore, the total sample left in this study was 134 respondents.

Advanced testing conducted in the study used Structural Equation Modelling (SEM) and AMOS program assistance 21. The indicators made up the construct by looking at parameters resulting in goodness of fit.

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Measurement models used convergent validity, namely to test these indicators, whether valid or what should be measured — the maximum likelihood estimation technique used in this study. Then the researcher tested the item questionnaire using confirmatory factor analysis to examine the relationship of the constructs with the indicator (the validity of the questionnaire) based on the theory developed while reliability testing, by using Cronbach alpha (Cronbach's  $\alpha$ ).

## RESULTS AND DISCUSSION

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The technique used in the model and hypothesis testings in this study was Structural Equation Modelling (SEM) analysis with the AMOS program. The analysis was done with a measurement model to test unidimensionality. Indicators created the construct by looking at parameters derived from goodness of fit. The measurement model will employ convergent validity to test the indicators, whether it is valid or not, in measuring what should be measured. Besides, the significance of indicators needs to be tested, as well as whether those indicators have the same dimension in creating a latent variable. Next, the researcher conducted Structural Equation Modeling with the same steps, i.e. testing the parameters from goodness of fit and directly testing the research hypothesis on the causal relationship developed in the model.

The researcher also applied the technique of maximum likelihood estimation in this research. The number of samples used here was 164 on the basis that this number had met the criteria of the number of sample adequacy recommended for the Maximum Likelihood Estimation (MLE) technique and Average Variance Error (AVE) of indicator criteria with a minimum sample size.

The model tested in this research used the questionnaire item by confirmatory factor analysis to examine the relation of the construct with its indicator (questionnaire validity). Furthermore, the reliability testing employed Cronbach's alpha (Cronbach's  $\alpha$ ). The research concluded that indicators could explain the measurement of a construct.

**Table 1.** Scale item for measures

Reflective scale names and items (measured on a 1–5 Likert-scale indicating the extent to which respondent agrees with the following statements).	Standardized factor loading
Entrepreneurial orientation (Cronbach’s $\alpha = 0.861$ )	
• Our company always supports the discovery of new ideas.	0.880
• Our company always takes initiatives to seek new opportunities.	0.730
• Our company always uses particular technologies in the production process.	0.829
• Our company has courage in launching new products.	0.696
Relational Capabilities (Cronbach’s $\alpha = 0.800$ )	
• Our company strives to establish closeness in a business relationship with buyers.	0.667
• The buyers provide information about international standardized product quality.	0.719
• Our company seeks to establish a long-term-oriented relationship with buyers.	0.717
• Our company strives to build a mutual benefit-based relationship.	0.731
Business Performance (Cronbach’s $\alpha = 0.812$ )	
• Growth in sales of our products on the international market is increasing.	0.764
• The total income from our sales is increasing.	0.776
• Scope of the export market of our products is increasing.	0.766

The researcher used Structural Equation Modelling (SEM) with the AMOS program in testing the three hypotheses of this research. Figure 2 presents the result of the testing using Structural Equation Modelling (SEM). The test result of full model confirmatory has indicated an excellent result in which it has met the criteria of goodness of fit. The structure of the model was used to describe models of causality research with a tiered relationship. The test result indicates the criteria of goodness of fit have met the requirements which are the scores for Chi-Square was 62.155, probabilities 0.018, TLI 0.957, GFI was 0.928, AGFI 0.885 and the score for RMSEA was 0.060, which indicate that the scores have met the determined cut-off. It demonstrates that the research is accepted and meets the defined criteria (standards). Table 2 below shows the mean, standard deviation, and correlation of matrix among the constructs of entrepreneurial orientation, relational capabilities, and business performance.

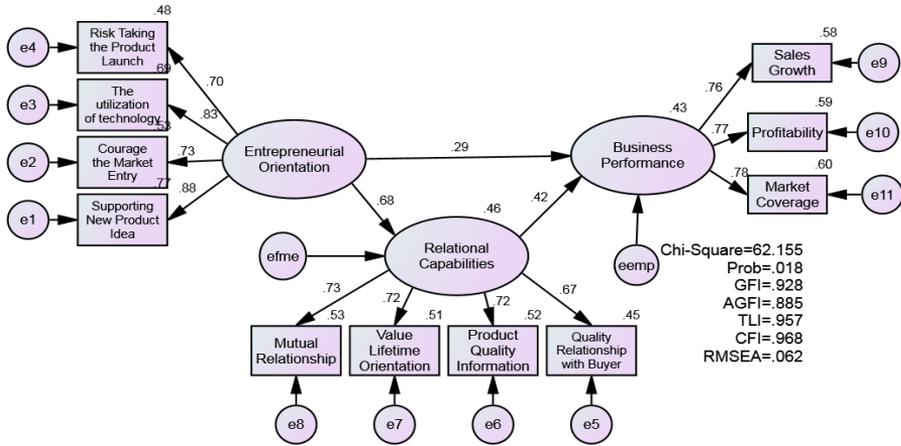
**Table 2.** Descriptive statistics and correlations

	Mean	Standard Deviation	1	2	3
Entrepreneurial Orientation	3.334	0.541	1.000		
Relational Capabilities	3.218	0.523	0.681**	1.000	
Business Performance	3.199	0.580	0.580**	0.622**	1.000

**Notes:** \*Correlation is significant at the  $p < 0.1$  level (2-tailed). \*\*Correlation is significant at the  $p < 0.05$  level (2-tailed). \*\*\*Correlation is significant at the  $p < 0.01$  level (2-tailed).

The correlation score among each construct shows a strong correlation between entrepreneurial orientation and business performance constructs (0.580\*\*). The relation between the entrepreneurial orientation and relational capabilities constructs has shown a less strong result (0.681\*). The relation

between relational capabilities and business performance indicates a strong correlation (0.622\*\*).



**Figure 2.** The relationship among entrepreneurial orientation, relational capabilities, and business performance

Table 2 indicates the *standardized path coefficients* of the relationship between entrepreneurial orientation, relational capabilities, and business performance. Meanwhile, Table 1 illustrates the research finding that forms the three hypotheses.

**Table 3.** Test result of relationship line coefficient of entrepreneurial orientation, relational capabilities on business performance

Hypothesis		Standardized path coefficients	t value	Prob.	Result
H1	Entrepreneurial orientation → Business performance	0.269	2.104	0.035	Significant
H2	Entrepreneurial orientation → Relational capabilities	0.513	5.738	0.000	Significant
H3	Relational capabilities → Business performance	0.518	2.920	0.003	Significant

**Note:** \*Significant at  $p \leq 0.05$ ; if  $(t) \geq 1.96$ .

The relationship between entrepreneurial orientation and business performance shows the result from *the structural path model* that explains the availability of a significant positive relationship between entrepreneurial

orientation and business performance. The result of a structural path calculation indicates that there is a positive and significant relationship between entrepreneurial orientation and business performance that can be observed from the value ( $t = 2.104 > 1.96$ ) with a significant value ( $0.035 < 0.05$ ). Hypothesis 1 is accepted.

The relationship of entrepreneurial orientation on relational capabilities shows that the result yielded from *the structural path model* explains the existence of a significant positive relationship between entrepreneurial orientation and relational capabilities. The result of a structural path calculation indicates that there is a positive and significant relationship between entrepreneurial orientation and relational capabilities that can be seen from the value ( $t = 5.378 > 1.96$ ) with a significant value ( $0.000 < 0.05$ ). Hypothesis 2 is accepted.

The relationship of relational capabilities on business performance shows that the result yielded from *the structural path model* explains the existence of a significant positive relationship between relational capabilities and business performance. The result of a structural path calculation indicates that there is a positive and significant relationship between relational capabilities and business performance that can be seen from the value ( $t = 2.920 > 1.96$ ) with a significant value ( $0.003 < 0.05$ ). Therefore, hypothesis 3 is accepted.

This research is designed to examine the relationship between entrepreneurial orientation, relational capabilities, and business performance in the context of an analysis of furniture export market-oriented SMEs in the Central Java Region. The research finding has given proof that entrepreneurial orientation has a positive effect on business performance. This research finding has supported the previous research done by Wang (2008), which found that organizational learning mediates the relationship between entrepreneurial orientation and a company's performance. Another study has also outlined the role of relational capital in both intra and extra industry as the moderator variable in the relationship between entrepreneurial orientation and a company's performance (Stam & Elfring, 2008). Baker and Sinkula (1999) also confirm the same result, which reveals the association between entrepreneurial orientation and market orientation that is mediated by the willingness to innovate.

Another result of this study found that entrepreneurial orientation gives a significant positive effect on relational capabilities. This result supports the previous research conducted by Jamsa et al. (2011) which underlined the importance of an organization utilizing their network as the source of opportunities and resources that can function as a path of changes towards sustainable excellence. Chang (2012) also supports the same result in his research. He found that a company with market sensitivity orientation,

the ability to absorb knowledge, with a social networking capability, and the integrative ability to communicate and negotiate are essential abilities needed by a businessman.

Relational capability has a significant positive effect on business performance. This finding is in line with the previous study done by Lorenzoni and Lipparini (1999). They state that the networking available in an organization (interfirm relationship) is a pivotal part of organizational capabilities (distinctive organizational capability). It has a strong influence on promoting a company's growth and innovation. Furthermore, a study done by Smirnova et al. (2011) found that relational capabilities gave positive and significant effects on marketing performance. Lee et al. (2001) examined the internal ability and external network on marketing performance with the result that the three dimensions of internal ability had an impact on the performance to innovate. Interaction among internal abilities, on the grounds of partnership relation, gives a statistically significant effect on performance.

## **THEORETICAL CONTRIBUTIONS AND CONCLUSIONS**

This paper provides new empirical evidence on the relationship between entrepreneurial orientation and business performance and the mediation variable of relational capabilities. This follows the previous studies which suggest that entrepreneurial orientation brings a very strategic role in improving business performance (Bhuian et al., 2010). Another significant theoretical contribution is that this study also confirms the previous research conducted by Wiklund (1999). He states that entrepreneurial orientation is a process in which proactive, innovative, and risk-taking actions taken by a company can be affected by several factors that exist either inside or outside the company, and this is embedded in a management framework.

The implication of this research indicates its importance for the actors of export-oriented furniture SMEs to improve their business performance. In addition, the finding has also stated that the mediation role of relational capabilities is an essential support for export-oriented furniture SMEs in improving their business performance. It is also crucial for the export-oriented SMEs to maintain a relationship with their relations by putting forward the four principles, namely, keeping an excellent relationship with their buyers, sharing information with their connections on international standardized product quality, orienting on long-term relationships with buyers, and also building mutual relationships with their relations. Another significant contribution of this study is also in line with the theory developed by Morgan and Hunt (1994). They state that a company needs to be proactive

in cooperation and play an active role in introducing their products, which are built on the basis of commitment and trust.

Another interesting finding of this research also shows that, even though a lot of researchers have done studies, the research result here has consistently found a positive relationship with business performance. The SMEs are urged to establish their orientation in developing their business by possessing supportive characteristics on the development of new ideas, courage to penetrate new market, technology utilization and courage to launch new product.

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### Abstrakt

**Cel:** Celem tego badania jest analiza empirycznych dowodów wpływu orientacji przedsiębiorczych na wyniki biznesowe MŚP. Poprzednie badanie wykazało, że orientacja na przedsiębiorczość stała się dla przedsiębiorcy ważnym kluczem do poprawy wyników biznesowych. W tym badaniu zbadano również rolę zdolności relacyjnych jako zmiennej pośredniczącej w osiąganiu wyników biznesowych. **Metodyka:** Próbką w tym badaniu były MŚP z branży meblarskiej w regionie środkowej Jawy, o wielkości 208 MŚP. W badaniu użyto celową metodę pobierania próbek. Do testowania wyników analizy danych wykorzystano modelowanie równań strukturalnych (SEM) za pomocą oprogramowania AMOS / Amos Graph. **Wyniki:** Wyniki badania wykazały, że orientacja na przedsiębiorczość ma znaczący pozytywny wpływ na wyniki biznesowe. Orientacja na przedsiębiorczość ma znaczący pozytywny wpływ na zdolności relacyjne. Zdolności relacyjne w znacznym stopniu wpływają na pozytywny związek między orientacją na przedsiębiorczość a wynikami biznesowymi. **Implikacje dla teorii i praktyki:** Wyniki tego badania wskazują na wpływ orientacji przedsiębiorczej na wyniki biznesowe i zdolności relacyjne oraz pośredniczącą rolę zdolności relacyjnych. Dlatego MŚP powinny rozwijać zdolności relacyjne z sieciami MŚP poprzez wzmacnianie orientacji na przedsiębiorczość w celu osiągania wyników MŚP. **Oryginalność i wartość:** Główny wkład badania wynikający z połączenia orientacji przedsiębiorczej i zdolności relacyjnych MŚP do poprawy wyników biznesowych. **Słowa kluczowe:** orientacja przedsiębiorcza, zdolności relacyjne, wyniki biznesowe.

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## **Conflicts of interest**

The author declares no conflict of interest.

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# The moderating role of self-efficacy on the cognitive process of entrepreneurship: An empirical study in Vietnam

Duong Cong Doanh<sup>1</sup> 

## Abstract

**Purpose:** This study investigates the moderating role of self-efficacy on the cognitive process of entrepreneurship among Vietnamese students. Specifically, this study explores the moderating effects of entrepreneurial self-efficacy on the relationships between attitude towards entrepreneurship, subjective norms, perceived behavioral control, and intention to become entrepreneurs. **Methodology:** By adapting the theory of planned behavior and using data collected from 2218 students in Vietnam, the author utilizes a meta-analytic path analysis in order to show that entrepreneurial intention is strongly influenced by attitude towards entrepreneurship, followed by self-efficacy and perceived behavioral control. Particularly, structural equation modeling (SEM) was employed to test the model fit and hypothesis. **Findings:** The study indicates that subjective norms have both direct and indirect effects on entrepreneurship intention. Moreover, although the moderating impacts of self-efficacy on the relationships between subjective norms and perceived behavioral control is insignificant, the research study indicates that self-efficacy moderates the correlation between attitude towards entrepreneurship and start-up intention. **Implications for theory and practice:** Besides its contributions to entrepreneurship literature, this study also contributes to practices and implications at universities in Vietnam. **Originality and value:** These findings also illustrate that the theory of planned behavior can be appropriately implemented in the research context of emerging economies such as Vietnam. In addition, the study shows that the relationship between attitude towards entrepreneurship and entrepreneurial intention is moderated by entrepreneurial self-efficacy.

**Keywords:** entrepreneurial self-efficacy, entrepreneurial intention, the theory of planned behavior, attitude towards entrepreneurship, subjective norms, perceived behavioral control.

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## INTRODUCTION

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Promoting entrepreneurship has recently been seen as the key priority of the Vietnamese government and an impassioned topic in both political and social debates. Antecedents and consequences of venture creation or entrepreneurship have been the interest of many researchers (Nguyen et al., 2018). Entrepreneurship is related to both economic and social activities (Kot et al., 2016). Governments, scholars, and policymakers take into account developing small and medium businesses as they are deemed to be the sustainable development paths in many countries (Sivvam, 2012). Grzybowska (2004) defined business venture as individuals' conscious behavior, which derives from many different conditions, including the economic situation of the country, technological development, cultural value, policy and other social problems. Nevertheless, individuals' willingness to take risks is perceived as a crucial part of accomplishing business success. Therefore, entrepreneurs play an important role in promoting economic activities, as well as producing added value for society by making profits, creating jobs, and contributing to government budgets (Gaweł, 2010).

Although business venture has been a topic of interest for many researchers in recent years, it is still considered a developing research field within the sphere of management science. In addition, the research methods and literature in this field should be developed (Churchill & Bygrave, 1989; Kot et al., 2016). The research on entrepreneurship is very diversified and is divided into three different areas by Busenitz et al. (2003): *Firstly*, research on the process of recognition and exploitation of entrepreneurial opportunities; *Secondly*, research on the characteristics of individuals and teams, the processes associated with the development of intellectual or human capital by entrepreneurship; *Thirdly*, research on the methods of entrepreneurship and *finally*, research on cultural, institutional, and environmental factors that facilitate or obstruct entrepreneurship. Among those research areas, the factors that influence an individual's conduct of entrepreneurship activities are receiving special attention from researchers and state macro governance agencies.

Entrepreneurship is also seen as the process of innovation and creativity, which play a crucial role in producing new services and products, improving productivity and job creation, revitalizing industry, diversifying markets, increasing social welfare and promoting the development of national economies (Guerrero et al., 2008). In the entrepreneurship field, the reason why a person has or does not have entrepreneurial intention has been the interest of many scholars (Moriano et al., 2012; Krueger et al., 1994; Kolvereid, 1996a). With more and more independent contributions to the entrepreneurship field, many researchers have realized the potential value

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of an intention approach (Bird, 1988) because of the two following reasons. *Firstly*, entrepreneurial intention formation is not only seen as the first, but also an indispensable stage in the process of starting up an own business (Shook et al., 2003). Therefore, the research on factors affecting intention is considered as a feasible behavioral approach (Wong et al., 2015). *Secondly*, entrepreneurship is always planned and has a clear intention (Krueger, 2000). This behavior is the result of a process of careful consideration and selection by individuals (Bird, 1988). Empirical studies on various research fields, including entrepreneurship, emphasize that intention is a very effective variable to predict a particular behavior (Armitage & Conner, 2001; Kautonen et al., 2013). Liñán (2008) also states that the correlation between intention and behavior is very high – from 0.9 to 0.96 (Ajzen, 1991).

Moreover, it can be asserted that entrepreneurship is perceived as a conscious, time-consuming, carefully planned, and highly cognitive process (Wu, 2010). Thus, the decision to start a business is considered planned behavior and can be explained by intention models (Zhao et al., 2005). Kolvereid (1996a) also confirmed that the theory of planned behavior, which is proposed by Ajzen (1991), is the most appropriate model to explain and predict entrepreneurial intention. Moreover, Liñán (2008) also argued that the entrepreneurial decision is seen as a complex one, and it requires an intentional cognitive process. Three attendances in the theory of planned behavior, including attitude towards behavior, subjective norms and perceived behavioral control, are perfectly combined to investigate the intention and behavior. In other words, the theory of planned behavior shows the cognitive process to plan and execute an action. For the entrepreneurship field, this is entrepreneurial action. Walker et al. (2013) have pointed out that there are three reasons why the theory of planned behavior is perfectly appropriate for entrepreneurial studies: (i) entrepreneurship is a planned and intended act; nobody engages in starting a business in a timely manner; (ii) subjective norms mentioned in the theory of planned behavior are determined as an independent variable, which influence entrepreneurial intention more than many concepts of general cultural factors in other studies; (iii) this theory has been tested and proven to be feasible when applied to investigate the various type of intention and behavior.

Besides the three attitudinal antecedents in the theory of planned behavior, entrepreneurial self-efficacy has been determined as the best predictor to investigate a person's entrepreneurial intention and success (Tsai et al., 2014; Liñán, 2008). The previous research has made significant contributions to the entrepreneurship literature. However, questions related to the moderating influences of entrepreneurial self-efficacy on the relationships between these components and entrepreneurial intention in

the theory of planned behavior still do not explain it clearly (Tsai et al., 2014). Moreover, personal beliefs regarding the ability to perform a specific behavior have impacts on attitude towards behavior, perceived behavioral control, and intention (Ajzen, 1991). So, entrepreneurial self-efficacy can moderate the links between attitude towards entrepreneurship, perceived behavioral control, and entrepreneurial intention. In addition, some studies show that the relationship between subjective norms and entrepreneurial intention is significant (Kolvereid, 1996a; Krueger et al., 2000; Maresch et al., 2015), while others argue that this correlation is insignificant (Autio et al., 2011; Liñán & Chen, 2009; Solesvik, 2013; Tsai et al., 2014). Nevertheless, attitude towards entrepreneurship and perceived behavioral control can mediate the link between subjective norms and entrepreneurial intention. Thus, this study aims to fill existing research gaps in the business venture literature by answering the following research questions:

*RQ1: Does self-efficacy moderate the relationship between attitude towards entrepreneurship, subjective norms, perceived behavioral control and entrepreneurial intention among Vietnamese students?*

*RQ2: Do subjective norms have an indirect effect on entrepreneurial intention through attitude towards entrepreneurship and perceived behavioral control?*

The contributions this research make to entrepreneurship literature are shown in two manners: *Firstly*, the moderating role of entrepreneurial self-efficacy on the links between attitude towards entrepreneurship, subjective norms, perceived behavioral control and entrepreneurial intention are presented, while prior studies are only interested in the direct or mediating effects of entrepreneurial self-efficacy on start-up intention (Chen et al., 1998; Markman et al. 2002; Qiao & Hua, 2019; Naktiyok et al., 2010; Shahab et al., 2019; Segal et al., 2005; Tsai et al., 2014). *Secondly*, while a body of prior studies only focused on exploring the direct link between subjective norms and entrepreneurial intention (Engle et al., 2010; Liñán et al., 2011), this study presents the indirect effect of subjective norms on entrepreneurial intention through attitude towards entrepreneurship and perceived behavioral control.

## LITERATURE REVIEW

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Many definitions of entrepreneurship and entrepreneur have been developing over recent decades. Schumpeter (1975) argues that entrepreneurs are defined as individuals who produce new products and services to fulfill

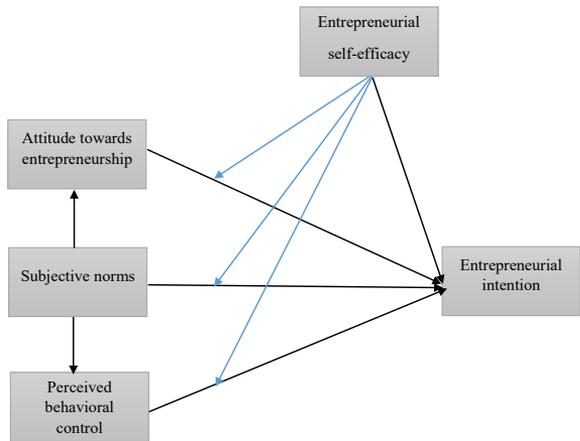
market demand whereas business venture is seen an important factor for developing a nation's economy (De Bruin et al., 2006; Schumpeter, 1960). *"The environment itself creates entrepreneurship"* (Bernat et al., 2016, p. 271) is why running a business requires not only a quick reaction to changes in the complex business environment, but also *"it is the process of designing, launching and running a new business"* (Timmons, 1990). Kirzner (1985) defines an entrepreneur as someone who is optimistic about the information gained in a way that can discover new entrepreneurial opportunities (Zięba & Golik, 2018). Talpas (2014) considers entrepreneurship to be an identifiable process, via business activities, that indicates effective leadership ability to adapt to a business environment that is characterized by risks, competitions and fluctuations, while entrepreneurs can be defined as owners with a skilful manner, that are likely to utilize limited production resources to produce new products and services, or transforming smaller resources into bigger ones effectively to make a profit (Zimmer & Scarborough, 1996). Indeed, business venture is determined as a cognitive process of running a new business organization (Shane & Venkataraman, 2000), which not only produces new products and services, and create jobs, but also develops the economy of the locality and country. Thus, exploring the roles of entrepreneurship in economic development as well as the effecting factors on entrepreneurship, including entrepreneurial intention, are the interest of many recent studies (e.g., Dvorský et al., 2019; Ključnikov et al., 2019; Rogalska, 2018; Zygmunt, 2018).

Entrepreneurial intention is defined as the intention of an individual to create a new business at a certain time in the future (Thompson, 2009). Gupta & Bhawe (2007) define entrepreneurial intention as a process to guide the planning and implementation of that business creation plan. A person's entrepreneurial intention comes from the recognition of a business opportunity, taking advantage of available resources to create his own business in a specific business environment context (Kuckertz & Wagner, 2010). Therefore, entrepreneurial intention is considered as the initial planning, which plays a fundamental role for an individual to create a new business in the future. While entrepreneurship is a process of creating a business organization (Gartner et al., 1992), an individual's entrepreneurial intention plays a decisive role in this process (Lee et al., 2011).

Although intention to become an entrepreneur is only seen as the first phase in a series of acts to engage in a business venture (Bird, 1988), Fishbein and Ajzen (1975) state that intention towards a particular behavior can be perceived as a key indicator of that behavior. In other words, an individual's intention to perform an action is still determined to be the best antecedent to anticipate his or her actual behavior (Krueger, 2008). Do and Dadvari (2017) also defined entrepreneurial intention as a reasonable state of cognitive

process that refers to individuals' experience and awareness, as well as their interests towards business venture activities as the decision to engage in business is voluntary and conscious (Krueger et al., 2000). A business venture aims to be successful in the long-term and show the prospects related to the economic growth of a country. In their research, Paul and Shrivatava (2016) compared entrepreneurial intention among youth managers in Japan and India, and this study indicates that young managers' intentions to become entrepreneurs in emerging countries is not always stronger than that of those in developed ones. Entrepreneurial levels in emerging countries such as India, although, are often lower than other developed countries. Thus, it is necessary to promote entrepreneurial activities in emerging countries.

By adopting the theory of planned behavior of Ajzen (1991) and the social cognitive theory of Bandura (1986), the author proposes a research framework to investigate the moderating role of self-efficacy in the cognitive process of entrepreneurship among Vietnamese students, which starts from attitude towards entrepreneurship, subjective norms and perceived behavioral control to entrepreneurial intention. An individual's intention and behavior is strongly influenced by his or her personal belief to perform a specific task (Bandura, 1986), whereas the control belief has effects on attitude towards behavior, perceived behavioral control, and intention to carry out a behavior (Ajzen, 1991). Thus, entrepreneurial self-efficacy may not only have a direct effect on entrepreneurial intention but it also might moderate the relationships between attitude towards entrepreneurship, subjective norms and perceived behavioral control and entrepreneurial intention. Figure 1 describes the conceptual model to investigate these correlations.



**Figure 1.** Conceptual framework

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## The roles of three antecedents in the theory of planned behavior

The Theory of Planned Behavior (TPB) is an extension of the Theory of Reasoned Action (TRA). According to Ajzen (1991), behavioral intention is determined by attitude towards behavior, subjective norms, and perceived behavioral control. *Attitude towards behavior* reflects the degree to which an individual has a favorable or unfavorable assessment of a particular behavior, and also depends on an individual's evaluation of the expected results or outcomes of the behavior. *Subjective norms* relate to the perception of social pressures by an individual to perform or not perform a specific behavior, and reflect an individual's perception in terms of salient people encouraging or discouraging them to perform a specific behavior. *Perceived behavioral control* refers to the beliefs about easiness or difficulty in carrying out a specific task and also shows the perceptions of the availability of resources, supports or barriers to carry out a behavior.

The theory of planned behavior can be implemented on any actual behavior that requires a specific amount of planning (Ajzen, 1991). The reliability of this theory, therefore, has been confirmed as robust in exploring intention and actual behavior in a body of various research fields. Intention and behavior to engage in business venture is complex and stems from an intricate mental process. As a result, the theory of planned behavior has been frequently employed to explain this mental process that results in creating a firm (Liñán, 2008).

In the entrepreneurship literature, many scholars are interested in discovering the linkage between the three attitudinal components in the theory of planned behavior (attitude towards entrepreneurship, subjective norms, and perceived behavioral control) and intention to become entrepreneurs (Kolvereid, 1996a; Krueger et al., 2000). Although scholars confirmed that attitude towards entrepreneurship and perceived behavioral control have strong effects on entrepreneurial intention, the findings of existing studies on the direct linkage between subjective norms and entrepreneurial intention are rather inconsistent. Some studies show that subjective norms are significantly related to entrepreneurial intention (Kolvereid, 1996b; Kolvereid & Isaksen, 2006; Tkachev & Kolvereid, 1999; Othman & Mansor, 2012; Solesvik, 2013; Maresch et al., 2015), whereas others argue that the link between subjective norms and entrepreneurial intention is insignificant (Autio et al., 2001; Krueger et al., 2000; Miranda et al., 2017; Liñán, 2008; Nabi & Liñán, 2013). Although based on the theory of planned behavior, subjective norms have a direct influence on entrepreneurial intention (Ajzen, 1991), the relationship between subjective norms and entrepreneurial intention should be empirically tested (Krueger et al., 2000). The following hypotheses

are proposed to test the effects of attitude towards entrepreneurship, subjective norms and perceived behavioral control on Vietnamese students' entrepreneurial intention.

*H1a. Entrepreneurial intention is positively influenced by attitude towards entrepreneurship.*

*H1b. Entrepreneurial intention is positively influenced by subjective norms.*

*H1c. Entrepreneurial intention is positively influenced by perceived behavioral control.*

Many previous studies indicate that the three attitude components of intention, such as attitude towards entrepreneurship, subjective norms and perceived behavioral control, do not play an equal role in shaping intention in the different research contexts (Kolvereid, 1996b; Krueger et al., 2000; Autio et al., 2001; Liñán & Chen, 2009; Nabi & Liñán, 2013; Tsai et al., 2016; Zaremohzzabieh et al., 2019). *Firstly*, subjective norms are supposed to have an effect on attitude towards behavior. That is, a person's attitude towards a behavior is likely to be affected by salient people, including their parents, close friends, teachers, or even successful entrepreneurs (Liñán et al., 2013). In the entrepreneurship field, an individual who has a negative attitude towards creating an enterprise can change his or her attitude towards entrepreneurship more positively if salient people approve and support his or her business activities. Moreover, Al-Rafee & Cronan (2006) argue that many prior studies confirmed that subjective norms are strongly correlated with attitude towards entrepreneurship. In the Vietnamese culture, individuals tend to be affected by people around them, especially their parents, teachers and friends; thus, the link between subjective norms and attitude towards entrepreneurship should be examined. *Secondly*, perceived behavioral control involves the influence that a personal control belief has on the actual behavior being investigated (Solesvik et al., 2012), whereas Liñán & Chen (2009, p.4) defined perceived behavioral control as "*the perception of easiness or difficulty in the fulfillment of the behavior of interest*". Thus, perceived behavioral control reflects a person's belief about necessary skills, knowledge and abilities required to carry out a specific action and achieve success (Miranda et al., 2017). This concept also refers to the perception about the control ability of the behavior (Liñán & Chen, 2009). Bandura (1986) considers that social beliefs have a strong effect on sculpting a person's personal beliefs about their capacity to carry out a particular behavior. In other words, individuals can be swayed to believe that they have enough abilities, skills, and knowledge to achieve success. The verbal encouragement of "I know you will succeed" from people around them can inspire an individual to remove any self-doubt

and concentrating on his or her tasks to accomplish success (Bandura, 1977). Thus, the effects of subjective norms on attitude towards entrepreneurship and perceived behavioral control should be explored.

*H2a. Attitude towards entrepreneurship is positively influenced by subjective norms.*

*H2b. Perceived behavioral control is positively influenced by subjective norms.*

## **The roles of entrepreneurial self-efficacy**

The theory of self-efficacy can help to explain why self-efficacy plays an important role in developing entrepreneurship skills and increasing the levels of entrepreneurship motivation. Self-efficacy as a construct is proposed by Bandura (1986) as a person's judgement of his capacities to execute a specific behavior, and is therefore seen as a largely perceived construct. Lopez and Snyder (2011) state that self-efficacy also reflects an individual's belief regarding whether he can perform a specific action or not. Indeed, this construct is employed as a reliable predictor of various behaviors. In the context of entrepreneurship, some scholars have defined self-efficacy as the strength of an individual's belief that he has enough ability to perform entrepreneurial action successfully (Chen et al., 1998; Segal et al., 2005; Tsai et al., 2014), while others have described self-efficacy as entrepreneurs' self-confidence regarding the accomplishment of an entrepreneurial process (Baum et al., 2001; Baron et al., 1999). However, it is stressed that entrepreneurial self-efficacy and perceived behavioral control are seen as two different concepts. Self-efficacy is defined as a person's beliefs regarding his abilities to perform a particular task (Tsai et al., 2014; Tavousi et al., 2009), whereas perceived behavioral control involves an individual's perception of easiness or difficulty to carry out this action (Ajzen, 1991).

The linkage between entrepreneurial self-efficacy and intention to engage in a business venture, including direct and indirect relationships, has been studied in some previous research. It is reported that an individual's self-efficacy has a positive effect on his intention to set up a business. A high level of entrepreneurial self-efficacy is strongly related to strategic risk-taking (Krueger & Dickson, 1994). Also, it is argued that self-efficacy is a key antecedent of entrepreneurial intention (Krueger, 2000) and entrepreneurial activities (Zięba & Golik, 2018). Individuals, who have high entrepreneurial self-efficacy, have more intrinsic interests in business venture actions, are more willing to make efforts and present persistence when they are faced with challenges and obstacles. So, self-efficacy has impacts on the choices

an individual makes, how long he persists at a task and how he feels about it. If an individual feels that the performance of a specific action is within his abilities, he can act, even if this action is difficult, since he perceives the successful completion of the action as a feasible achievement given the belief he has in himself. Indeed, students who have higher entrepreneurial self-efficacy also have higher intention to engage in starting a business (Chen et al., 1998; Liñán et al., 2011; Shinnar et al., 2014; Utami, 2017) and even higher entrepreneurial behavior (Neto et al., 2018). However, the influential degree of entrepreneurial self-efficacy on entrepreneurial intention is different and depends on the particular research context (Krueger et al., 2000; Miranda et al., 2017). Moreover, the indirect links between entrepreneurial self-efficacy and start-up intention are still not explained clearly, and further studies should investigate this relationship (Miranda et al., 2017; Tsai et al., 2014).

A person, who has high self-efficacy, can present higher abilities to pursue and achieve their goals (Bandura, 1997). So, an individual's intention to run their own business can be influenced by his self-efficacy (Chen et al., 2014). Indeed, entrepreneurial self-efficacy can be considered as an effective indicator to predict the start-up intention and behavior (Lee et al., 2011), while it is argued that self-efficacy has both direct and indirect influences on entrepreneurial intention (Krueger et al., 2000). In this research, the direct link between Vietnamese students' entrepreneurial self-efficacy and intention to run an own business is considered, and this hypothesis is proposed to test this relationship.

### *H2c. Entrepreneurial intention is positively influenced by self-efficacy.*

Numerous studies, which employ the theory of planned behavior, have confirmed that all three attitudinal antecedents, including attitude towards entrepreneurship, subjective norms and perceived behavioral control, play an important role in forming an intention to become entrepreneurs (Kolvereid, 1996a; Krueger et al., 2000). However, self-efficacy can moderate the relationships between attitude towards entrepreneurship, subjective norms, perceived behavior control, and entrepreneurial intention for the following reasons. *Firstly*, a person's intention and behavior are significantly affected by his capacities regarding performing a specific task (Bandura et al., 1980), while perceived behavioral control and attitude towards behavior are influenced by his control beliefs (Ajzen, 1991). Many studies have proved that the correlation between attitude towards entrepreneurship and entrepreneurial intention is really high (Kolvereid, 1996b; Autio et al., 2001; Liñán & Chen, 2009) but a person's attitude towards behavior can be influenced by his belief in the outcomes of this behavior (Bandura, 1977). *Secondly*, some studies show

that there is no correlation between subjective norms and entrepreneurial intention (Autio et al., 2001; Liñán & Chen, 2009; Krueger et al., 2000), whereas others argue that this relationship is significant (Kolvereid, 1996a; Kolvereid & Isaksen, 2006). *Finally*, perceived behavioral control reflects an individual's perception of easiness or difficulty in fulfilling the interested behavior (Liñán & Chen, 2009), which are often not only related to new ventures (Obschonka et al., 2010; Silveira-Perez et al., 2016) but also have a positive influence on the intention to become an entrepreneur (Schaegel & Koenig, 2014). Moreover, an individual, who has strong entrepreneurial self-efficacy, can perceive the low risk related to running a business and can have a high level of willingness to start a business (Liñán, 2008). As a result, the links between attitude towards entrepreneurship, subjective norms, perceived behavioral control and entrepreneurial intention can be moderated by entrepreneurial self-efficacy and the following hypotheses are proposed to test the effects of this moderator.

*H3a. The relationship between attitude towards entrepreneurship and entrepreneurial intention is moderated by self-efficacy.*

*H3b. The relationship between subjective norms and entrepreneurial intention is moderated by self-efficacy.*

*H3c. The relationship between perceived behavioral control and entrepreneurial intention is moderated by self-efficacy.*

## METHODOLOGY

### Survey and sample

Based on the research purpose, literature review and research framework, the questionnaire is separated into two sections. Firstly, questions are designed to help students show their perception about entrepreneurial self-efficacy, attitude towards entrepreneurship, subjective norms, perceived behavioral control and intention to become entrepreneurs. Secondly, demographic information, including gender, fields of study, participation in entrepreneurship education programs, and type of current professional activities, is required.

The following formula has been employed to calculate a minimal size of study sample:

$$N \geq N_{\min} = \frac{U_{\alpha}^2}{4d^2}$$

(Szajt, 2014, p.40)

Where:  $N_{\min}$  – Minimal size,  $U_{\alpha}$  – Statistical value of the normal distribution table,  $(1-\alpha)$  – The confidence level,  $d$ – The margin of error (the confidence interval). The confidence level is assumed to be 99% ( $\alpha = 0.01$ ), which gives the margin of error = 0.0274 (or 2.74%). Moreover, following the report presented by the Ministry of Education and Training, 1,707, 025 students had enrolled in universities in Vietnam (MOET, 2018).

$$N \geq N_{\min} = \frac{2.33^2}{4(0.0274)^2} = 1807$$

The minimal size of the sample accounts for approximately 1807 students, while the collected sample includes 2218 students. Thus, the sample size is appropriate.

**Table 1.** Descriptive information of sample demographics

Demographic information		Frequency	Percent
Gender	Male	1384	62.4
	Female	834	37.6
Fields of study	Economics and/or Business Administration	1221	54.6
	Engineering and/or another fields	1006	45.4
Participation in entrepreneurship education programs	Yes	387	17.4
	No	1831	82.6
Current professional activities	Only learning	699	31.5
	Learning and participating in part-time job	1080	45.9
	Learning and running own business	126	5.7
	Learning and looking for a secure job	375	16.9

Note: N=2218

The study collected data from 2218 final-year undergraduate students at universities in Vietnam. Some scholars state that samples of students are rather common in entrepreneurship studies (Autio et al., 2001; Krueger et al., 2000; Liñán & Chen, 2009). However, it is argued that undergraduate students, aged from 25 to 34-years old, often have the highest intention to run their own business (Qiao & Hua, 2019). Indeed, the study only focused on final-year students because they are interested in career choice after graduation at this stage; thus, their start-up intention is likely to be at its

highest in the final studying year at university (Autio et al., 2001). 2500 questionnaires were directly distributed to students studying in their final academic year at 14 universities and colleges in the North, Central, and South of Vietnam. The survey not only consisted of direct explanations in terms of the research purposes, but it also included instructions on how to complete the questionnaire. However, only 2218 questionnaires were completed, accounting for 88.72%. The rest of the samples, including 282 questionnaires, were extracted due to incomplete or inadequate answers. Table 1 shows the demographic statistics of respondents.

The results showed that 62.4% respondents were male, and 37.6% were female. In terms of fields of study, approximately 55% of students were studying economics and/or business administration whereas students who were studying engineering and other fields, account for 45.4%. However, only 17.4% of respondents state that they had taken part in entrepreneurship education programs, while 82.6% of students had never participated in these programs. Moreover, 45.9% of students were studying and participating in a part-time job, followed by only studying (31.5%), studying and looking for a secure job (16.9%), studying and running an own business (5.7%).

## Analyses

We performed a meta-analytic path analysis using SPSS 22.0 and AMOS 22.0 to investigate the moderating role of entrepreneurial self-efficacy in the relationships between attitude towards entrepreneurship, subjective norms, perceived behavioral control, and entrepreneurial intention. The analysis process, with the support of structural equation modeling (SEM), consists of two major stages in order to test the hypothesized linkages. *Firstly*, Cronbach's Alpha and exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were employed to test the reliability, validity of variables as well as the model fit. *Secondly*, structural equation modeling (SEM) was then utilized to estimate path coefficients of the hypothesized links in the research model.

## Scales

All measures in this study were adapted from prior studies, such as entrepreneurial self-efficacy (Tsai et al., 2014), subjective norms (Liñán & Chen, 2009; Kolvareid, 1996b), attitude towards entrepreneurship, perceived behavioral control, and entrepreneurial intention (Liñán & Chen, 2009). The measures were rated on a 5-point Likert-type scale from *strongly disagree* (1) to *strongly agree* (5). All measures were then subjected to confirmatory factor analysis (CFA) for the purpose of testing the reliability of scales and purification.

**Table 2.** The reliability of variables

Constructs	Questions	$\alpha$		Component
ESE $\alpha = 0.840$	ESE1. "I show great aptitude for creativity and innovation"	0.840	0.588	
	ESE2. "I show great aptitude for leadership and problem-solving"	0.802	0.685	
	ESE3. "I can develop and maintain favourable relationships with potential investors"	0.796	0.795	
	ESE4. "I can see new market opportunities for new products and services"	0.789	0.802	
	ESE5. "I can develop a working environment that encourages people to try out something new"	0.890	0.711	
EI $\alpha = 0.918$	EI2. "I will make every effort to start and run my own firm"	0.911		0.796
	EI3. "I am determined to create a firm in the future"	0.895		0.841
	EI4. "I have a very seriously through of starting a firm"	0.874		0.854
	EI5. "I have the firm intention to start a firm someday"	0.892		0.810
	ATE $\alpha = 0.826$	ATE2. "A career as an entrepreneur is attractive for me"	0.816	
ATE4. "If I had opportunity and resources, I'd like to start a firm"		0.759		0.789
ATE5. "Being an entrepreneur would entail great satisfactions for me"		0.765		0.769
SN $\alpha = 0.826$	SN1. "If I decided to create a firm, my closet family would approve of that decision"	0.827		0.831
	SN2. "If I decided to create a firm, my closes friends would approve of that decision"	0.758		0.862
	SN3. "If I decided to create a firm, people who are important to me would approve of that decision"	0.792		0.827
PBC $\alpha = 0.882$	PBC1. "To start a firm and keep it working would be easy for me"	0.805		0.739
	PBC2. "I am prepared to start a viable firm"	0.775		0.828
	PBC3. "I can control the creation process of a new firm"	0.771		0.808
	PBC4. "I know the necessary practical details to start a firm"	0.788		0.708
Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO)			0.914	
Sig. of Bartlett's Test of Sphericity			0.000	
Cumulative %			71.046	

Cronbach's alpha is utilized to test the reliability and the validity of each measure, and the results illustrates that: (i) the correlated item-total correlation of the first item in the "attitude towards entrepreneurship" scale only accounts for  $0.352 < 0.4$ , which is not satisfactory (Nunnally & Brunstein, 1994). Therefore, this item is extracted from the measure of attitude towards entrepreneurship; ii) two items including "I am ready to do anything to be an entrepreneur", "my professional goal is to become an entrepreneur" in the scale of entrepreneurial intention have a Cronbach's alpha that is much higher than that of those for full scale of "entrepreneurial intention." So, two items also should be removed.

Moreover, after examining the reliability of variables by Cronbach's alpha, 22 items are employed in the exploratory factor analysis (EFA). Results indicate that  $KMO = 0.926$ , Sig. (Bartlett's Test) =  $0.000 < 0.001$ , Initial Eigenvalues =  $66.986 > 50\%$ . Nevertheless, PBC6, PBC5, and ATE3 loaded at two-factor groups and only reached 0.313, 0.358, and 0.407 respectively, which are lower than 0.5 (Hair et al.,1988). As a result, these items should be extracted from the scales, called perceived behavioral control and attitude towards entrepreneurship, before conducting confirmatory factor analysis (CFA).

Confirmatory factor analysis (CFA) is performed to examine the model fit and the internal validity of variables before testing structural model. Research results illustrate that the initial measurement model is satisfactory and shows a great level of fit.  $\chi^2 (142) = 737.371$ ,  $P = 0.000$ ,  $\chi^2/df = 5.193$  (Kettinger & Lee, 1995),  $CFI = 0.964$ ,  $AGFI = 0.952$ ,  $GFI = 0.974$ ,  $CFI = 0.974$ ,  $TLI = 0.968$ ,  $NFI = 0.968 > 0.9$ , and  $RMSEA = 0.043$  (Bentler & Bonnett, 1980). Moreover, the standardized regression weights of all items are higher than 0.5 ( $\lambda > 0.5$ ). Thus, the convergent validity of all variables is confirmed.

The average variance extracted (AVE) and composite reliability (CR) is utilized to indicate the reliability, the convergent validity, and discriminant validity of each construct (Anderson & Gerbing, 1988). Table 3 shows that CR values for all scales are seen to be higher than 0.60; the lowest value is 0.818 (attitude towards entrepreneurship-ATE). Also, all AVE values are within the recommended level with a value higher than 0.5. The lowest level of AVE is 0.521 (entrepreneurial self-efficacy-ESE). Thus, the discriminant validity of all variables is represented.

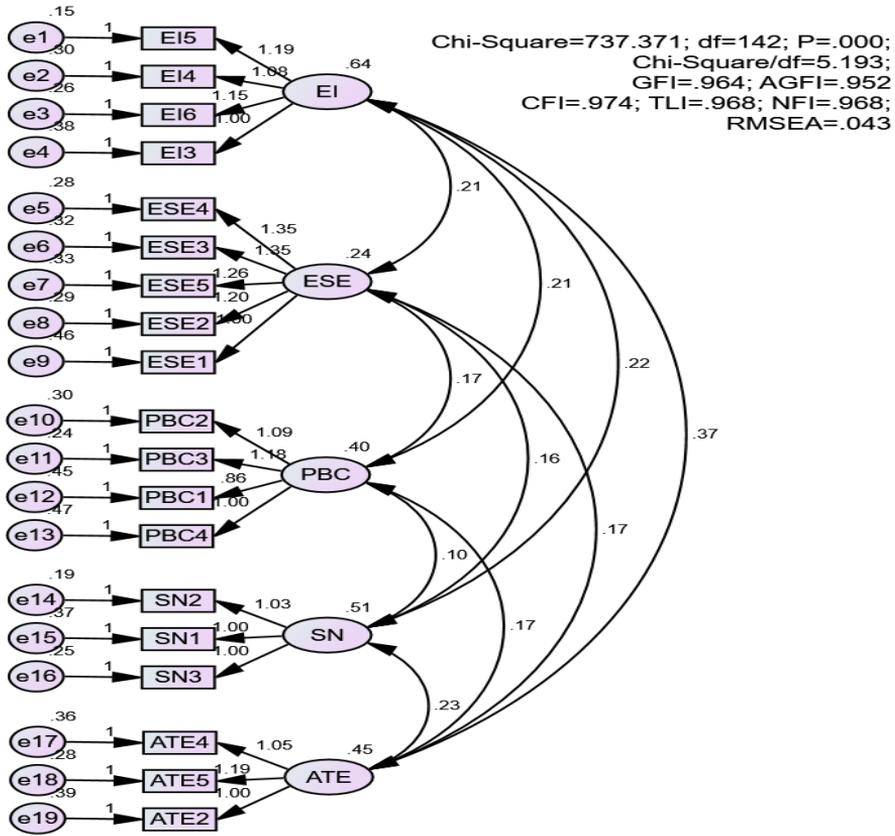


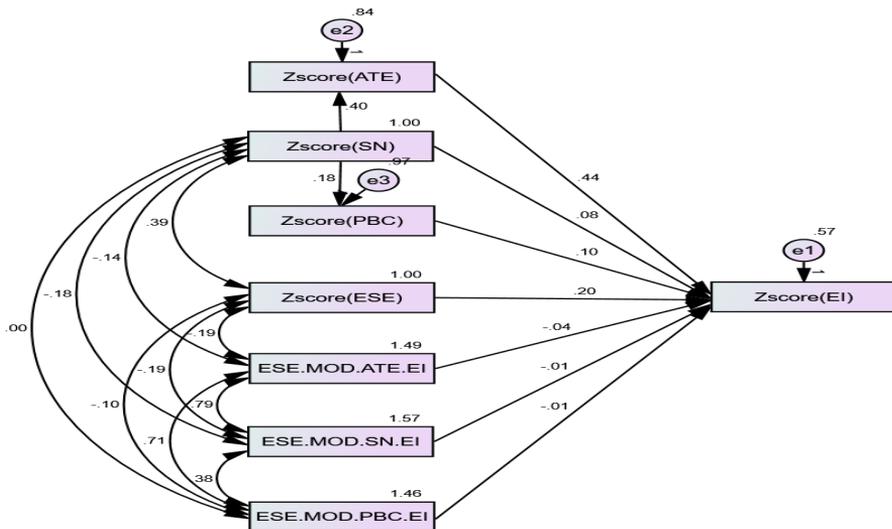
Figure 2. Measurement model (unstandardized estimates)

Table 3. Construct reliability, internal validity, and discriminant validity

	CR	AVE	MSV	MaxR(H)	SN	EI	ESE	PBC	ATE
SN	0.854	0.662	0.227	0.861	<b>0.813</b>				
EI	0.918	0.739	0.472	0.930	0.393	<b>0.859</b>			
ESE	0.843	0.521	0.312	0.852	0.449	0.542	<b>0.722</b>		
PBC	0.825	0.544	0.312	0.845	0.220	0.410	0.559	<b>0.738</b>	
ATE	0.818	0.601	0.472	0.826	0.476	0.687	0.534	0.395	<b>0.775</b>

**RESULTS AND DISCUSSIONS**

The path coefficients in the structural equation modelling (SEM) analyses (unstandardized estimate model) are shown in Figure 3.



**Figure 3.** Structural equation modeling (unstandardized estimates)

The results of the hypothesis testing are summarized in Table 4, which shows that hypothesis H1a is supported, because attitude towards entrepreneurship has a positive impact on entrepreneurial intention ( $\beta = 0.443$ ;  $p\text{-value} < 0.001$ ). Interestingly, different from much previous research, this study indicates that the link between subjective norms and entrepreneurial intention is significant ( $\beta = 0.079$ ;  $p\text{-value} < 0.001$ ). In addition, the research results show that entrepreneurial self-efficacy has a more significant impact on entrepreneurial intention ( $\beta = 0.196$ ;  $p\text{-value} < 0.001$ ), compared to perceived behavioral control ( $\beta = 0.099$ ;  $p\text{-value} < 0.001$ ). For Vietnamese students, therefore, the beliefs about their abilities, skills, capacities, and knowledge involved in entrepreneurship play a more important role in predicting entrepreneurial intention than their perception of easiness or difficulty related to running own their business. So, the difference between entrepreneurial intention and perceived behavioral control is proved in this study.

**Table 4.** The results of testing the research hypotheses

	Hypotheses			Estimate	S.E	C.R	P	Conclusion
H1a	ATE	→	EI	0.443	0.017	25.376	***	Supported
H1b	SN	→	EI	0.079	0.019	4.131	***	Supported
H1c	PBC	→	EI	0.099	0.016	6.102	***	Supported
H2a	SN	→	ATE	0.404	0.019	20.797	***	Supported
H2b	SN	→	PBC	0.184	0.021	8.806	***	Supported
H2c	ESE	→	EI	0.196	0.018	11.171	***	Supported
H3a	ESE*ATE	→	EI	-0.037	0.017	-2.160	0.031	Supported
H3b	ESE*SN	→	EI	-0.012	0.015	-0.777	0.437	Rejected
H3c	ESE*PBC	→	EI	-0.006	0.015	-0.380	0.704	Rejected

**Note:** N=2218; \*\*\* < 0.001; S.E: Standard Deviation; C.R: Critical Ratios.

The study also shows that subjective norms have strong impacts on attitude towards entrepreneurship and perceived behavioral control ( $\beta = 0.404$ ,  $p < 0.001$  and  $\beta = 0.184$ ,  $p < 0.001$  respectively). In addition, subjective norms not only have a direct influence on entrepreneurial intention, but they also indirectly affected entrepreneurial intention through attitude towards entrepreneurship and perceived behavioral control ( $\beta_{\text{indirect SN-EI}} = 0.197$ ,  $p < 0.001$ ).

In terms of the moderating role of entrepreneurial self-efficacy in the linkages between attitude towards entrepreneurship, subjective norms, perceived behavioral control and entrepreneurial intention, the study shows that the link between attitude towards entrepreneurship and entrepreneurial intention is moderated by self-efficacy ( $\beta = -0.037$ ,  $p = 0.031 < 0.05$ ), while the moderating role of self-efficacy in the correlations between subjective norms, perceived behavioral control and entrepreneurial intention is not significant ( $p = 0.437 > 0.05$  and  $p = 0.704 > 0.05$  respectively).

Thus, this study shows some interesting insights about the relationship between entrepreneurial self-efficacy and intention. *Firstly*, being similar to some previous studies (e.g., Tsai et al., 2014; Zięba & Golik, 2018), the study indicates that entrepreneurial self-efficacy is positively related to students' intention to become entrepreneurs. These results reflect that, although the research is conducted in different contexts, such as Vietnam, Uganda, and Poland, entrepreneurial self-efficacy expressed by student-beginners seems to affect their later start-up behavior in a statistically significant way (Zięba & Golik, 2018). *Secondly*, whereas almost all prior research only take into account the direct or mediating effects of entrepreneurial self-efficacy on intention, even behavior to become entrepreneurs (e.g., Davidsson & Honig, 2003; Esfandiar et al., 2017; Tsai et al., 2014; Zięba & Golik, 2018), this study reveals that entrepreneurial self-efficacy not only plays an important role in shaping

entrepreneurial intention, but it also moderates the linkage between attitude towards entrepreneurship and entrepreneurial intention. So, the existing research gap has been fulfilled (Tsai et al., 2014). Besides, being different from much prior research (e.g., Autio et al., 2001; Liñán & Chen, 2019; Miranda et al., 2017; Tsai et al., 2014), the study illustrates that subjective norms directly influence entrepreneurial intention. Also, attitude towards entrepreneurship and perceived behavioral control partly mediate the linkages between subjective norms and intention to engage in a business venture.

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## CONCLUSION

This study is expected to contribute to entrepreneurship literature through some of the following perspectives. *Firstly*, the application of the theory of planned behavior is completely appropriate in the context of Vietnam. The research results also illustrate that the approval or non-approval of salient people such as family members, close friends and teachers plays an important role in Vietnamese students' intention to run their own business. Analogously to many previous studies, attitude towards entrepreneurship has the strongest effect on entrepreneurial intention, followed by self-efficacy and perceived behavioral control. *Secondly*, this study shows that self-efficacy and perceived behavioral control are totally different constructs, since the degree of influence level of these factors on entrepreneurial intention is not similar. *Thirdly*, whereas previous studies only focus on the direct or mediating effects of self-efficacy on entrepreneurial intention, this study shows that although self-efficacy does not play a moderating role in the relationships between subjective norms, perceived behavioral control and entrepreneurial intention, it does moderate the link between attitude towards entrepreneurship and entrepreneurial intention. *Finally*, the study reveals that the social cognitive theory (Bandura, 1986) can be effectively applied in various study contexts, such Vietnam and Poland, when studies show that entrepreneurial self-efficacy has a direct and strong effect on entrepreneurial intention.

In terms of practical implications, this study might contribute to entrepreneurial education and training at universities and colleges in Vietnam through some of the following perspectives. On the one hand, the study results illustrate that attitude towards entrepreneurship plays the most crucial role in shaping intention to run their own business among Vietnamese students. Thus, educators, lecturers, and policymaker should have appropriate solutions to promote students' positive attitude towards entrepreneurship. Teachers can devote their time as well to efforts to impart business knowledge and skills to their students. However, 'attitude' is the most strongly related to

'intention'; therefore, teachers should figure out the most effective teaching methods to enhance a positive attitude towards entrepreneurship among students. Sharing the successful experiences of actual entrepreneurs, for example, can contribute to the development of students' positive attitude towards entrepreneurship. On the other hand, the results of this study show that entrepreneurial self-efficacy is also determined as a powerful variable, which does not only have the direct and strong influence on entrepreneurial intention, but also moderates the relationship between attitude towards entrepreneurship and entrepreneurial intention. Therefore, in the case of determining entrepreneurial intention as an outcome of entrepreneurial education, finding appropriate approaches to enhance entrepreneurial self-efficacy becomes more necessary. Bandura (1989) indicates that four methods should be employed to increase a person's entrepreneurial self-efficacy, such as role models, social encouragement, mastery experiences, and state of physiology. Starting and managing small projects, extra-scholar, and sharing successful stories and experiences of businessmen in entrepreneurial education, therefore, can encourage students to believe in their business skills, entrepreneurial abilities, and knowledge. Finally, the results indicate that subjective norms are not only directly related to entrepreneurial intention but that the linkage between subjective norms and entrepreneurial intention are also partially mediated by attitude towards entrepreneurship and perceived behavioral control. The results reflect that entrepreneurial intention is referred to as social pressure. In other words, the opinion of other people play an important role in shaping students' entrepreneurial intention. Apart from parents, students' entrepreneurial intention is also encouraged by their university environment, including close friends and lecturers. Thus, universities can be responsible for fostering students' entrepreneurial intention through some effective ways such as supporting business start-up movements and start-up clubs in colleges.

Based on the findings of this study, several directions can be conducted for further research. *Firstly*, biases and yield new findings can be identified as a result of expanding the research sample. *Secondly*, a stratified random sampling method should be utilized in any further studies to improve the level of significance. *Thirdly*, apart from exploring the moderating role of entrepreneurial self-efficacy in the linkages between the three components in the theory of planned behavior with the intention to become entrepreneurs, it is necessary to investigate both the moderating and mediating roles of personal factors that are involved in the process of shaping entrepreneurial intention in emerging economies, such as Vietnam. *Finally*, the conceptual framework should be expanded, by adding new variables such as social capital, entrepreneurial education, regulatory and normative factors,

entrepreneurship ecosystem, to be conducive to the development of entrepreneurship literature and implications.

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### Abstrakt

**Cel:** Niniejsze badanie bada moderującą rolę poczucia własnej skuteczności w poznawczym procesie przedsiębiorczości wśród wietnamskich studentów. W szczególności badanie to bada moderujące skutki poczucia własnej skuteczności przedsiębiorcy na związkę między postawą wobec przedsiębiorczości, normami subiektywnymi, postrzeganą kontrolą zachowania i intencją zostania przedsiębiorcą. **Metodyka:** Adaptując teorię planowanych zachowań i wykorzystując dane zebrane od 2218 studentów w Wietnamie, autor posługuje się meta analityczną analizą ścieżki, aby wykazać, że na intencje przedsiębiorcze silnie wpływa postawa wobec przedsiębiorczości, a następnie poczucie własnej skuteczności i postrzegana kontrola behawioralna. W szczególności do testowania dopasowania modelu i hipotezy zastosowano modelowanie równań

strukturalnych (SEM). **Wyniki:** Badanie wskazuje, że normy subiektywne mają zarówno bezpośredni, jak i pośredni wpływ na intencje przedsiębiorczości. Co więcej, chociaż moderujący wpływ poczucia własnej skuteczności na związki między subiektywnymi normami a postrzeganą kontrolą behawioralną jest nieistotny, badanie wskazuje, że poczucie własnej skuteczności moderuje korelację między postawą wobec przedsiębiorczości a intencją rozpoczęcia działalności. **Implikacje dla teorii i praktyki:** Oprócz wkładu w literaturę dotyczącą przedsiębiorczości, niniejsze badanie wnosi również wkład do praktyk i implikacji na uniwersytetach w Wietnamie. **Oryginalność i wartość:** Te odkrycia pokazują również, że teoria planowanego zachowania może być odpowiednio wdrożona w kontekście badawczym gospodarek wschodzących, takich jak Wietnam. Ponadto badanie pokazuje, że związek między postawą wobec przedsiębiorczości a intencją przedsiębiorczą jest moderowany przez poczucie własnej skuteczności.

**Słowa kluczowe:** poczucie własnej skuteczności przedsiębiorcy, intencje przedsiębiorcze, teoria planowanego zachowania, stosunek do przedsiębiorczości, normy subiektywne, postrzegana kontrola zachowania.

## Biographical note

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## Conflicts of interest

The author declares no conflict of interest.

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# How journalism experience translates to social entrepreneurship: An intention formation study of the Art Yard at Dadaocheng in Taiwan

Huei-Ching Liu<sup>1</sup>  and Chaoyun Liang<sup>2</sup> 

## Abstract

**Purpose:** In this study, the story of the Art Yard at Dadaocheng, Taipei, Taiwan, was adopted as a case study. We thoroughly investigated the founder, a former television reporter, and her social entrepreneurial intention (SEI) to initiate a social enterprise. **Methodology:** By integrating the two classic models of entrepreneurship intention, entrepreneurial event theory and theory of planned behavior, we investigated the antecedents of SEI (i.e., empathy, entrepreneurial alertness, entrepreneurial self-efficacy, social responsibility, and social capital and support). **Findings:** The founder possessed capability of communication and coordination because of her professional journalism experience and successfully introduced her passionate empathy and profound sense of social responsibility into her entrepreneurial aspirations. Her entrepreneurial alertness and self-disciplined entrepreneurial self-efficacy originated from in-service education and inspiration through action. Social networks accumulated during her journalism career did not represent the primary source of support when establishing her social enterprise. In this research, two additional antecedents of SEI were identified: knowledge capital and work experience. **Implications for theory and practice:** Social entrepreneurial attitudes can be developed on the basis of passionate empathy and social entrepreneurial alertness is required to address the professional development needs in service programs. Social entrepreneurial self-efficacy in communication and marketing management is closely associated with the journalism profession, and the journalistic passion for social justice can motivate social responsibility activities. Careful selection, maintenance, and transformation of business partners for social support are essential. **Originality and value:** A new

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*SEI theory was subsequently proposed for future research, and practical implications were addressed for social entrepreneurship.*

**Keywords:** *entrepreneurial intention, journalist, social entrepreneurship, the Art Yard*

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## INTRODUCTION

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Social entrepreneurship is thriving worldwide. From 1995 to 2005, the number of nonprofit organizations (NPOs) registered by the United States Internal Revenue Service increased by 53%. Many NPOs have changed their business operations with a slowdown in the global economy to create financial autonomy (Pen & Liang, 2019; Shapiro, 2012). The United Kingdom is often perceived as a pioneer of social entrepreneurship; the number of social enterprises established since 2005 has grown to over 13,000, three times more than ordinary small- and medium-sized enterprises. In the United Kingdom, there are approximately 70,000 social enterprises that contribute 2.4 billion pounds to the national economy and employ nearly one million people (Temple, 2017). Promoting social entrepreneurship is crucial for sustainable economic development in the Asia-Pacific region, particularly in highly urbanized areas such as those in Taiwan. However, few research studies have focused on this topic, and many questions remain unanswered (Liang, Ip, Wu, Law, Wang, Peng, & Liu, 2018).

The Republic of China is the legitimate government of Taiwan, although the People's Republic of China continues to claim that Taiwan is under its governance. Even though Taiwan has enjoyed rapid economic growth and democratization, both industrialization and democratization have created obstacles for sustainable development. For example, the implementation of environmental practices is impeded by numerous stakeholders with greatly divergent interests. Consequently, attention towards social entrepreneurship is increasing (Liang et al., 2018; Wu, Wu, & Wu, 2018). The Executive Yuan in Taiwan announced the 'Social Enterprise Action Plan' in 2014 to provide a clear definition of what constitutes social entrepreneurship. The objectives of Taiwanese social entrepreneurs include creating employment opportunities for disadvantaged groups, enhancing the self-sufficiency of organizations, and providing vocational training (Kuan & Wang, 2016).

Social enterprises are organizations aiming to resolve social problems by the action of social entrepreneurs who work to establish links between social missions and entrepreneurial actions in organizations (Liu, Liang, Chang, Ip, & Liang, 2020). The operation of a social enterprise must meet its social mission, which demands the pursuit of commercial profits (Carroll & Shabana, 2010). Giving priority to social responsibility is almost identical to the professional

conduct required of journalists. Under professional training in the workplace, journalists frequently make contact with socially disadvantaged and public interest groups. For news reporting, journalists must start from a point of truth and accuracy, independence, fairness and impartiality, humanity, and accountability (EJN, 2018). Smith (2012) indicated that many journalists who have changed their careers would most likely invest in NPOs. 84% of the participants in Smith's study believed that social entrepreneurship is increasingly important and would devote themselves to entrepreneurial goals to change the world.

Although journalism-based social enterprises, such as NeighborWebSJ, devoting themselves to social innovation and pursuing fairness and justice have increased in recent years, few studies regarding the engagement of journalists in social entrepreneurship have been conducted. This case study investigated the social entrepreneurial intention (SEI) of a renowned TV journalist through the story of the Art Yard at Dadaocheng, Taipei, Taiwan. The entrepreneurial goal of the Art Yard was to preserve the original appearance of traditional buildings and the local culture of 'Old Taipei' by attracting the young generation to engage in the community development movement. In this study, special attention was paid to the advantages and disadvantages of a journalism background when initiating a social enterprise in cultural and creative (C&C) industries. Classic theories of entrepreneurial intention were adopted: entrepreneurial event theory (EET) (Shaper & Sokol, 1982) and theory of planned behavior (TPB) (Ajzen, 1991). This study validated and expanded upon these theories through a case study of the transition from journalism to social entrepreneurship.

The research questions in this study are as follows:

*RQ1: What antecedents influence journalists' intentions to become social entrepreneurs?*

*RQ2: How do these antecedents affect the journalists' intentions?*

This article is structured as a formal academic report: first related literature is reviewed, then the research methods, results, and discussion are presented. The article ends with conclusions and reflections.

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## LITERATURE REVIEW

### Journalism and social entrepreneurship

News demands are immediate; therefore, mobility is paramount and a challenge in the lives of journalists. With the trend of digital convergence,

many journalists choose to leave media organizations in response to an uncertain future. Many of them transform themselves into self-branded journalists (Cohen, 2015), focusing on innovative media experiments or promoting public services, and rebuilding public trust (Fancher, 2010). They operate as social entrepreneurs (Smith, 2012) who use commercial methods to combine social and financial goals, and achieve community ideals and innovation (Alegre, Kislenco, & Berbegal-Mirabent, 2017). In particular, entrepreneurial journalists who left media organizations to start their own businesses mostly have 'changing the world' as their development goal. Without the boundaries set by media organizations, they often can emphasize the public interest and promote social values; this is trending towards the mainstream of news media in the next century (Liu, Chang, Liang, Ip, & Liang, 2019; Smith, 2012).

Journalists and social entrepreneurs share many similar qualities. Both of them attach value to social responsibility (Carroll & Shabana, 2010). Both of them are curious regarding the world and sensitive to problems in almost all aspects of society (McManus, 2015). Journalists and social entrepreneurs often have the opportunity to contact leaders from all walks of life and hear or witness innovative ideas and practices. They also often face budget pressures and continually changing network technology (McManus, 2015). Moreover, they both must be adaptable, highly creative (Berglez, 2011; Smith, Bell, & Watts, 2014), and possess diverse social networks (Mehrotra & Verma, 2015; Richards, 2013) to achieve their professional goals. Recent studies have found that journalists have strong self-efficacy and can creatively utilize their social capital to resolve complex social problems (Liu et al., 2019; Liu, Ip, & Liang, 2018).

### **Integration of EET and TPB**

The prerequisite for becoming an entrepreneur is intention (Fayolle, Gailly, & Lassas, 2006); therefore, this study investigated antecedents and their influence on journalists' SEI. Entrepreneurial intention refers to the determination and preparation to create a new business or add value to an existing organization (Krueger, Reilly, & Carsrud, 2000; Thompson, 2009). Entrepreneurial intention is a robust predictor of entrepreneurial behavior and guides entrepreneurship (Kolvereid & Isaksen, 2006; Krueger, 2007). In the context of this study, SEI refers to the conviction and preparation of a journalist to create a new social enterprise or transform an existing organization into a social enterprise.

EET, proposed by Shapero and Sokol (1982), is a well-known theory of entrepreneurial intention, in which perceived desirability, propensity to act,

and perceived feasibility are the three antecedents. Perceived desirability refers to the degree of attractiveness of an intended act to individuals. Propensity to act refers to the personal disposition to act on decisions in behavioral opportunities. Perceived feasibility refers to the degree of personal competence and resources necessary to accomplish the intended act. Another widely adopted model is TPB proposed by Ajzen (1991), which considers attitude towards the behavior, subjective norm, and perceived behavioral control as its critical antecedents. Attitude towards the behavior refers to the personal perception of the behavioral outcome. Subjective norm refers to personal perception regarding the expectations or pressure of valued reference individuals and motivation for complying with these referents. Perceived behavioral control refers to the personal perception of how well the behavior will be performed, encompassing the resource availability and self-efficacy required to perform the behavior.

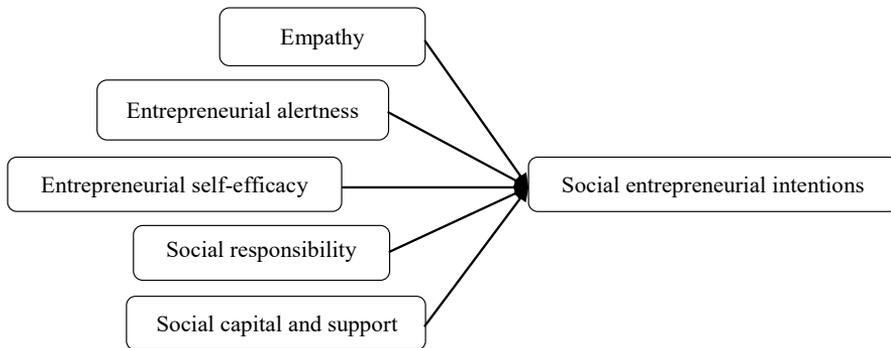
Studies have confirmed both EET and TPB to be robust models for detecting entrepreneurial intention and suggested that they be integrated into a theoretical basis (Marina, Solesvik, Westhead, Kolvereid, & Matlay, 2012; Mwatsika, 2015; Najafabadi, Zamanim, & Mirdamadi, 2016). Davidsson (1991) argued that perceived desirability in EET and attitude towards behavior in TPB could be integrated because they both concerned the expectation of the behavioral outcome. Krueger (1993) suggested that the concepts of perceived feasibility in EET and perceived behavioral control in TPB were similar, both referring to self-efficacy and resource availability required to perform the behavior. Therefore, the predictors of entrepreneurial intention, after we integrated EET and TPB, consist of entrepreneurial attitude (i.e., perceived desirability), propensity to act, subjective norm, and perceived behavioral control (i.e., perceived feasibility). Perceived behavioral control can be further divided into two dimensions: self-efficacy (intrinsic control) and social capital (extrinsic control) (Ajzen, 2002).

### **SEI research framework**

Taking characteristics of social entrepreneurship into account, Mair and Noboa (2006) proposed an SEI model based on TPB that has been adopted and tested by several studies in different countries (Forster & Grichnik, 2013; Ip, Wu, Liu, & Liang, 2017; Tukamushaba, Orobias, & George, 2011). Considering the context of social entrepreneurship, Mair and Noboa (2006) proposed to substitute entrepreneurial attitude with empathy to reveal the established means of thinking or feeling towards others. Empathy has been lengthily studied in the context of helping behavior and identified as an innate predictor of SEI (Liu et al., 2020; London, 2010; Miller, Grimes,

McMullen, & Vogus, 2012). In addition, scholars have suggested corporate social responsibility (CSR) as an essential antecedent of SEI because CSR is closely associated with the contemporary business context and government regulations (Liang et al., 2018; Singh, Majumdar, & Saini, 2017). Furthermore, the authors contended that entrepreneurial alertness should replace propensity to act because these two concepts concern behavioral tendency as it relates to an individual decision, but entrepreneurial alertness is much closer to entrepreneurship than is the propensity to act. Entrepreneurial alertness is an entrepreneur’s ability to identify opportunities that are overlooked by others through scanning and searching, association and connection, and evaluation and judgment of business information (Liang, Liang, & Liu, 2017; Tang, Kacmar, & Busenitz, 2012).

In summary, five antecedents of SEI were reviewed based on the aforementioned literature in this study: empathy (to replace entrepreneurial attitude), entrepreneurial alertness (to replace propensity to act), entrepreneurial self-efficacy (to replace intrinsic behavioral control), social responsibility (to replace social norms), and social capital and support (to replace extrinsic behavioral control). Figure 1 illustrates the research framework of this study based on the aforementioned literature.



**Figure 1.** Research framework of SEI

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## METHODS

The case of the Art Yard at Dadaocheng, Taipei, Taiwan, was adopted as the study focus. We systematically studied the founder’s SEI of initiating a social enterprise. The founder, a woman in her 40s, longed to become a journalist since her youth. Soon after graduating from a journalism program at a renowned university in Taiwan, she became a television reporter focusing on political news

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and was routinely rushed around the Presidential Office Building, Executive Yuan, and the Democratic Progressive Party Central Committee headquarters. During her first 5 years, she also served as an anchor and a talk show host. This experience and her outstanding performance led her to become the director of a political news center in her late 20s. However, during the 15<sup>th</sup> year of her journalism career, she decided to quit TV news work and transformed herself into a social entrepreneur with the intent of preserving local Taipei culture. In addition to her skill in addressing obstacles, she has acted simultaneously as a facilitator, activity planner, and resource integrator.

We integrated two theories of entrepreneurial intention (i.e., EET and TPB) as the theoretical basis for this single case study. We entered the field to observe, record, and clarify the application and problems of theories to refine them. We first participated in the Tua-Tiu-Tiann International Festival of Arts series held by the founder at the end of 2017, which included parades, stalls, a carnival, and community forums. In addition to taking observation notes, we recorded a video of events to be used as supplementary data for final analysis. We also collected all relevant press releases, brochures, and video clips regarding the Art Yard, as well as news reports from television, newspapers, and social media throughout 2018. All of this first-hand information served as data for triangulation validation.

Based on the aforementioned information and literature, we conducted two rounds of semistructured in-depth interviews with the founder. Semistructured interviews often begin with informal and unstructured interviewing to allow researchers to develop an understanding of the topic of interest necessary for developing relevant and meaningful questions in a flexible and responsive manner (Cohen & Crabtree, 2006). During the 100–150-min interviews, written consent forms were signed, and audio was recorded to transcribe them afterwards at the participant's workplace. The interview outline was developed to provide topic guides consisting of five prompts to facilitate the founder in elaborating on her views and experiences:

- 1) Empathy: Among numerous options, why did you eventually settle on the Art Yard as a C&C business venture? What about it did you find attractive and meaningful? How did you empathize with the local people in the target community?
- 2) Entrepreneurial alertness: How did the knowledge diffusion from sales to hosting events become a highlight of the C&C market? How do you identify business opportunities and create prospects for C&C products and services? How do you expand your accumulated experience?
- 3) Social responsibility: How do you control the quality of C&C products and services? What social returns do your products and activities emphasize?

- How do you utilize revenue? How do you invest the profits? What is the major contribution of the Art Yard to Taiwan's C&C industry?
- 4) Entrepreneurial self-efficacy: How confident were you in the early days of the Art Yard? How did you self-regulate during that period? How much time did it take and what approaches did you use to convince your family and friends to support you?
  - 5) Social capital and support: What opportunities and resources did you have before establishing the Art Yard? During the initiation period, how did you obtain financial support? How did you identify and utilize your business partners? How did you coordinate the division of labor among partners? How did you establish and how do you continue to expand the social network of the Art Yard?

After the field study, we collected all necessary data and proceeded with the following processing and analyses:

- 1) Information refinement: The collected data in audio and video form were converted into text. The in-depth interviews with the founder were transcribed, and the observation notes in the field were typed into Word format at the end of each event. Afterwards, the textual description was not modified, and the original appearance of the primary data was retained as the basis for analysis. To ensure data quality, each interview transcript was sent to the founder for confirmation and revision.
- 2) Content coding: After preliminary refinement and processing, the in-depth interview transcripts were coded, indexed, and mapped according to the steps suggested by Graham-Rowe, Jessop, and Sparks (2014) to create a grounded theory model of analysis comprising open coding, focus coding, and axial coding. In the final stage of axial coding, we selected five recurring themes as SEI antecedents for the developed research framework (i.e., empathy, entrepreneurial alertness, entrepreneurial self-efficacy, social responsibility, and social capital and support). This coding process was conducted by two members of the research team, each performing coding tasks independently to avoid influencing each other. Cohen's kappa statistical test was used to measure intercoder reliability of agreement (i.e., dependability). The Cohen's kappa of this study was 0.82 ( $> 0.70$ ), indicating a significant correlation ( $p < 0.01$ ) between the coders (Banerjee, Capozzoli, McSweeney, & Sinha, 1999).
- 3) Triangulation validation: During the indexing and mapping process, various sources of research data were compiled and compared for triangulation validation and theme emergence. The synthesized data were examined to identify explanatory factors. We treated factors other than the five identified antecedents as emerging themes. We also compared the transcripts with the reviewed literature to determine if any topics required further investigation. This process was carefully

conducted to ensure credibility and confirmability (Shenton, 2004). In addition, we used field pictures to illustrate the research context and field notes to describe the situations faced and the positions held by the founder to enhance the transferability for research outcome utilization in an evidence-based practical environment (Shenton, 2004).

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## RESULTS AND DISCUSSION

### Dadaocheng and the Art Yard

In this case study, the founder of the Art Yard worked as a political correspondent, middle manager, and television reporter at a television station for 14 years. She resigned from the station not because of the deteriorating environment of mass media or digital convergence (Cohen, 2015) but because of the influence of her husband, who was participating in political movements, and the pursuit of viewership by television news stations. After leaving the media outlet, she founded a political party and participated in the 2016 lawmaker elections but was ultimately unsuccessful. To maintain its operation, her party had to transition from its original form; social enterprise presented a promising option. The founder recalled that her experience when conceiving the Art Yard was a whimsical one, similar to that of other artists who have a tendency to rely on inspiration. The selection of Dadaocheng as the start-up location was purely an impulsive decision.

*'The headquarters of our party were close to the Legislative Yuan, so when we were starting up, we were often invited here (Dadaocheng) by friends ... My husband has an appreciation for old historic streets, and therefore, he visited Dadaocheng quite often.'*

During Japanese rule, Dadaocheng was a crucial port in the greater Taipei area of Taiwan, where various products from traditional industries were traded (e.g., textiles, tea, Chinese medicine, and foodstuffs). Individuals from numerous walks of life, such as street vendors, craftsmen, artists, and businessmen, started businesses at Dadaocheng. During its peak period of development in 1920, Dadaocheng contained several of the most prosperous commercial areas in Taiwan (e.g., Yongleting, Taipingting, and Gangting), which featured department stores, trading companies, and dozens of cinemas. Under the influence of the trend of urban development of the east side of Taipei after 1920, Dadaocheng began to lose its glamour. In recent years, Taipei City has designated many of its districts as urban renewal areas, one of which is Datong District, where Dadaocheng is located. To protect

historical and cultural heritage, the Taipei City government has implemented laws, regulations (e.g., property owners may apply for floor-area ratio transfer if their properties are designated as historic monuments), and incentive policies to encourage property owners to preserve historic property they own by repairing or reconstructing them to retain their original look.

## The five SEI antecedents

### *Entrepreneurial attitudes developed on the basis of passionate empathy*

Passionate about the historic streets, the founder and her business partners noticed several problems in Dadaocheng. The incentive policies for preserving historic landmarks through reconstruction promoted by the Taipei City government could only superficially maintain the appearance of old town houses instead of revitalize the former glory of Dadaocheng. In response to the decreasing number of visitors and challenges of operating shops at Dadaocheng, town house owners generally did not consider investing in reconstructing their buildings, because they would be unable to recover reconstruction costs. Thus, they tended to lack an interest in these incentive policies, allowing town houses at Dadaocheng to become dilapidated.

The founder not only understood deeply their situation but vicariously experienced their feelings. The founder transformed her empathy into C&C organization, products, and activities. She exhibited exuberant passion in each stage of preparation for establishing the Art Yard. All entrepreneurial behavior originated from a sense of identification and fondness for a certain C&C product. Empathy for a product drove her to learn more about it; she enjoyed the process of product development and transformed product research into a hobby. Generally, this passion agrees with the results of relevant SEI studies (Ip et al., 2017; Liang et al., 2018; Mair & Noboa, 2006). The founder said the following of her passion:

*‘Without fully understanding a product, you will never make it great. We make a product because we really like it. I try to understand it because I identify with it, and I believe it can not only represent Dadaocheng but also “Old Taipei.”’*

*‘When I understand the product more, I grasp more accurately its essence. For each product we make, we have held long hours of discussion with the design director. This has become an enjoyable procedure in the process of starting up our business. For me, it has become a fun process. We did not care much about management and budget issues right at the beginning. We enjoy the process of creating a work.’*

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*Entrepreneurial alertness to fulfil the needs of professional product development*

The displays of shops at Dadaocheng are generally old and outdated; shop owners prefer conservative business models and lack the motivation to transition their businesses. Therefore, they are unlikely to realize the value of creativity and innovation to the economic development of their respective industries. This leads to difficulties in maintaining businesses at Dadaocheng. Therefore, the founder established the Art Yard in 2011 as the first town house at Dadaocheng that serves as an entrepreneurial shop operating with a C&C business model.

*'The first town house, the Art Yard, was created after my husband and I stationed our business in the building with four groups of Taipei National University of the Arts (TNUA) students who specialized in cultural and creative development. We were at the stage of sharpening our tools, which means we were preparing for our start-up business, conducting product research and development, and finishing all of the preliminary procedures required for promoting our products in the market. After we had this town house, we combined all of the elements and entered the market ... From the final business outcomes, we saw that Dadaocheng does have sufficient cultural and entrepreneurial potential to be pursued and explored.'*

Entrepreneurial alertness refers to the ability to discover new business opportunities in a market and utilize such opportunities (Kirzner, 1997). Applying this theory to our case study revealed that the founder emphasized the originality and individuality of C&C products and distinguished them from other products through distinct market segmentation of customers, a finding consistent with results of prior research (Liang, 2019; Tang et al., 2012). When establishing her first brand, the founder even learned pottery-making techniques from a friend who was a ceramic artist. By learning through doing, the founder identified methods of cutting ceramic production costs and systemizing the manufacturing process.

*'If an artist creates a hundred artworks, all of them are different and unique. However, if you want to turn it into a brand and retain the same crafting method, then you must think of methods to build a systematic product development process ... You learn about the production process and then determine means of maintaining low costs as well as maintaining product quality during the production process without raising costs. We must devise various strategies, including packaging, product positioning, marketing, pricing, channeling, and promotion.'*

When employed as a reporter, the founder spent her free time and holidays investigating news events to keep herself abreast of the latest developments; however, she was never required to shoulder the burden of operating deficits as a business owner until she started her own business, which required her to sacrifice free time (which she sees as a necessary step), learn humility, and never lose focus.

*'As an entrepreneur, you are no longer off on Saturdays, Sundays, or even holidays ... You raise questions and learn when encountering things that you don't know ... Life is work, and work is life. You may have your mind on work in any second of life. Always keep alert!'*

*Entrepreneurial self-efficacy in communication and marketing management*

The founder claimed that in addition to product development, communication is the most crucial skill required for social entrepreneurship, which is a critical aspect of entrepreneurial self-efficacy (Drnovšek, Wincent, & Cardon, 2010; McGee, Peterson, Mueller, & Sequeira, 2009). Particularly, the founder attributed her communication skills to the professional training she received as a journalist:

*'The ability to express yourself is critical, because you must communicate with companies and suppliers as well as train employees and negotiate with partners. Communication skills are required for so many things.'*

*'In that work environment, we had to utilize communication skills to reach certain goals ... Simply put, we had to become quick-witted and readily responsive after receiving professional training at work. Moreover, we acquired logical reasoning and integration skills through the journalistic training.'*

During the interview, the founder exhibited rational and logical thinking. As if still a news reporter, she spoke fluently, eloquently, and unceasingly when facing the camera, but in a calm tone. When narrating her life's stories, she remained objective, as if covering a news story. When serving as the host of community forums, the founder does not introduce a speaker in an abstract and exhaustive manner; instead, she provides concrete information about the speaker's family background, type of business, and community agenda he or she intends to promote. Prior to a forum, the founder has in-depth discussions and develops a rapport with speakers. She also encourages local residents to participate in meetings and even become speakers.

According to the founder, marketing management ability enhances her SEI. Here, marketing management skills were demonstrated when she

organized a costume parade at the Tua-Tiu-Tiann International Festival of Arts. The parade, which took place on 14 October 2017, was a jointly organized event conceived and implemented by the founder and her business partners. The theme was '1920', the year at the height of Dadaocheng's development. Parade participants were requested to dress as celebrities from 1920 in blouses, overalls, and qipao, dresses with floral patterns. Despite heavy rainfall, more than 1,000 people attended the parade, which was broadcast live from multiple satellite news vehicles sent by television stations. On the same day, more than ten online news outlets covered the event with articles exceeding 300 words. The scale of the news coverage suggested that the parade gained sufficient media exposure. All the news articles covered the event by emphasizing its dedication to the history and culture of Dadaocheng in 1920, indicating that the promotional strategy achieved the original goal of cultural representation.

When describing her workload as a social entrepreneur, the founder remained at ease. She did not see the mix of work and life as a heavy burden. Instead, she regarded self-discipline as an essential element, concurring with recent studies (Liu et al., 2020; Pen & Liang, 2019). Her ease and self-discipline originated from not only confidence cultivated through her professional experience and dedication to continuous learning but also from her fervent and firm entrepreneurial attitude. She invested her time in things in which she had an interest, lending additional support to the latest research (Ip, Liang, Wu, Law, & Liu, 2018; Liu et al., 2020). By examining her work experience and continued learning, our case study elucidated the development of her self-efficacy, which showed similar patterns to those found by Wilson, Kickul, and Marlino (2007), and provided analytical results that are beneficial to establishing a research framework for investigating SEI. Describing her workload, she stated,

*'An entrepreneur definitely has less free time than an office worker ... because starting up a business requires considerable self-discipline. No one pushes you but yourself. You must be highly self-disciplined.'*

*Social responsibility resulting from the motivation of social justice and concern*

Since becoming a journalist, the founder learned concern for social justice. After leaving the media outlet for a social venture, she never abandoned her original intention to fulfill social responsibilities.

*'I wanted to be a news reporter since I was little ... I developed a strong social purpose by devoting to the action of upholding social justice or exposing unfairness or injustice. Therefore, our enterprise is oriented toward a business*

*for social purpose. [Our business] is expected to be both idealistic and realistic ... contribute to society with a social purpose, but also be commercially successful. This is our ultimate goal.'*

The founder elaborated upon her vision for fulfilling social responsibilities with a firm look and tone of voice. She applied her vision to operating her business. She only discussed information pertaining to the content and purpose of the cultural event when meeting former coworkers or subordinates during the costume parade. When asked about detailed business information, such as shop rental expenses, she intentionally avoided exploiting her media background to promote her business. Even during the in-depth interview, she emphasized her wish to skip topics that may reveal business secrets.

*'We all wish that the media covers more cultural and art information regarding Dadaocheng than business information that leads to commercial manipulation, because we are afraid that the rental prices in this area may be speculated upon.'*

Although a social enterprise requires profit to sustain its operation, the founder did not adopt a market-oriented approach when deciding which industry she intended to promote at Dadaocheng. Instead, she focused on adapting local traditions to generate alternative and novel value from the history, culture, and community of Dadaocheng. This mindset showcases her pursuit of social justice as well as the similarities between her as a journalist and a social entrepreneur, both of whom value social responsibilities and are concerned with people of all social statuses (Carroll & Shabana, 2010; Ip et al., 2018; Liang et al., 2018; McManus, 2015). When discussing this approach, she stated,

*'Can we design a pattern that instantly reminds people of Taiwanese style? We think that Coworker A has a great starting point for product design because he has a background in arts; thus, many of the products they have designed well suit the image of Yongle Fabric Market, a place in Taipei that sells textiles and fabrics. If well-developed, his products may drive innovation and motivate other people to innovate local traditions.'*

*Careful selection, maintenance, and transformation of business partners for social support*

Even a microenterprise requires business partners for proper business operation in the initial stage, during which business partners are essential to business development. The founder discussed her selection and coordination with business partners:

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*'Many party members were friends that supported our vision. A great number of them were artists ... When initiating the political movement, I was studying at TNUA, during which I made acquaintances with numerous artists and young people at the university ... After our political reform ended, I had the idea of starting a business, which did not seem difficult at all since we had already started a political party by ourselves.'*

*'We have certain principles for selecting business partners. First, our partners must possess potential for social entrepreneurship, which means that they should have courage and determination. Second, being a partner is a full-time job; thus, our partners must protect their reputation for the business they intend to develop ... In particular, we want them to have the ability to solve problems and be a leader. We sought business partners that did not intend to chase market trends and cater to the market ... For a start-up business, following others' paths means failure and complete loss of an entrepreneurial niche.'*

Only if the partner candidate meets the aforementioned criteria would the founder further evaluate whether the person exhibits the creative capacity for the previously described market segmentation. The founder abandoned her tendency to take control as a middle manager by modifying her attitude towards collaborating with other businesses. When collaborating with partners from various industries, the founder inevitably had arguments with partners in the processes of communicating and coordinating in the initial stage; however, she formed strong trusting relationships and reached agreements through negotiation:

*'Now, when supervising young business partners, I often give them the freedom to fail even when I know they will inevitably take a fall. I think that after one fall ... they might proceed down a road they never imagined ... as long as they manage to stand up again after the fall.'*

*'When operating a small business, we express our feelings and opinions in a straightforward manner. Everyone responds readily and follows directions immediately without administrative red tape. We develop teamwork quite rapidly. Sometimes you may overstep your authority to others. They may argue with you by stating that they have a clearer picture than you do, because these are their responsibilities as opposed to yours. Everyone has their own style of doing things, or they see things differently when making a certain decision ... This happens not just between my business partners and I; even my husband argues with me frequently, which is very common during the process of starting a business. With a solid cooperative relationship based on trust, we never hold grudges after a fight, because we do not take things personally.'*

All conflicts and disputes ended in reconciliation through communication. The founder has a solid relationship with her business partners but also a friendly relationship with local residents of Dadaocheng. She described this relationship as follows:

*'Dadaocheng is like a small rural town in Taipei. When dining in a local restaurant, I am often treated to additional side dishes by the restaurant owner. They are more like a friend or family member than a business partner.'*

This statement can be confirmed by her interaction with local business owners at the festival. They asked to take photos together and even offered her merchandise as gifts; this demonstrates a high level of trust and anticipation of cooperative opportunities. Owners proactively presented new products or business visions to the founder. Instead of merely exchanging pleasantries, they had conversations that suggested candid relationships. Unlike quantitative studies that have focused on the effects of social capital and support (Ip et al., 2017; Liang et al., 2018; Liu et al., 2018), the present study captured the dynamic process of establishing and maintaining social capital and support in social entrepreneurial activity and thus may provide insights into further research.

In addition to business partners, other social capital should be mentioned. Studies have confirmed that social capital is a beneficial resource that facilitates entrepreneurial activity among entrepreneurs and promotes an entrepreneurial spirit. Social capital is particularly beneficial for exchanging knowledge, identifying business opportunities, networking, establishing reputation, and improving performance (Partanen, Möller, Westerlund, Rajala, & Rajala, 2008; Shaw, Lam, & Carter, 2008). When she was a journalist, the founder met individuals from diverse backgrounds, allowing her to possess more social networks than the general public. She noted that she was advantaged in the initial stage of her social business, because she had easier access to media resources.

*'We have an advantage in social networking. We have more networking resources than the general public does, whether it is cultural or social capital. If reporters cover our event, most of them are our friends ... We do have certain advantages in accessing media resources.'*

The social networks that the founder obtained from her previous job as a political correspondent and middle manager did not provide substantial benefits for finding business partners or funding during the initial stage of establishing the Art Yard. She intentionally avoided using resources provided by

media practitioners or agencies with which she had connections. She discussed the gradual establishment of the town homes and her attitude towards media:

*'As a microenterprise, we did not require large funds. We now own a total of eight town houses, but actually, we established them one by one. The Art Yard is the first town house. We did not lease the entire building at the beginning ... At first, we only leased the second floor, then the third floor, and lastly the ground floor. Luckily, the ground floor was still available.'*

*'If we consider Dadaocheng as a site for business incubation ... time is required to create a business incubation hub for young entrepreneurs ... Particularly, we want to create an environment with no entry barriers ... but if this hub is established too quickly and is covered too frequently by media, then it will be turned into a target for speculation by local real-estate owners. Once the rental prices increase, this will pose a substantial threat to entrepreneurs ... Actually, mass media is a double-edged sword; it brings benefits but also begets threats.'*

The founder accumulated abundant social and media resources from her previous job as a reporter. However, these resources did not directly benefit her startup business during the initial stage. The partners she recruited were all people she met after leaving the field of media. She did not obtain funds from any of the social resources attained in her previous job. After realizing from practical experience that 'media is a double-edged sword' that creates both advantages and disadvantages for the C&C industry and community cultivation, she avoided overusing the existing resources she had accumulated. Instead, she created social capital for her startup business by finding new resources. Her approach serves as impact of social capital on entrepreneurial intention (Liu et al., 2020; Partanen et al., 2008; Richards, 2013) and can inspire further discussions on how social capital creates public value and contributes to society.

## **New SEI antecedents**

### *Knowledge Capital*

In addition to the five SEI antecedents identified from the integration of EET and TPB, two themes emerged during the analysis: knowledge capital and work experience. During her journalism career, the founder spent free time studying news events to keep herself abreast of the latest developments. This custom originated from the knowledge she gained as a journalism student. The founder's competent communication and marketing management, as well as her social

justice and concern, were cultivated during that period. Her knowledge capital of journalism greatly facilitated her SEI, a finding that is consistent with those of previous studies (Christopoulos & Vogl, 2015; Kuckertz & Wagner, 2010). Furthermore, in managing her start-up business, the founder demonstrated high levels of entrepreneurial alertness towards business opportunities and entrepreneurial self-efficacy in tasks similar to those she faced in her early career as a journalist. She often felt thankful for her journalism career, which had developed her capacity to adapt to social entrepreneurship:

*'It is rather easy for a media practitioner to succeed in transitioning into a social branding or marketing role in a start-up company ... The knowledge and living customs cultivated as an undergraduate were quite helpful in developing my capacity to become a social entrepreneur.'*

To further transform her products into a brand, she elevated her knowledge capital regarding business management through continued education at a university after establishing the Art Yard. She met many young artists who eventually became her business partners. Social networks have helped the founder to identify and work on new business opportunities with confidence. She spoke of her education:

*'I even took accounting classes at TNUA for the purpose of acquiring more product management knowledge ... Many young artists we met at TNUA supported our business, so we found many young partners there ... We collaborated for one or two years ... For instance, we have a friend who works at our machinery supplier, and one of our collaborating designers is a TNUA student who asked his friend to help design the interior of our shop. Their professional assistance helped me to recognize new opportunities in the market and to increase my confidence.'*

As mentioned earlier, journalists and social entrepreneurs have similar attributes. Both groups attach value to social responsibility and often empathize and have contact with disadvantaged individuals from all walks of life (Carroll & Shabana, 2010; McManus, 2015); hence, knowledge gained from the journalism program has enhanced her ability to empathize.

### *Work experience*

Journalism work experience was the second emerging antecedent that greatly affected the founder's SEI; this finding is supported by prior research (Hockerts, 2017; Kuckertz & Wagner, 2010; Yitshaki & Kropp, 2015). To the founder, journalism experience most influenced her entrepreneurial self-

efficacy, particularly that of communication and business management. A television news report lasts only 1.5 minutes on average, requiring a reporter to comprehensively narrate a news event and attract viewer attention within a short time; that is, a news reporter must be readily responsive. High work efficiency is an advantage for a journalist transitioning to another field (Liu et al., 2020). The founder applied this expertise to establishing her own brand.

*'We make quick judgements ... I believe that our television news report training taught us to collect and interpret information, think, and make decisions immediately, which is positive for work efficiency.'*

*'What I am doing is brand establishment. [As former reporters], we know how to package a brand and ensure that the public receives our message positively or favorably. This is a skill that we learned from fields. An artist may not have such a skill ... If a journalist possesses specialized techniques, such as fashion design ... this may be helpful for developing new product and starting a business.'*

Although she pursued high efficiency, the founder retained blind spots and consequently made erroneous judgements. The tendency of journalists to pursue work efficiency, the founder claims, can lead to stubborn opinions in the context of starting a business and increase the likelihood of misjudgment and lower the tolerance for failure.

*'When we collect information too hastily, we tend to make self-righteous judgments that we think are accurate ... This is actually risky for a start-up business, because great opportunities for collaborative projects may be missed because of these subjective judgments... Therefore, I later adjusted my approach ... because I think that my previous approach may have led to blind spots ... and prevented me from making complete judgments, resulting in misjudgment for opportunity recognition.'*

*'[We] may become too opinionated or bossy. When I want every member to follow my directions, some of them cannot propose better ideas. In the field of media, we tend to be really careful at work, because we cannot afford to make any mistakes.'*

*'Taiwanese entrepreneurs generally cannot embrace failure when starting up a business. They treat failure seriously and associate it with complete and utter failure with their life or bankruptcy. Westerners and our friends from Silicon Valley regard entrepreneurial failure as a positive experience, because you only learn great lessons through failure.'*

Although the founder considered the possibility of misjudgment, overtly stubborn opinions, and low tolerance for failure as factors that impede journalists from creating a business, she also noted that journalists have substantial potential for handling administrative work through the integration of social supports in a start-up business.

*'During the starting up process, I collected several knowledge management tools ... Any media practitioner could collect them immediately, because as I said, we are skilled at networking to solve problems and find solutions. Our resource integration and logical reasoning skills enable us to make quick decisions. We increase administrative efficiency considerably at the initial stage of starting up.'*

The following is another example showing how professional journalism experience benefits SEI. During the festival, the founder visited each shop's booth and had a face-to-face discussion with shop owners regarding the products they intended to release in the near future. For instance, Shop A planned to release a series of retro matchboxes, for which the packaging was designed to depict the story of the owner's grandfather establishing a local film and television company. After listening to the backstory of the product and empathizing with the owner's inspiration, the founder immediately identified a candidate writer (social capital) from her mental database and formulated a concrete plan for cooperating with the writer (entrepreneurial alertness). Through listening and discussion, the founder accurately grasped the product philosophy of the owner of Shop A and formulated promotional strategies that were acceptable to the owner. She later assisted Shop A in planning and executing the launch event for the new products (entrepreneurial self-efficacy). Thus, she not only achieved the goal of innovating a traditional industry but also increased the willingness to repair and reconstruct Shop A's old town house (social responsibility).

Previous studies (Hockerts, 2017; Ip et al., 2018; Liu et al., 2020) have identified prior experience with social problems as a predictor of empathy, entrepreneurial self-efficacy, and social capital and support. This study's finding extends the research by suggesting that work experience can also serve as a predictor of entrepreneurial alertness and social responsibility.

## CONCLUSIONS AND REFLECTIONS

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The journalist in this study chose to abandon the media aura to create a social enterprise and realise the public value of self-identification. The process of

social entrepreneurship is not like the one imagined by outsiders in which a journalist can transfer rich social networks and resources accumulated in the media world for use in a social venture to accelerate success. An entrepreneur must identify and build necessary resources conducive to the development of social entrepreneurship. The founder of the Art Yard exemplified this when she established her social enterprise at Dadaocheng.

Analyzing the case study reveals that the founder successfully introduced her passion and empathy and profound sense of social responsibility into her entrepreneurial aspirations. Accordingly, her keen entrepreneurial alertness and self-disciplined entrepreneurial self-efficacy came from in-service education and inspiration through action. As for the social networks accumulated during her journalism career, this social capital was not her primary source of support when establishing her social enterprise. We identified two additional SEI antecedents in the current study: knowledge capital and work experience. These two new antecedents, based on our interpretations, may also serve as the precursors of the five original SEI antecedents.

This study expanded the findings of prior research, but also has some limitations to note. First, the case study method typically incurs biases caused by researcher subjectivity or the time-consuming process. Even if the researcher tests repeatedly for credibility, transferability, dependability, and conformability, a case study remains limited by the chosen methodology. Second, the current study was also limited because we only included one social entrepreneur. A larger sample of social entrepreneurs would have been preferable to a single entrepreneur, even if that entrepreneur has been recognized as one of the most representative social entrepreneurs and as the first journalism-major social entrepreneur with related work experience in Taiwan.

This study has revealed six practical implications. First, social entrepreneurial attitudes can be developed on the basis of passionate empathy because journalists have a natural interest in the world and are sensitive to diverse systems and societies. Second, social entrepreneurial alertness is required to address the professional development needs in service programs, which include activity design, product sustainability, service delivery, and social ties. Third, social entrepreneurial self-efficacy in communication and marketing management is closely associated with the journalism profession. Fourth, the journalistic passion for social justice can motivate social responsibility activities in almost any aspect of society, particularly in terms of environmental and local cultural matters. Fifth, careful selection, maintenance, and transformation of business partners for social support are essential. Sixth, the knowledge capital and work experience gained through journalism benefit social entrepreneurship.

This study has contributed to entrepreneurship theory by successfully integrating both EET and TPB, revising the variables, and validating the effectiveness of the integrated model. In the future, a multiple-case study should be conducted; that is, more journalism-major social entrepreneurs with professional experience should be studied to confirm the influence of knowledge capital and work experience on SEI. In addition, it could be quantitatively tested to determine how knowledge capital and work experience affect SEI through the mediation of empathy, entrepreneurial alertness, entrepreneurial self-efficacy, social responsibility, and social capital and support.

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### **Abstrakt**

**Cel:** W tym badaniu jako studium przypadku przyjęto historię Art Yard w Dadaocheng w Tajpej na Tajwanie. Dokładnie zbadaliśmy założycielkę, była reporterkę telewizyjną i jej zamiar przedsiębiorczości społecznej (SEI), aby zainicjować przedsiębiorstwo społeczne. **Metodyka:** integrując dwa klasyczne modele intencji przedsiębiorczości, teorię zdarzeń związanych z przedsiębiorczością i teorię planowanego zachowania, zbadaliśmy poprzedniki SEI (tj. empatię, czujność przedsiębiorczą, przedsiębiorczą własną skuteczność, odpowiedzialność społeczną oraz kapitał i wsparcie społeczne). **Wyniki:** Założycielka posiadała zdolność komunikacji i koordynacji dzięki swojemu doświadczeniu w dziennikarstwie zawodowym i z powodzeniem wprowadziła w swoje aspiracje przedsiębiorcze pełną pasję empatię i głębokie poczucie odpowiedzialności społecznej. Jej przedsiębiorcza czujność i samodyscyplina przedsiębiorczej własnej skuteczności wywodzą się z doskonalenia zawodowego i inspiracji poprzez działanie. Sieci społecznościowe nagromadzone podczas jej kariery dziennikarskiej nie stanowiły podstawowego źródła wsparcia przy zakładaniu jej przedsiębiorstwa społecznego. W tym badaniu zidentyfikowano dwa dodatkowe poprzedniki SEI: kapitał wiedzy i doświadczenie zawodowe. **Implikacje dla teorii i praktyki:** Postawy związane z przedsiębiorczością społeczną można rozwijać w oparciu o empatię, a czujność przedsiębiorczości społecznej jest wymagana, aby zaspokoić potrzeby rozwoju zawodowego w programach usług. Poczucie własnej skuteczności społecznej przedsiębiorczości w zarządzaniu komunikacją i marketingiem jest ściśle związane z zawodem dziennikarza, a pasja dziennikarska do sprawiedliwości społecznej może motywować do działań z zakresu odpowiedzialności społecznej. Niezbędna jest staranna selekcja, utrzymanie i transformacja partnerów biznesowych do wsparcia społecznego. **Oryginalność i wartość:** Zaproponowano nową teorię SEI ukierunkowaną na przyszłe badania i zajęto się implikacjami praktycznymi dla społecznej przedsiębiorczości. **Słowa kluczowe:** intencje przedsiębiorcze, dziennikarz, przedsiębiorczość społeczna, dziedziniec sztuki

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### **Conflicts of interest**

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# The developing speciality coffee businesses of Bangkok, Thailand and Penang, Malaysia. A story of entrepreneurial passion and creativity?

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## Abstract

**Purpose:** This paper considers the recently emergent speciality coffee industry in Bangkok, Thailand and Penang, Malaysia. It addresses the research questions of what are the motivations and attitudes of small, entrepreneurial, speciality coffee business owners in both countries. **Methodology:** The study's methodology was interview-based qualitative data gathering with no pre-determined hypotheses. Interviews were semi-structured. Questions considered motivations and attitudes variously but particular points of focus were passion and creativity. Analysis was through thematic content analysis. **Findings:** The main findings were that participants considered themselves to be passionate and creative, wanted to educate about coffee (the primary finding) and have no expectation and little hope of becoming wealthy through their coffee enterprises. Their focus was on other elements of happiness than money. It transpired that their passion was not an entrepreneurial passion, financially driven, but a passion for craft skills and production, and attendant lifestyles that were simply not concerned about income maximisation. **Implications for theory and practice:** It presents a potential view of entrepreneurship at major variance with the views of classical economics. Few entrepreneurs interviewed saw their businesses as having potential for wealth creation. Concerns to maximise income or profit were not prevalent. These were not the financially driven entrepreneurs of classical economics. Their focus was on their craft and its skills. All understanding of the mindset of the small speciality coffee business owners and creators is an insight of substantial practical importance, for instance, to those seeking to supply to them and perhaps other similar small businesses, or to advise them, including Government and Local Government advisory services. **Originality and value:** The question set for

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*this study had never been asked before, so the study is unique within the industry. Its value lies in two areas, the practical real world of business, as mentioned, and for future researchers in entrepreneurship. With these small businesses built from lifestyle concepts rather than classical economic concepts, notably of income or profit maximisation and scale appropriate to those, strong doubt is thrown on the validity of those classical economic views. An important value in this study is precisely that it drilled down and struck a plethora of motivations and attitudes informally held by entrepreneurs, people of a type that do not usually inform studies of entrepreneurship but may inform future researchers, particularly when reviewing the growing body of small artisanal and craft businesses.*

**Keywords:** *passion, creativity, speciality coffee, craft businesses, entrepreneurship, craft skills, small business*

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## INTRODUCTION

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Research undertaken in 2019 considered the speciality coffee industry in Penang, Malaysia, and Bangkok, Thailand. Both countries are neighbours within ASEAN, and have long histories of coffee production. The research questions were what motivates the entrepreneurs in the new speciality coffee industry and what are their attitudes? The background is that it would be easy to assume there is little space within the market for new entrants. Starbucks, for instance is ubiquitous. Saying that though assumes normal commercial motivations by the newcomers. In fact, though their motivations may not be strictly commercial but more akin to those of say craft beer makers (Watne, Hakala, & Kautonen, 2012), driven by passion and/or the desire to express their creativity. Passion and creativity became main drivers in the researchers' consideration of the speciality coffee entrepreneurs and were likely the main drivers in their entry into the marketplace, but no formal hypotheses were made. The participants were to speak for themselves in a qualitative survey. Speciality coffee entrepreneurs had not received such research attention before, and this despite coffee having a long history that was both passion-filled and highly creative, giving to posterity say The London Stock Exchange and Lloyds of London, the insurance market place.

### *Early coffee entrepreneurialism*

Arguably, since the earliest days of coffee, possibly around AD 850 (Nzegwu, n.d.), its story has been one of entrepreneurial passion and creativity and, thence, the development of commercial acumen or adaptation of it to the specifics of coffee supply chains.

Claims to be the originator of coffee lay with both Ethiopia and Yemen. Perhaps the Ethiopian foundation story is the most often repeated. It involves the story of Kaldi, a goatherd who noticed his goats were more alert and frisky after chewing berries from a particular plant. Kaldi involved a local monastery. The monks perfected brewing from the berries and, thereby, coffee was born complete with the monks as brand ambassadors to press its case.

Yemen has two coffee-origin narratives (Goodwin, 2019). One is similar to the story of Kaldi, except this time excited birds were seen. The second Yemeni narrative is based around Sheikh Omar, a doctor–priest from Mocha, who had been exiled. Close to starvation, he tried the red coffee cherries to caffeinated effect. The story of Omar and his revitalising beverage reached Mocha, his exile was lifted and he returned to the city. Coffee came to be regarded as a miraculous curative and became a major export of Mocha, a port city. Coffee bean was grown in Yemen and land-based export routes also developed from Yemen into South Asia, about the Middle-East and also into Europe (“History of Coffee”). By the seventeenth century coffee was establishing in Europe.

England, particularly London, arguably became best known for the coffee shops as “penny universities” (“The History of Coffee”), places for highly erudite conversation, perhaps political or philosophical. However, they also had an innovative commercial side as places to develop and transact business. London coffee houses of the seventeenth century spawned the stock exchange, insurance industry (Lloyds) and auctioneering (Green, 2013). They were a significant London presence with around 550 coffee houses (Inwood, 1998).

In Holland, coffee was considered more as a traded commodity than a beverage. The early coffee houses in Holland were highly associated with business, and particularly located in business areas of Dutch cities (Arat, n.d.). Financial products developed early as adjuncts to or derivatives from the trading, creating the class of merchant bankers.

### *Coffee entrepreneurialism in the twentieth and twenty-first centuries*

Profound innovation struck the coffee retail industry in the early twentieth century with the advent of the espresso machine, first produced in 1905 (Morris, 2008). This enabled preparation of coffee for individual customers. Previously coffee could only be batch prepared. The Gaggia Classic Espresso machine of 1948, allowed the production of crema under the pressure of nine atmospheres (Morris, 2007). Additionally, frothy coffee such as cappuccino or latte was possible using milk and the espresso machine’s steam wand.

Coffee’s more recent history has been seen in terms of waves. The First Wave refers to the commoditisation of coffee, but, in fact, for home

consumption, using commodity bean, processed for easy and speedy use in the home. “Instant” was perhaps a bye-word. Association may be made with, for example, Maxwell House and Nescafe. The Second Wave marked a change of location focus to coffee shops, accompanied by a marked up-trend in quality and variety of beverages available, even if from a coffee base, usually espresso. Starbucks typifies this coffee phase.

Moving forward, arguably, to the present and the advent of the Third Wave, there is confusion. That includes whether the coffee industry has now reached a Fourth Wave. Many characteristics are suggested, for instance concerning the rise of scientific understanding and technological improvement, maybe in roasting or water treatment for consistency. Equally, the Third Wave may be seen in terms of very high standards of presentation or customer service. There might also be concern for the supply chain, “from farm to cup,” and for its sustainability and equity.

Ultimately, the balance lies between individuals and nationalities. In, arguably, highly nationalistic Thailand, it is very usual to find roasters and coffee-shop owners who are deeply concerned about promoting local coffee and coffee farmers. This is not found in Malaysia. Across both Thailand and Malaysia, this study found huge concern for customer service. On the other hand, a visit to perhaps the world’s most technical roaster, Tim Wendelboe, in Oslo, produced the comment “... but I missed a bit of customer service here. The girl helped me as fast as possible, so she could do her other tasks” (Giljam, 2018).

The researchers’ conclusions are that if the specialty coffee industry is moving toward a Fourth Wave or has reached it, that may increasingly be seen in terms of technical process at the farm. Innovations there though are often in collaboration with middlemen and roasters further down the supply chain. There may be both technical and financial input. “From farm to cup” supply chain cohesion is ever more a reality and is one promoting sustainability and equity across the supply chain.

All this said, the involvement of the Third Wave in presentation must not be underestimated. That may mean presentation of the coffee, for instance to include latte art, but also presentation of the premises. Theng (2018) looks to both interiors and often exteriors of premises and speaks of a range of presentational ploys, stylistic choices by way, for instance, of materials, typography and monochrome “colour” palettes, the messaging of which mean that an independent Third-Wave coffee shop cannot be missed. Both presentation of the premises and the coffee is likely to have an eye to being picture-worthy for Instagram, a major attractant of customers in the food and beverage industries (e.g. Churchard, Townshend, & Stone, 2018). Johnson (2019) has been specific about the coffee industry extolling Instagrammability

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and offering creative backdrops for the Instagram photographer from feature walls to coffee's technical equipment.

This study found participants very divided on Instagram, some for, some against, others seeing it, reluctantly, as a marketing necessity, particularly in the early days of a business in the internet, and specifically social media, age.

### *Speciality coffee entrepreneurship*

Notwithstanding the foregoing, the defining element in coffee's Third Wave is speciality coffee sale, the determining factor to be a participant in this study, the research questions of which were what are the motivations and attitudes of small speciality coffee business owners in Bangkok and Penang.

Speciality coffee is defined by a Specialty Coffee Association of America cupping value of 80 points and above. In reality, other characteristics are associated with speciality coffee, most notably the Arabica coffee bean, but also, for example, single origin, multiple national origins, traceability and possibly light to medium roasting might be considered, together with a proliferation of methods of brewing, such as V60, Aeropress and siphon.

Behind that key element, in the speciality coffee business, lies another key, attitudes and motivations of individual coffee shop and roaster entrepreneurs, though perhaps as important, aligning with the work of, for example, Bhansing, Hitters and Wingaarden (2017), is those entrepreneurs operating in a supportive environment. That environment may include the support of other entrepreneurs in the same or cognate industries in a corpus of "localised passion" (Bhansing et al., 2017). Bhansing et al. (2017) considered co-location in Creative Business Centres, but maybe location does not have to be physically as proximate as that, with relevant networks building within the industry, say in a city or across a number of centres within a region. That certainly appears true within speciality coffee. In Bangkok and Penang, everybody seems to know everybody else. They are supportive of each other. The researchers also found substantial connectedness between Bangkok and Penang, and could adopt snowball sampling between the two. In Penang, two speciality coffee shops have worked jointly to send the clients of both shops off on a long weekend trip to a Malaysian coffee-growing region. Perhaps it is important to consider that not only do the entrepreneurs have a shared passion for coffee, as they say, but much wider shared attitudes than just in business are likely. For instance, as a tight millennial grouping (see demographics for participants below), they are likely to be highly attuned to collaborative working and efforts (e.g., Simpson, n.d.).

## LITERATURE REVIEW

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The literature review was immediately limited by a lack of relevant coffee-industry academic literature, meaning studies of speciality coffee and artisanal coffee production. There has been much academic research on coffee's First Wave. There are 377 Google Scholar entries for Nescafe and Maxwell House, who offer instant home coffee-making products. Even where speciality coffee products are used at home they require special equipment for both pour and espresso and require high levels of skill from the operator. There has been even more research on coffee's Second Wave. There are 131,000 Google Scholar entries on Starbucks alone. Starbucks is currently a chain of 24,000 shops. Oden (n.d.) has considered the differences between Starbucks and speciality coffee shops. A key is Starbucks' vast scale and speed of growth. Of necessity that scale produced an indiscriminating delving into the bean supply chain and one that favours consistency over quality. Relatively dark roasting was adopted to mask differences and create a uniform flavour profile. This fitted not only supply-side demands but marketing ones in that the Starbucks niche was perceived as mass-market avoiding specific flavour notes and so becoming a brand for coffee snobs. People do not go into Starbucks to discuss the finer points of Costa Rica's composer series or to taste Mozart, Beethoven or Bach. Starbucks is the antithesis of speciality coffee businesses and as such information on it is irrelevant when researching speciality coffee. Perhaps the narrative can be simplified to one of uniformity (Starbucks) versus passion, creativity and difference, even quirkiness, from the speciality coffee shops and coffee roasters.

Maybe the uniformity of Starbucks and the quirkiness of individual owners and roasters are polarities. Certainly, creativity has been seen for much of the duration of the academic study of creativity as concerning an individual's character traits, precisely the approach of J P Guilford and E P Torrance, who are regarded as the founders of contemporary academic consideration of creativity. Much has simply followed them from 1950s USA forward in time and across locations. Both authors perceived creativity as deriving singularly from individual character traits and were concerned about measurability. Both were concerned to devise psychometric tests for individual creativity, e.g. Guilford (1950) and Torrance (1974), or that might imply creativity or predict it. Divergent individual thinking was taken as a particular indicator.

The environment within which the individual thinks went unconsidered. That includes both its effects on the individual in an "individual" pursuit of creative aims and ideas, and the notion that creativity can be generated by groups, knowingly and unknowingly. Externalities (to the individual) are important (Amabile, 1983). The composer Tchaikovsky gave a simple example

in railing about the negative consequences of being interrupted whilst composing (Tchaikovsky, 2004).

In fact, Amabile and Pillemer (2012) conceded that, “examination of social and environmental influences on creativity has become increasingly vigorous.” Sternberg’s work is often cited as a good example of this slow creep. From 1991, he was proposing (Sternberg & Lubart, 1991) a confluence approach in creativity. Six distinct resources come together to produce creative outcomes, with those including environment. Environment is seen as “an environment that is supportive and rewarding of creative ideas” (Sternberg, 2006), so very much focused on the surrounding human landscape of support, feedback and reward, which might be a very limiting view of “environment.”

A point is still missed, that of the human landscape also contributing ideas as opposed to just supporting the creator and his or her ideas. Co-creation has to be brought forward. Kucharska (2017) has considered co-creation within companies where there are high levels of trust and, thence, collaborative inclination between individual employees. The same can happen between businesses (Baljko, 2010). Collaboration has become a key concept in advanced supply chains, but the focus has been on matching demand and supply (Fisher, Hammond, Obermeyer, & Raman, 1994) through such devices as real-time data transmission across a transparent supply chain. However, there are many possible levels of supply chain involvement, structure and structured access. At the highest level there can be strategic collaboration, in product design and re-design, e.g. Apple and Foxconn. Freda Yuan of Origin speciality roastery and coffee shops has said, “By working directly with the farmers, we can create a supply chain that is not only sustainable, but develop a relationship that can enhance the quality of the coffee produced” (Yuan, n.d.). Normal collective practices and co-creation are concerned to increase cupping values and relate well with customer flavour preferences. Union Coffee put it thus: “We call ourselves Union because we couldn’t make great coffee without our partners—the farmers that grow the exclusive gems we share with you. In return, we pay them a fair price so they can invest in their farm, families and workers. We work with our partners long-term, towards constantly improving the quality of coffee and livelihoods.” (“Hello, we’re Union Coffee”). However the researchers’ contention is that speciality coffee presentation, origin and bean focus, roasting levels, premises décor, come out of informal contact as much as formalised relationships, not to mention internet use and magazine reading reaching a wider group of “speciality coffee people.” Drift magazine is something of an industry bible. A face-to-face example is that of Jasmine of Lunabar, Penang and Joachim of Spacebar, Penang using each other’s coffee shops, attending with friends, talking about coffee but also about anything else friends talk through. They cross-pollinate

and they co-create. The latter is exemplified by combined weekender trips for their clients, and, of course, white décor

Turning now to Passion it must be emphasised at the outset that the academic literature on Passion is often confused, particularly failing to distinguish properly between Passion and Creativity. A robust clarification is required that Passion and Creativity are not one and the same. Passion acts on motivation (e.g., Kunat, 2018). Passion is taken to refer to a strong need for action deriving from personal likes and considerations of importance, so motivating huge investments of time and effort (e.g., Vallerand, 2010). Vallerand's Dualistic Model of Passion (e.g., Vallerand, 2010) posits harmonious passion and obsessive passion, the former referring to a passion that is within the subject's control, chosen freely and balanced with other aspects of life in working toward positive and satisfying outcomes. Those passion-derived work processes might be considered as creative. New ideas and innovations are triggered. Passion stimulates entrepreneurs to overcome challenges and to stay engaged.

All this said, Cardon, Wincent, Singh and Drnovsek (2009) claim that the literature to that point had been unclear in several ways, for instance discovering and outlining processes by which outcomes are influenced by passion. Some writers have, in considering process pressures from passion such as working long hours (e.g., Bird, 1989), might even have discovered a negative.

Cardon et al. (2009) are disposed to consider positives but see positive passionate feelings as deriving not from inherent disposition toward those feelings, in other words a trait, but arising because entrepreneurs are "engaged in something that relates to a meaningful and salient self-identity for them" (Cardon et al., 2009). It follows that Cardon et al. (2009) consider entrepreneurial role identities that might offer such meaningfulness and salient self-identity affirmation to individual entrepreneurs. They suggest three such role identities, that of an inventor, that of a founder and that of a developer. Inventors are passionate about identifying new opportunities and responding to them. Founders' passion is for the founding of businesses to exploit and commercialise around opportunities, creating a business venture. The developer identity is concerned with growing the business once it has been created.

Watne et al. (2012) carried the three Cardon et al. (2009) entrepreneurial role identities forward into their work on craft brewers. Watne et al. (2012) see as critical the notion that passion is not inherent in some entrepreneurs, arguing that "passionate craft brewers may not be passionate people per se, or even passionate about the beer but relate this with things that are important to them such as art and craft, being a trendsetter and connoisseur or gastronomy in a wider sense" (Watne et al., 2012). Elsewhere, Watne

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(2012) argues that the craft brewers see themselves as craftsmen and women first, focused on the art of brewing. Running a business is purely secondary.

Now, referring to the Cardon et al. (2009) entrepreneurial role identities, there will be greater or lesser truth in those between individual entrepreneurs and there may be changes in individuals' views over time. An example is that a passion for opportunity recognition may motivate the entrepreneur toward the creativity of new product development. Creating new beverages may grip the craft brewer or the coffee-shop brewer/roaster. The question is the extent to which private passion can translate into viable business enterprises. There are indications that an important element here is the extent to which the entrepreneur can educate consumers. Concern to educate was a major concern of participants in the current study and was also a significant participant focus in the Watne (2012) craft brewery research. Additionally, the seemingly key element of a supportive environment, perhaps shared local passion (Bhansing et al., 2017), is something the speciality coffee entrepreneurs in this study go out of their way to create, and create also at many levels, from owners supporting and advising each other to, in fact, arranging meet-ups between their customers as mentioned.

## RESEARCH METHODS

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At inception this study's research question was simply "What motivates speciality coffee entrepreneurs to start and continue their businesses." The study evolved speedily to also cover what were and are the speciality coffee entrepreneurs' attitudes, with attitudes considered sometimes in quite specific terms, such as attitudes to Instagram or, rather more open-ended, attitudes to risk. A particular concentration of the study and its questions though lay in considering passion and creativity, primarily in an attitudinal context. From inception, the study was also to have a comparative regional element, data being collected in Bangkok, Thailand and Penang, Malaysia.

A constructivist paradigm was chosen for this study. It is aimed at accommodating the complexity of reality, or, more accurately, different realities between different people and groups. It is particularly apt for the current study to be concerned to find as much as possible of the realities of, say, one coffee roaster as against another. One may have a top-line Probat coffee bean roasting machine, another a tiny 1kg machine where it is hard to get an even roast, hard to satisfy customers, and hard to roast enough bean quickly enough to meet the demand.

With its aim of searching out case study rich detail, methodologically, this study opts for the duality of a phenomenological approach and inductive

reasoning, as Braun, Clarke, Hayfield and Terry (2018) have dubbed it “a bottom-up approach.” Findings are allowed to emerge, rather than being imposed by the researcher. No hypotheses are offered, conclusions arising purely out of the data. Descriptions are kept as faithful as possible to the raw data. Choice of such a qualitative approach is particularly appropriate to understanding different perspectives, such as those of professionals and patients. Data was gathered by individual interviews of owners/managers/roasters in speciality coffee retail in Bangkok, Thailand and Penang, Malaysia. Ten interviews were conducted in each of Bangkok and Penang, a total of twenty interviews. The sample size was determined by “contextual and pragmatic considerations” (Braun et al., 2018) meaning that ten was the maximum total number of speciality coffee-shops in Penang, without straying from any reasonable definition of speciality coffee. Participants were to some extent solicited from coffee shop/roaster entrepreneurs already known to the researchers, to some extent using internet search and substantially adopting snowball/chain recommendation. The last was done as a balanced conclusion, successful in its outcomes. The advantage is that the recommender has knowledge of the researchers and their requirements and of the potential participant’s ability to contribute. The worry is that the potential participant and referrer simply think in the same way on the topics involved. Such worries made the researchers particularly concerned with emerging themes and so to mobilise thought across categories, questions and answers to that end, throwing up, for instance a range of business Human Relations (Personnel) concerns.

Questions were semi-structured, inevitably with some degree of variability in how structured they were, given that the question set was aimed at being highly comprehensive. The worry is that where questions are more closed, themes develop simply out of the data collection tool, the question. Indeed, Braun et al. (2018) hold that often themes arise out of data collection tools, including the questions. The researchers sought to avoid that, otherwise there is a replication of the deficiencies of quantitative methods. Broadly, the researchers proceeded by Reflexive Thematic Analysis. There was a particular concern to look for missing information, what was not said (Ryan & Bernard, 2003), which for example proved especially important around entrepreneurial passion.

Data was held within the Quirkos Computer Assisted Qualitative Data Analysis software. The concern was, following Najda-Janoszka and Daba-Buzoianu (2018), to hold data in a well-organised, easily retrievable way, representing a clear audit trail of the researchers’ work. Quirkos was not used to analyse data or develop categories or themes, those being done manually. Text analytics proceeded from basic word and phrase search. For instance

“happiness” arose as a category out of noting the repetitive use of the word “happy” or “happiness” singularly or within phrases, but also out of cognates such as “having fun.” This particularly concerned answers around why the business is continued but these words also appeared throughout the interviews, for instance, in answering that those participants preferred happiness to riches out of a worldview that clearly saw the two as dichotomous.

## ANALYSIS

Two over-arching themes for the analytic stage of the study were directly suggested by the research questions: Motivations and Attitudes of the speciality coffee entrepreneurs. Multiple categories emerged from the interplay of questions, subsidiary questions and participant answers. For ease of comprehension though, all categories are stated below through questions even if the category arose out of answers.

The basic demographics of gender and age may help the reader to picture the study’s entrepreneur participants:

**Table 1.** Gender and Age of speciality coffee entrepreneurs interviewed

	Bangkok	Penang
Gender	7 Male, 3 Female	9 Male, 1 Female
Age	Age range: 28-36 Median Value: 35 Modal Value: Both 32 & 35	Age Range: 32-46 Median Value: 33 Modal Value: 32

The arrival of the entrepreneurs into the coffee business was very much out of coffee interest rather than business interest. Some had been avid coffee-shop users, others home brewers. Travel-based narratives were also quite common. Entrepreneurs, on returning home, missed the coffee styles they had found or had worked in the coffee industry whilst travelling. A simple travel support mechanism sometimes became an interest or even a passion.

### Motivations

*Why did the entrepreneurs start their business?* (Note that individuals might have offered more than one narrative)

**To Become Rich?** No (eight Bangkok Participants and nine Penang Participants: “Not. Definitely not. To me coffee is not a good way to become rich.” “Not really. If you want to be rich you don’t like invest in F & B (Food and Beverage).

I don't think it will make you rich unless you do volume." "No. I would have stayed in the bank or I would have worked for my parents" "Not make me rich but make me happy." "So if I'm interested in business and money, I won't get into this business. I go into property." "No. For the beginning not really because we came like, what we want to do, our passion..." "I think the coffee business, it's not make money too much." "Not really. Money isn't everything. I'm happy where I'm at, if I have a roof above my head, if I have food, if I can travel, that's it, that's all I need. I can have a bit of savings, that's it" Maybe (two Bangkok, and one Penang Participant) - "I think richer." "I started making coffee to be rich, but we're still figuring out how?"

**Travel-based Narratives** (three Bangkok Participants and four Penang Participants): "We went to Japan, saw how they did coffee, how they run businesses, how the level of hospitality can be like there to a point of ... It's just a bit absurd. We came back and we tried to do coffee pop-ups around Kuala Lumpur for a year." "That time in Taiwan I was academy. I start my coffee journey. I think six years, six to seven years, I learned about coffee..... I resigned my job from the country. Then I come back to Malaysia. I tell myself what can I do? Maybe we can try the coffee shop ..." "I studied abroad before in London, and then I try many coffee in there, so I feel like all of these coffee is good as well. So I think, when I come back and then I try to drink coffee same as I couldn't find, so I couldn't have my perfect coffee in Thailand, so I just tried to, okay." "From the beginning, me and my girlfriend, xxx, so we want to join... They have, working and holiday visa to Australia .... Okay, and then we learn it (coffee) and we joy community everything over there. And after four years in Sydney and came back here and we want to do something about... I mean continue to do what we love to. And yeah, that's why we start to looking for the place to set up the shop and try to educate about what we learn."

**Coffee Passion Narratives** (six Bangkok Participants and three Penang Participants): "I turned my passion into a business." "So we fell in love with coffee. After that, we, my partner and I, my friend and I, we decide to open a coffee shop." "Because I like to make coffee. I like to make the coffee for other people..... No. I think it's my passion."

**Home Brewer Narratives** (two Bangkok Participants): "I used to brew coffee at home, like as a home brewer. I started out as a home brewer, and one of my experiments got into the coffee industry..... Yeah, because I loved to do that, every morning, so it's my ritual. So I made it my business." "I was into coffee, I was brewing at home. I felt I was quite good at brewing drip coffee. Then I opened a shop."

**Sociability** (one Bangkok Participant and one Penang Participant): “And the good conversations we have, and how they become my friends” “...and the purpose, we opened this xxx Café is, we like to let people with different backgrounds meet each other.”

**Like Food and Beverage** (two Penang Participants): “Firstly it is why am in this coffee business. I like F & B.” “So over the years I’ve always liked the F&B. It doesn’t have to necessarily need to be a café. I worked in pubs, restaurants, but it’s always been the food and beverage scene.”

*What stimulated entrepreneurs most when starting their business?* (following the Cardon et al. (2009) entrepreneurial role identities of Inventor (Opportunity), Founder and Developer.)

**Opportunity** (two Bangkok Participants and three Penang Participants): “I interested in the opportunity first. Because if you have the opportunity, maybe you will have the goal.” “The opportunity to create things.” “The opportunity came about eight years ago, whereby I was given a chance to open a shop myself. I said, why not? I’m just giving it a go.”

**Founding** (two Penang Participants): “When I started. I think, when I started the idea of founding the business stimulates me most.” “Renovation.”

**Developing** (eight Bangkok Participants and five Penang Participants): “I think developing. While I’m in the business, I try to look for the flaws, or what I can improve on, and what would be fun. This is the charm of having a small business because you can custom it.” “Yeah, developing the business because when I founded the business I have no idea which direction I should go.” “It’s exciting to see a path through the wilderness, the jungle.”

*What causes the entrepreneurs to continue their business now?*

Three clear categories emerged from the data, though there were individual outliers:

**Learning** (four Bangkok Participants and four Penang Participants): “Just learn more about coffee about business.” “It’s like you’ll be, always be a study, maybe you can get something new to learn by yourself. By your friends, by our roaster, by the... It’s kinda a lot of knowledge. You can continue learning.” “To improve that everyday....In coffee business, in coffee itself, there’s no end. Something like wine, there is no end. It’s everything is developing quickly as

well so you need to catch up and you can't stop, you know what I mean. And so that's why you need to continue."

**Happiness** (four Bangkok Participants and two Penang Participants): "Because I'm happy." "Because I like it. It's something that I've been sticking to for the longest time in my life." "I'm having a lot of fun." "I think I continue my happiness." "My key ..... My happiness."

**People** (staff are covered separately) (one Bangkok Participant and three Penang Participants): "We love the vibes. After we open the coffee shop, we have our customer, and our customer become our friend." "It's already a part of my life already. It's not about ... business is a part of what I'm doing now. Like coffee and people. Like I think coffee is the main thing, because coffee bring me to lots of places and bring me to meet a lot of people." "Really, for me, it's always been about the people. As much as I ... We can go really geeky on coffee or how obsessed about coffee. With me there's another level to it, which is another compartment of it, which is the people."

*What stimulates entrepreneurs most about their business now?*

Two major categories emerged, Learning and People. Six Bangkok Participants and five Penang Participants were people-focused. This category broke down further as below:

**People – Customer Interactions:** "And the good conversations we have, and how they become my friends." "The customer make me excited somehow, yeah, so we meet many new people, we meet many friend from first is customer, and then they live around here, then we come and now they become friends, and then we say hi every day." "People. People, mostly people. Yeah. People who come to put up their works here. People come to drink coffee, who start talk to us."

**People – Customer Education:** "Maybe if I find to convert a non-coffee drinker, or like a dark roast drinker into a ..(light roast drinker)." "For the other people, I'm very excited. First, one month to eight month that I open, I talk with every people. I have the bean. This taste like this, taste like this. I have the second bean, it taste like this. From Papa New Guinea, from Laos, from Brazil, and it's like the shared educated. Yeah. I really excited now. All my customers come here and ask today, "Are we speak again?." "It's about educating people about the coffee."

**Learning** (solely put forward by three Penang Participants): “Able to discover the more detail in coffee.” “There’s a lot of knowledge in coffee. There’s never an end.” “The research still, understanding, learning everything. We still learning everything from mechanical, fluid dynamics, we learn about fluid dynamics, we learn about the electrical system, about machines that make coffee, because we can tweak and modify machines to make the same coffee tastes a lot more better without incurring additional costs on the ingredients.”

Additionally, there was a category of those enthralled by the coffee industry. There were many individual outliers, covering for instance the thrill of reaching for business sustainability and an ongoing thrill of invention around new recipes, new beans, etc. Another outlier was one Bangkok participant who had become fascinated with marketing.

**The Coffee Industry** (solely put forward by two Bangkok Participants): “There’s never stop. The new invention and everything. When I first making coffee, there is nothing much about the equipment about making good coffee. Now is hundreds of new espresso machines. Hundreds of brands. A lot of new inventions that make a very good and consistent coffee. There is a lot of a better grinder every year and every year.” “We want to put about our industry, about our mind frame business to be the goal, you know.... That’s why it’s still exciting.”

## Attitudes

### *Is the entrepreneur a Risk-taker?*

Yes (five Bangkok Participants and five Penang Participants): “Yeah, I think I take risks.” “You have to be. Sometime we try (to reduce risk) but sometime you have to trust what you do right now. We make good coffee. People trust us.” “Sure. Why not? Life’s short.” “Yeah, I think so, I mean opening this space was a big risk, in Thailand. I think that answers the question.” “Well, if I’m not I’m not going to start a coffee business.” “Yeah, I would say so.... When I started xxx (name of coffee shop) I was halfway doing my masters and I got scholarship for my masters.... I took the scholarship and paid for the start-up of the café, the business.” “I’m a risk taker. Maybe in certain stuff which we’re not sure whether will sell, but we do our research. We do our research. We do measure risk... Mitigate. Don’t over commit either ... For example, we took in some analogue cameras we’re not sure whether they’d sell, we took in some stickers but in a way we mitigate each other’s risk by consignment

basis." "Yes, absolutely... We do a lot of SWOT analysis. We do SWOT analysis, and then we look at the potential troubles."

Medium (three Bangkok Participants and five Penang Participants): "Ah, 50/50. Because now if only me yes, I'm a risk taker. But now I have my wife, and I plan to have some children in two or three years." "Not risker and not ... Maybe 60% in the take-risker side. But another 40%, I still conservative." "Medium... Because I'm not very rich .... If I'm very rich, I can take more risk." "I would say sometimes, not all the time." "Sometimes yes, sometimes no.... Yes and no. Depends on the situation. You know." "Yeah, sometimes. Sometimes. Sometimes as you go further, the risk that you take is lesser. Because you have that fear of losing all that you have built up."

No (two Bangkok Participants): "No. Yeah. I'm stressed. No. If you can see my accounting balance ....." "For me personally not really."

#### *Is the entrepreneur Passionate about what he/she does?*

All ten Bangkok Participants agreed and nine Penang Participants agreed they are passionate (one Penang Participant was missed), though one Penang Participant felt she is substantially more passionate about travel: "I think it's my passion." "Definitely we passionate about it. And we think we must start doing this. "I have passion, passion to make (coffee) because you own farm is amazing if you found some good coffee bean..... We want to put the about the Thailand specialty coffee in the states, we need to be profitable.....Yeah, yeah, that's our passion. Yeah, yeah, that's why. It's a lot of passion." "I'm passionate about coffee!"

#### *Is the entrepreneur Creative/Innovative?*

Eight Bangkok Participants agreed the proposition, for one the proposition being inappropriate to his business as he slowly transitioned to speciality coffee, so one Bangkok Participant felt that he had not been innovative. All ten Penang Participants agreed to having been creative/innovative: "With regard to roasting, I roast a different style. I was roasting coffee that people don't usually roast. That was one of the things I wanna do, I want to have a niche, like hey, I'm gonna use this coffee because nobody else is using it." "My signature drinks..... The Cups ..... And then it also gives different taste, with different materials, the thickness." "the most small innovation that we have here in xxx (name of coffee shop) is the fact that we serve churros." "When I roast my coffee, when I brew the coffee, it's have a little

thing to do different and I think I have the innovation inside that. Different to another mass coffee shop. When I roast the coffee, you control the sugar inside. You can control the amino acid inside..... Another coffee shop, you just roast. Just roast. But we control the sugar inside. It mean you control the acidity, you control the taste inside that.” “We bake small cakes because we think that sometimes people, they just want just one or two bite of the cake, and to fulfill their need. Or sometimes they want to try many types of cake, but it’s too much. So we make the cakes small. So, you can eat it without guilty!” “Our shop is a combination of many little innovation. It’s nothing big. Nothing world changing. So we are constantly looking for minor things to improve. Anything that can improve a customer experience ..... So we also innovate on our water system before the coffee machine that goes between the water source from the wall, and the espresso machine there’s probably eight water filters. There eight different systems there, each one doing specific things, for number one consistency in water quality. And we have inline live water hardness meters that basically tell us what the position is on a daily basis, hour by hour basis .... We sterilise our water.”

*Does the entrepreneur want to educate people about coffee?*

All 20 participants agreed they want to educate about coffee, (ten Bangkok Participants and ten Penang Participants): “On the education side, we educate the customers by creating an opportunity for them to experience coffee in a different way and self-discover. For example, we serve a coffee, we brew a filter coffee, but we serve in three different cups. We tell them, try the coffee in three different cups. And then try to coffee at different temperature. So what we created them is for them to experiment, the experience on the table themselves. That indirectly, they will gain an educational value.” “I wanted to educate people over here, let them know what is coffee..... they don’t know what is it. I’d like to let them know it’s from a fruit. And I like to tell them the health benefit, everything good about coffee.” “My planning for the develop my business is about educate the people.”

*Is the entrepreneur concerned for his/her staff and over staffing (HR/Personnel concerns if any)?*

One Bangkok Participant was concerned about these issues (specifically concerned for staff welfare) and seven Penang Participants were concerned about these issues (five concerned for staff welfare and two concerned about staffing): “I hire the staff, I hire like from zero, so I wanted to see their progress.... Yes, because staff is more important than my customer. If my staff

don't know anything I can't get my customer." "We said we fine if we have one small roaster and one coffee shop. Me and my partner we're totally fine; we can live with this. But for our barista, our employee and everybody, they need to grow up. But if business same size, they never grow up." "At first, we really concerned for our product, the coffee, our coffee shop and everything. But now it's more we think more about the people. The people who work inside the company." "We try and give the dream job we wanted to our staff, to our team." "Especially on the HR things. The most toughest thing in F & B." "How do we manage the workload of our team to be as low as possible? So that number one, we can possibly cut one staff, not have hiring additional staff. Number two, they have less workload, that means less stress. Then, with an extra time on their hands, we can move them to do better work, focus on different things. That gives high value to your customer."

*Does the entrepreneur believe that coffee knowledge among staff is important to the business?*

All ten Bangkok Participants agreed on the importance of coffee knowledge and the nine Penang Participants asked also agreed, but two of the Penang Participants qualified their agreement ..... : "Yes. I think it's really important." "Yes ...It's not like come and go anymore. You explain all the menu that you have or maybe the things that different from the other shop." "Yeah. They want to know many things. Sometime, some kind of new question that come from customer, after that at night I have to come to do some research that, what was this about" "Well, most of the people who once have been the café, and if they know me, they will come and talk to me for hours and hours." Note that some entrepreneurs who agreed the importance of knowledge had concerns, for instance around intimidating customers, or around mis-information eg "Yeah, because you have so much knowledge, but if you do not convey it's still a bit slightly pointless. It's too technical. Sometimes you need to slowly know how to pass the message, in terms of layman term. So it helps the consumer too, because when some people they have a lot of knowledge but they don't know how to present it. They don't know how to simplify it, in layman terms."

*What is the entrepreneur's view of coffee's Third Wave and its various elements?*

**Customer Service** Nine Bangkok Participants and eight Penang Participants put forward customer service as the key element in Third Wave coffee: "Yes... I think our customers who like drinking coffee come to our shop because they want to talk about coffee... And they're enjoying when I give them knowledge

about coffee and discuss about taste.” “Because people, I believe the service is more impact than the product for me.” “That’s why about the Third Wave Coffee. For me, right now, about customer service, it’s more important than the science of.” (a scientific approach has been another characterisation of Third Wave coffee) “I think first is service.” “We go to cafes because of interaction with the crew or with the baristas or whatever. So if the first impression, the first interaction is bad, I mean even your food is very good, it’s very hard to recover back that part.” “Customer service, I think this is very important. The first 30 seconds that someone has to acknowledge, even though you are waiting in line, just to acknowledge that you have come in.”

**Roasting** Two Bangkok Participants saw the Third Wave as about changed roasting levels, though one saw that as a major secondary factor: “Maybe it’s like, to me, is Third Wave, Fourth Wave, new generation. I think it’s a trend. The coffee tries to change from a very dark roast and try the new way of roasting.”

**Technical Innovation** One Penang Participant suggested technical innovation as the most important element in Third Wave coffee: “... the most important thing that you can see in Third Wave coffee is from the farm, from those people that grew your coffee.”

*Does the inside/outside of the premises and/or the coffee need to be Instagrammable?*

**Concerned to be Instagrammable** Six Bangkok Participants and nine Penang Participants were concerned: “The social media is so essential in promoting a business, even if the coffee is good, that is.” “Instagram is a marketing that need but product always be the number one priority for customer to come back”. “Yes, it makes it all memorable, nice, whatever the words are, and gives a social media presence.” “Yes now, but in the past, no, and that’s because of a changed customer demographic, younger basically, as the years have gone by and the interaction of that youth with social media.”

**Not concerned to be Instagrammable** Four Bangkok Participants and one Penang Participant were unconcerned about their Instagram profile: “No, the accent is on coffee. As in quality, not pictures.”

*Which is better, a big or a small business?*

Small (seven Bangkok Participants answered small and seven Penang Participants answered small):

“I think it’s a small business, yeah...Because it feels more genuine, more true. Yeah, and you get to know all your staffs, and you know them.” “Always small.” “I would say small businesses is better because we need to take care of a lot of different portion. We need to control the quality, our customer, our staff, and our menu.” “Of course a small business...It make it easier to manage and even we want to try something new, I mean, the response is immediate.....No, takes months or years” (big corporation). “Yeah, small business.” “The right answer, which is, we like to keep it small. We like to close early, enjoy the rest of our day off, time off.” “To me, if big business, I couldn’t interact or communicate with my customer.” “Small business is the best in the moment...You can more flexible to change anything. There some company is a really big business. If you want to change a some small detail, you have to wasting your time. You need a more than three month, more than a six month. If you need a small change, yeah, it’s not good. Change, it’s really easy.” “Small...We may do a bit bigger, but that’s it. Maybe like just a little bit bigger...And we are happy with that, for life.” “I think a small business.... It’s easier to control what you give, the service you provide. So I think that is better than making it bigger.” “... I enjoy small shop. I think the charm of the smaller shop is ... You can see the owner of the place making coffee.” “I happy about the small...Yeah, because I think the owner or the barista I want to the coffee to serve it to customer myself.” “Small.”. “Small.” Don’t know Three Bangkok Participants answered “don’t know,” as big is outside of their experience.

Depends on the aims of the business Two Penang Participants suggested this proposition: “It depends on what your angle is.”

Table 2 gives a summary of key data gathered.

**Table 2.** Key Data Summary (Bangkok and Penang Combined)

Positive response (20 Participants)	Negative response (20 Participants)	
<b>Attitudes</b>		
Want to educate about coffee	20/20	
To be knowledgeable (self and staff)	19/20	
Passionate	19/20	
Creative	18/20	
Customer service concerned	17/20	
Small business better	14/20	
<b>Motivations</b>		
	To become rich	17/20
To develop the business	13/20	
People (customer interaction and education)	11/20	

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## DISCUSSION

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Generally, whether considering motivations or attitudes, there was a high level of consistency between answers from the Bangkok and Penang speciality coffee entrepreneurs. For instance, on educating people about coffee, all participants across both locations agreed this was an aim. On coffee knowledge, ten Bangkok Participants and nine Penang Participants saw this as important to the success of their business around customer interaction and service. Nine Bangkok entrepreneurs and eight Penang entrepreneurs framed the coffee Third Wave in terms of customer service, amid a plethora of possibilities. In fact, high levels of customer service came over as a main concern of these coffee entrepreneurs, perhaps the main concern, including that seven participants in each location, responding on the question of big or small business, offered small as their preference. That choice was essentially decided by the high levels of customer service enabled in a small business and also that it means process is enabled that can react quickly to the benefit of the customer. Even where responses between the two locations were quite different in terms of absolute numbers, mostly the overall conclusions would be the same. For example, on the question of Instagram, only six Bangkok entrepreneurs saw the media platform's role in the business as important and to be encouraged, whereas as many as nine entrepreneurs in Penang "voted" that way, quite a difference, but in both locations a "yes" to the importance of Instagram was the majority conclusion. Exceptions included concern around staff welfare and concern around staffing. Penang Participants dominated interest in these topics in the ratio 7:1. The stimulant of learning about their business now was only suggested by Penang Participants (3).

Clearly, these entrepreneurs were not in the speciality coffee business in the expectation of becoming rich. That area of questioning became something of a joke, though one that had to be asked. They were also, in both Bangkok and Penang, looking to keep their businesses small, expressing advantages in customer service and flexibility of decision-making and action in situations arising. The speciality coffee entrepreneurs are pursuing a lifestyle choice. As one said, financially she would have been better staying working with her banking employer, another that he would have been better off investing in property. But those approaches did not accord with their lifestyle choices. Indeed, ten Bangkok Participants and nine Penang Participants readily agreed that they were passionate, motivated by passion and the specific word "passion" arose a lot in interviews. But the question is passionate about what? The answer appears not to be entrepreneurialism, not to be business, but, simply, to be coffee. The researchers, therefore, see this study exactly as Watne (2012) argues for his craft brewer participants, that the speciality

coffee entrepreneurs see themselves as craftspeople and running a business is a secondary consideration, albeit that there was some evidence that aspects of running a business may gain some interest traction with time, an example being a concern for staff. James Hoffman, a well-known speciality coffee entrepreneur and writer working out of London, put it thus when talking about Square Mile Coffee Roasters: “It was a business that was started from a place of passion but not a great deal of business knowledge – which we’ve worked hard to rectify since” (Langlois, 2019).

It is worth considering how far that coffee passion can run. One participant explained how coffee had become his life. His friends are all from the coffee “scene.” “Like actually coffee gives me a lot of like my life, it’s become my life...Yes, I go holiday, but 50 percent of the time I would spend in the cafe for the coffee.” A passionate, embedded life, but one very interesting to consider from the viewpoint of creativity. Are these entrepreneurs so embedded in speciality coffee culture as to be closed to other ideas, other inputs available, in fact specifically from outsiders to speciality coffee culture and the speciality coffee tribe? Certainly the entrepreneurs seemed to have their own answers. Creativity and innovation were defined as being very much related to their times abroad, working, studying, holidaying, being a coffee shop user. Ideas (for instance around customer service), processes (for instance coffee roast levels or ‘pour’ types and styles) and décor (white) that they were adopting were seen as creative/innovative but only to the extent that these were found abroad and brought back to Thailand and Malaysia from Australia, Taiwan, Korea, Japan and the UK, and are in contra-distinction to traditional coffee shops in both Thailand and Malaysia. In fact, in the researchers’ view, the rate of adoption of these outside influences has been such that they now constitute a part of the local speciality coffee tribes’ culture.

The researchers feel that any automatic or near automatic presumption of passion and creativity being bedfellows is naivety in the extreme. In their view, creativity arises specifically out of a relatively unsocialised position (Gogatz & Mondejar, 2005) or more accurately, for adults the ability to emulate one as best possible, assuredly the opposite of tribal cultures, however, contemporary their outlook and however well-travelled their membership. The deeply supportive and highly networked inter-business relationships in Bangkok and Penang, and between the two, may not be as beneficial as seems at first sight. The need is to be highly suspicious of the theoretical work of Sternberg and Lubart (1991) on supportive environments, essentially meaning human landscapes, as it is at least ignoring negatives. The same may well be true of the work of Bhansing et al. (2017) on Creative Business Centres. Where these Centres are less limiting than simply entrepreneurs’ peers within an industry, in that they embrace entrepreneurs from a number

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of business areas, those may be highly cognate, often creative businesses, with similar ideas. Put at its simplest, how do you think outside of the box when doing your best to contain yourself within it? At best, you can become co-creator of a new normal.

## CONCLUSIONS

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There were no hypotheses in this study. It was based on the phenomenological proposition of giving the participants a voice as they chose, albeit that semi-structured questions from the interviewer acted to instigate the discussion. No answer was the wrong answer and no comment in conversation was inadmissible. Despite the open-ended nature of questioning and responses, this study, on balance, indicated similarity rather than difference between the speciality coffee entrepreneurs' responses in Bangkok and Penang to a range of core questions, both about their business and entrepreneurship in general, particularly in the business start-up phase but also the early years.

The researchers' questions included why did entrepreneurs start their businesses or why do they continue their business, along with such questions as what excited them most at start up and what excites them most now. Equally, a range of questions aimed to elicit entrepreneurs' views around and exemplifying of passion and creativity. Across this wide breadth of questioning the similarity in answers kept showing even in such areas as Third Wave coffee where the range of possible individual interpretations is nearly endless. Similarity could also be seen with previous work on craft entrepreneurs, e.g. Watne et al. (2012). Particularly, around the key concept of passion, participants were passionate about coffee's craft skills and processes, though not as passionate about entrepreneurship.

Any limitations in this study were knowingly set by the researchers from the outset in establishing the conceptual framework and, notably, comparative boundaries to the study. No further limitations occurred during the process of the study, for instance, any inability to recruit entrepreneur participants. Bangkok and Penang are major speciality coffee centres within South-East Asia, though Penang, much smaller than Bangkok, did require a high recruitment rate. Nonetheless, only two locations were considered and at a particular point in time, summer 2019, so representing an innate limitation necessitated by the availability of finance, time and manpower. Future research could be undertaken in other speciality coffee centres within South-East Asia, with Kuala Lumpur, Ho Chi Minh City and Hanoi coming to mind. The study might also be extended to cover major East Asian centres such as Taiwan, South Korea and Japan. As the range of centres included

becomes wider, it would become more possible to consider generalisability or at least transferability, though at this point potential indications across speciality coffee look as though they could be positive. Speciality coffee seems to represent an entrepreneurial niche, similar to other suppliers in artisanal, craft-concerned Food and Beverage.

Of course, this commentary for future research should not though be limited to Asia. Future venues for study could be global, Melbourne or Oslo being particularly obvious examples. However, perhaps this study offers something wider still, in that a takeaway for any student or researcher in entrepreneurship anywhere, should be as seen here that passion in entrepreneurship may not be driven by classical economic components. This consideration has particular value in the craft industry but is also applicable much more widely in an era of social enterprise.

This research also offers a takeaway in practical business terms. Suppliers to these businesses are not dealing with customers within the normal constraints of economic rationality. That must be thought about in product development and marketing to them. For instance, is a more expensive product or service highly saleable to the speciality coffee entrepreneurs, so long as its environmental credentials are very clear? Do financial advisers need to offer non-standard financial advice and specifically tailored financial products? Perhaps financial services need, in particular, to be able to demonstrate corporate social responsibility? What advice should a Government or Local Government advisory service offer to businesses whose framework of reference is so outside the norm?

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### **Abstrakt**

**Cel:** W artykule omówiono niedawno powstający przemysł kawowy w Bangkoku w Tajlandii i Penang w Malezji. Zajmuje się on pytaniami badawczymi dotyczącymi motywacji i postaw właścicieli małych, przedsiębiorczych firm kawowych w obu krajach. **Metodyka:** Metodyka badania polegała na gromadzeniu danych jakościowych na podstawie wywiadów bez z góry określonych hipotez. Wywiady były częściowo ustrukturyzowane. Pytania dotyczyły w różny sposób motywacji i postaw, ale szczególnymi punktami skupienia były pasja i kreatywność. Analiza odbywała się poprzez analizę treści tematycznych. **Wyniki:** Główne ustalenia były takie, że uczestnicy uważali się za pełnych pasji i kreatywnych, chcieli uczyć się o kawie (pierwsze odkrycie) i nie mieli żadnych oczekiwań ani nadziei na wzbogacenie się poprzez swoje przedsiębiorstwa kawowe. Skupiali się na innych elementach szczęścia niż pieniądze. Okazało się, że ich pasja nie była pasją przedsiębiorczości, napędzaną finansowo, ale pasją do umiejętności rzemieślniczych i produkcji, a także towarzyszącego im stylu życia, który po prostu nie dotyczył maksymalizacji dochodów. **Implikacje dla teorii i praktyki:** Przedstawia potencjalny pogląd na przedsiębiorczość będący w znacznej rozbieżności z poglądami klasycznej ekonomii. Niewielu przedsiębiorców, z którymi przeprowadzono wywiady, uważało, że ich firmy mają potencjał tworzenia bogactwa. Obawy o maksymalizację dochodu lub zysku nie były powszechne. Nie byli to finansowo napędzani przedsiębiorcy klasycznej ekonomii. Skupiali się na swoim rzemiośle i jego umiejętnościach. Całe zrozumienie nastawienia właścicieli i twórców małych firm zajmujących się kawą jest spostrzeżeniem o istotnym znaczeniu praktycznym, na przykład dla tych, którzy chcą im dostarczać kawę i być może innym podobnym małym firmom, lub aby im doradzać, w tym usługi doradcze dla rządu i samorządów lokalnych. **Oryginalność i wartość:** Pytanie postawione w tym badaniu nigdy wcześniej nie zostało zadane, więc badanie jest wyjątkowe w branży. Jego wartość leży w dwóch obszarach: praktycznym, realnym świecie biznesu, jak wspomniano, oraz dla przyszłych badaczy przedsiębiorczości. Ponieważ te małe firmy są zbudowane z koncepcji stylu życia, a nie klasycznych koncepcji ekonomicznych, zwłaszcza w zakresie maksymalizacji dochodu lub zysku i odpowiedniej skali, istnieje poważna wątpliwość co do ważności tych klasycznych poglądów ekonomicznych. Istotną wartością w tym badaniu jest właśnie to, że wniknęło ono i uderzyło w mnóstwo motywacji i postaw prezentowanych nieformalnie przez przedsiębiorców.

**Słowa kluczowe:** pasja, kreatywność, kawa, rzemioło, przedsiębiorczość, umiejętności rzemieślnicze, mały biznes

## Biographical notes

**Mark Azavedo** is a Doctoral candidate at Shinawatra University, Thailand, who holds an MBA from Stamford International University. He has been a serial small business entrepreneur in both the business-to-business arena and that of business to consumer, the latter covering many retail formats including pop-up. His main research interests are the food supply chain, and artisanal food and beverage production and marketing. He has written extensively in these areas, always seeking to consider the application of his findings for small businesses, and the suppliers to them, and to consider the social elements in transactions and pricing ignored in classical economics.

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## Conflicts of interest

The authors declare no conflict of interest.

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# Introducing a functional framework for integrating the empirical evidence about higher education institutions' functions and capabilities: A literature review

Dorys Y. Rodríguez-Castro<sup>1</sup>  and Juan Aparicio<sup>2</sup> 

## Abstract

**Purpose:** The paper introduces a functional framework that synthesizes the functions and capabilities that currently guide the empirical evaluations identified in the literature. **Methodology:** In this paper, a systematic review of the literature is carried out, which sheds light on the relationship between the modeling of the production of higher education institutions and the objectives of higher education policies. **Findings:** Our results evidence that four input-output relationships predominate in the production models used to measure the performance of higher education institutions. However, our results point to the existence of certain imbalances in measuring the three university missions. **Implications for theory and practice:** The functional framework presented here shows that there are several mismatches between the production that is examined in the assessment of HEIs' performance and the goals of higher education policies. This has important implications, both for academia and for the policy practice of HEIs and HESs, if we are to achieve a fair and equitable representation of the activities performed by HEIs and their multiple contributions to HESs. **Originality and value:** This review emphasizes the need to address broader analytical frameworks that help to avoid possible systemic failures that may arise due to the absence or excessive importance given to concrete functions and capabilities. **Keywords:** higher education institutions, functions, performance, capabilities, literature review, integrative, efficiency, functional framework.

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## INTRODUCTION

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Higher Education Institutions (HEIs) participate in at least fifteen different types of policies and objectives related to higher education (OECD, 2017a). The term Higher Education Institutions (HEIs) is used to refer to different types of tertiary education training institutions including universities, colleges, polytechnics, technical institutions, vocational training centres, etc. They contribute to the training of human capital, as well as to the social, cultural, economic, and environmental development of territories (OECD, 2017a). Proving whether HEIs 'work well' requires a comprehensive understanding of the activities these undertake (Benneworth, Pinheiro, & Sánchez-Barrioluengo, 2016), of the synergies produced among these activities (Johnes, 2015), and of the social objectives and expectations set for HEIs by higher education policy (OECD, 2017b). The current (dominant) model used to assess the performance of HEIs streamlines their operation in university missions (called basic functions) representing teaching, research and extension - commonly referred to as the third mission - (Martin & Etzkowitz, 2000). However, this model falls short in comprehensively characterizing the role of HEIs and their contribution to society, and hence, it may be unsatisfactory to detect problems in the operation of the Higher Education System (HES) (Sánchez-Barrioluengo, 2014). To contribute to this endeavour, the article reviews and synthesizes the evidence related to the measurement of HEIs' performance. With it, we aim to identify the functions and capabilities that are modeled by the empirical literature and integrate them into a functional framework that facilitates the design and implementation of systemic evaluation. A systemic perspective is a holistic approach that puts the study of wholes before that of parts (Jackson, 2009).

Policy makers are increasingly interested in functional frameworks as novel means to align the functions and capabilities required by (health, innovation, education, etc.) systems with their respective policy objectives (Smits & Kuhlmann, 2004). These increasing demands make them become a suitable methodological choice to promote the sustainability of systems, and particularly, of those with profound structural and functional transformations (Weber & Rohrer, 2012) as it is the case of HESs (Benneworth et al., 2016). Functional frameworks thus emerge to highlight the processes that are required to guarantee the good operation of a system, aiming to clarify how such system works (Wieczorek & Hekkert, 2012). Following Parson (1974), the term process is here understood as an action of transforming inputs into results. However, few examples of functional frameworks can be found in the literature on higher education, and even fewer examples of its use in empirical research (Molas-Gallart & Castro-Martínez, 2007). For an exemption, see

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Molas-Gallart & Castro-Martínez (2007) in relation to the third mission. The paper thus aims to contribute to reducing this gap by integrating into an analytical framework, the functions and capabilities that are examined in the literature to measure the performance of HEIs. Specifically, the paper focuses on reviewing the extant evidence at the Nation-State level.

Throughout this review, the term 'university function' will be used to refer to the contribution of HEIs to achieve the central objectives of higher education policies. In turn, 'capabilities' correspond to the set of internal processes that HEIs execute autonomously to develop their missions. This implies that HEIs have multiple responsibilities (Salmi, 2017; Zwaan, 2017), emphasizing their multi-dimensional and multi-product character (Cheng & Wu, 2008; Cohn, Rhine, & Santos, 1989). Adding to this, the global change in university models (e.g., entrepreneurial university, research university) is leading HEIs to specialize in certain functions, so as to differentiate from the rest (Benneworth et al., 2016). Consequently, these changes have influenced the relative importance of the functions and capabilities to be chosen and assessed by HEIs when defining their strategies (Martin & Etzkowitz, 2000). In spite of the efforts made in previous literature reviews (Berbegal Mirabent & Solé Parellada, 2012; De Witte & López-Torres, 2017; Gralka, 2018; Rhaïem, 2017), little is yet known as to the functions and capabilities that currently guide the evaluations of HEIs, and whether these vary depending on the perspective of analysis. By introducing a functional approach, which considers functions and capabilities as processes, we offer an alternative way to conduct empirical evaluations of HEIs' performance (Wieczorek & Hekkert, 2012).

The way in which HEIs fulfill their functions can be qualified from different perspectives. From an economic approach, one could argue that a HEI works well if it is effective in achieving the expected results, if it achieves these results efficiently, and at a minimum cost (Sarrico et al., 2010). For this reason, most studies addressing the performance of HEIs have focused on their efficiency (De Witte & López-Torres, 2017; Gralka, 2018). Methodologically, it is a matter of modeling the relationship (R) between the inputs (I) dedicated to a particular HEI, and the multiple outputs (O) achieved by this in all or in some of its missions, which we have labeled here as input-output relationships (IO-Rs). However, the generalization of the IO-Rs identified in the literature with respect to university missions has led to a lack of awareness about the functions and capabilities required, exploited, and combined by HEIs on the one hand, and about how the empirical models used in the assessment of HEIs' performance reflect the contribution of HEIs to the operation and performance of the HES in which they are embedded. To contribute to closing this gap, we characterize the combinations of IO-Rs in terms of functions and capabilities, and analyze their relevance in the assessment of the functioning

and performance of HESs. To reach the previous overarching goals, the following research objectives are developed in the paper: 1) to characterize the processes (IO-Rs) according to their missionary nature and output mixes; and 2) to examine the adjustment between the production modeled in the IO-Rs and the goals of higher education policies. These research goals also become instrumental for policy makers when defining educational policies, while being relevant for organizations developing university rankings.

Based on the literature that addresses the measurement of HEIs, it is thus worth asking the following research question:

*RQ1: How is the production of HEIs modeled to evaluate their performance?*

*RQ2: What is the adjustment between the production of HEIs and the objectives set for them?*

To answer these research questions, a systematic literature review is conducted, applying the methodological approach of the Integrative Review of the Literature (IRL) (Torraco, 2016). Due to the nature of the above research questions, the IRL was chosen because it allows the extraction and classification of quantitative evidence (Whittemore & Knafl, 2005) using techniques that can be used to compare several groups, which in our case correspond to the IO-Rs. In addition, the final purpose of an IRL is to integrate its results into a framework, which in our case corresponds to a functional framework that integrates the capabilities and functions that we want to make available for researchers and public managers in higher education. It is worth noting that the functional framework presented in the paper is based on the evidence gathered from the review of the literature on the assessment of the performance of HEIs from an efficiency perspective.

The functional framework introduced in the article adopts a systemic perspective because it allows a thorough analysis of the relationships among the multiple production processes and the policy objectives defined for a given system (Smits & Kuhlmann, 2004). The benefit of applying a functional framework is that it allows examining the connection between functions and capabilities (Wieczorek & Hekkert, 2012), offering an alternative way to assess the sustainability of a system. This analytical approach considers that a system is sustainable as long as there is a balance between the contributions that emerge from it and the existence of the resources required to continue producing them (Edquist et al., 2018), which is becoming increasingly attractive for public policy makers (Jackson, 2009).

The contribution of the paper to the literature is twofold. First, it identifies the functions and capabilities that guide the empirical evaluations of HEIs. In doing so, it provides a critical analysis of the generalization of the IO-Rs

(i.e., production functions) with respect to the three university missions. The second contribution is the analysis of the different ways in which the literature combines functions and capabilities with respect to the three university missions. As a result, the paper introduces a functional framework that draws attention to the possible systemic failures that may arise from the absence or excessive importance given to certain functions or capabilities (over others) in the evaluations of HEIs.

The paper is structured as follows. Section 2 discusses the rationale of functional approaches in higher education, and how IO-Rs are modelled in the literature. In Section 3 we present the methodology followed in the IRL. The results of the review are evidenced in Section 4. In particular, emphasis is made on the structure of the models used in the literature to assess HEIs' performance, and the functions and capabilities required by HEIs. Section 5 introduces the functional framework that helps assess HEIs' performance from a systemic perspective. Finally, Section 6 concludes the paper.

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## **THEORETICAL FRAMEWORK**

The literature on educational efficiency has been the subject of numerous reviews<sup>3</sup>. Most of them have addressed the methodological (and mathematical) approaches used to assess the education sector as a whole (i.e., De Witte and López-Torres, 2017; Johnes, 2015; Thanassoulis et al., 2016). The two most recent reviews are those by Rhaïem (2017), focused on research efficiency, and Gralka (2018), which applies Statistical Frontier Analysis to assess the efficiency in the higher education sector. Despite both studies address efficiency in higher education, they analyze the methodological approaches that are applied to the analysis of all types of units (higher education systems, universities, departments, etc.), geographic scales (between countries, regions, localities, etc.) and missions, without deepening into how the empirical literature relates the inputs and the outputs of the previous units of analysis, and without discussing the functions and capabilities of HEIs.

### **The functionalist approach**

To gain a better understanding of the rationale of this review, we will start by discussing the concept of 'university function' from a systemic perspective. In higher education it is common to use the term 'university mission' as a synonym for the functions of HEIs, to refer to their operation in terms of teaching, research and extension, the latter being associated with the links

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<sup>3</sup> The full list of reviews in the literature are available in the supplementary material available online (see Table 1).

and interactions of HEIs with the society (Benneworth et al., 2016; Martin & Etzkowitz, 2000; Sánchez-Barrioluengo, 2014). Parsons' functionalist theory, which applies to social systems, refers to the term function as the contribution made by the components of a system, so the latter operates continuously (Cuff et al., 2006). From this perspective, social systems work well if they meet two conditions: (i) they carry out the processes that are indispensable to meet the objectives assigned to them; and (ii) they produce results that contribute to the overall achievement of these objectives (Jackson, 2009). Castells (1993) refers to the term function as the role played by the university in society. In this sense, the OECD (2017a) defines the production of results that meet the needs and objectives of students and their families, employers, economy and society as the main functions of HEIs. In the context of innovation systems, the expected contributions of HEIs are clearly defined for the innovation system to achieve the objectives assigned to it (Giuri, Munari, Scandura, & Toschi, 2019; Hekkert et al., 2007; Laredo, 2007a; Molas-Gallart et al., 2002; Wieczorek & Hekkert, 2012). However, to the best of our knowledge, there is no analytical framework that classifies all the functions and capabilities of HEIs. Table 1 summarizes the different classification schemes identified in the literature, together with the objectives posed to higher education.

From this systemic perspective, the term function encompasses the set of activities, processes and interactions that a HEI needs to execute to fulfill the purpose(s) for which it was created. This implies that the notion of function simultaneously involves the capability to produce (outputs) as well as the ability to contribute to the system. One of the conceptual frameworks that analyzes the functions of a system and discriminates among the capabilities of its components is the cascade model (Potschin & Haines-young, 2013). According to the conceptual assumptions behind this model, the production of a component (in our case the HEI) that is part of a system (in our case the HES) aims to fulfill two purposes, namely, supplying the services or goods that the system is expected to deliver, and providing the support that is required to produce the said services. Following, we define university functions as all those processes the results of which directly contribute to the achievement of the central objectives of higher education policies. Likewise, we define the capabilities of HEIs as the determinants of the processes that are required for HEIs to achieve the results that are expected from them within the general framework of higher education policies.

The main advantage of analyzing functions from this systemic perspective is associated with the possibility of assessing the performance of HEIs from the adjustment between social expectations, the results achieved and the capabilities of HEIs to achieve these results (Smits & Kuhlmann, 2004; Wieczorek & Hekkert, 2012). Other advantages are related to the

opportunity to identify the specialization strategies of HEIs (Kitagawa & Oba, 2010), offering a methodological alternative to overcome the classical “one-size-fits-all” measurement models (Benneworth et al., 2016; Sánchez-Barrioluengo, 2014). These advantages, together with the well-established arguments about the transformation of HESs (Carpentier, 2018), could provide a broad framework to identify potential failures or operational problems in these systems (Weber & Rohracher, 2012; Brennan et al., 2014). It is also worth noting that the application of the functional framework to social systems has some limitations. As discussed by Jackson (2009), the main limitation is the lack of a linear relationship between the production of a social institution and the accomplishment of the political objectives that are intended with it.

Economic, political, and social circumstances have promoted substantial changes in the role of HEIs and their organizational models (Martin & Etzkowitz, 2000). This paradigm shift has led to the emergence of various university models: teaching universities, research universities, innovative universities, business universities (Etzkowitz, 2017; Etzkowitz et al., 2000), adult education universities, open (remote) universities, and the so-called world-class universities (Salmi, 2009). The diversification among the previous university models has increased, partly due to the growing global competition for reputational success, or as a strategy of adaptation to the dynamics of global markets (Olivares & Wetzely, 2014). Consequently, depending on the model a HEI may have chosen, its activities are expanded or specialized to comply with some of the essential functions of HESs (Benneworth et al., 2016), which has direct implications in the difficulty to assess the functioning of HEIs and thereby of HESs (Martin & Etzkowitz, 2000).

## **The functions and capabilities of HEIs**

Education economists use production functions to assess how HEIs convert inputs into outputs to achieve the goals assigned to them. This implies the use of a mathematical function that models the relationship between the available resources (Inputs) and the results (Outputs), in an Input-Output Relationship (IO-R). As a result, IO-Rs aimed at estimating efficiency of teaching, research or extension missions can be found, together with IO-Rs in a combined model, in which the inputs and outputs of different missions are mixed (Berbegal Mirabent & Solé Parellada, 2012). IO-Rs have been conceptualized as educational production functions (Toutkoushian & Paulsen, 2016), and specifically, as multiproduct function (Cohn et al., 1989). One of the critical elements of the educational production function is the

ability to combine and juggle the different interests of the policies underlying higher education, since they can become contradictory (Castells, 2001).

Theoretically, the inputs of the educational production function represent those variables that are indicative of the human (students, lecturers, administrative staff) and capital resources (financial resources, facilities, consumables). Input indicators are usually defined in terms of quantities or investments that represent the availability of certain resources that are needed to achieve certain results. In the educational production function, these results are measured through such measures as the number of students, research income or research scholarships (see Berbegal Mirabent & Solé Parellada, 2012). This opens a debate about whether HEIs are efficient for what they contribute to the system, or because they have greater and better possibilities of increasing their results for a given amount of resources (i.e., in public HEIs). According to Benneworth et al. (2016) the existing measures reinforce the inequalities among the HEIs that are well equipped in research and technology transfer, and those that are oriented towards the quality of teaching, which can have consequences on the sustainability of certain institutions if public policies award a larger relative weight to a particular mission as compared to another (Duan, 2019).

To capture the overall production of HEIs, scholarly work has strived to combine outputs from the three university missions and model a multiproduct type of educational production function. In general terms, the outputs related to the teaching function are measured through indicators of academic achievement (graduation rates, grades, enrolled students) and employability. The production of research is captured through such indicators as scientific publications, research contracts, scholarships and income for research activities, or doctoral theses (Berbegal Mirabent & Solé Parellada, 2012; De Witte & López-Torres, 2017; Sánchez -Barrioluengo, 2014). Additionally, the studies that focus on the third mission especially deal with issues related to knowledge transfer (Laredo, 2007a; Molas-Gallart et al., 2002).

In recent years, institutional dynamics have assigned new and greater responsibilities for internationalization, entrepreneurship and regional development to HEIs, stressing their multidimensional status even further (Martin & Etzkowitz, 2000). Operationally, this has led to the need to further decompose the educational production function into different outputs of a mission (Toutkoushian & Paulsen, 2016). For example, in the teaching mission, the number of new graduates needs to be broken down either into the number of graduates for undergraduate, postgraduate and doctoral studies, or in the number of new graduates by disciplines, among others (Thanassoulis et al., 2016). As long as the research mission is concerned, it is necessary to expand the IO-R to include outputs that reflect the effort

of HEIs towards knowledge transfer, such as licensing, or the income from the sales of research services, to name a few (Liang, Li, Cook & Zhu, 2011; An et al., 2017; Yang, Fukuyama & Song, 2018). In line with Laredo (2007b) there is a general consensus in the orientation of the third mission towards the transfer of knowledge, being the outputs associated with patenting, the creation of spin-off firms, contracts with industry and the public sector, participation in policy definition, inclusion in cultural and social life, as well as involvement in initiatives to socialize and promote science. In turn, the OECD considers that the third mission should focus on innovation, with outputs associated with the creation of companies and the generation of royalty income (OECD, 2017a).

Despite these efforts, scholarly work has warned about the limitations of data availability and their quality, which has led to an excessive use of some indicators as compared to others (Bonaccorsi & Daraio, 2008), and in many cases, to combine in the same educational production function indicators that represent each mission, but that do not discriminate between functions and capabilities of HEIs.

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## METHODOLOGY

This article makes an IRL on the performance measurement of HEIs, following the methodological guidelines provided by Whittemore & Knafl (2005). In particular, we focus on those contributions that have approached such measurement from an efficiency perspective (see Section 1). In order to guarantee the robustness of our results, these are compared with previous reviews dealing with the performance and efficiency of the education sector, the quality of higher education, and DEA (i.e., Data Envelopment Analysis) methods applied to the education sector.

The IRL is developed in three stages: 1) strategy followed for the literature search, 2) development and application of taxonomies, 3) data analysis and integration of the results in a functional framework. The following sections provide the details of each stage, so the systematic method followed in the IRL can be double-checked, and thus, ensure the replication of our research.

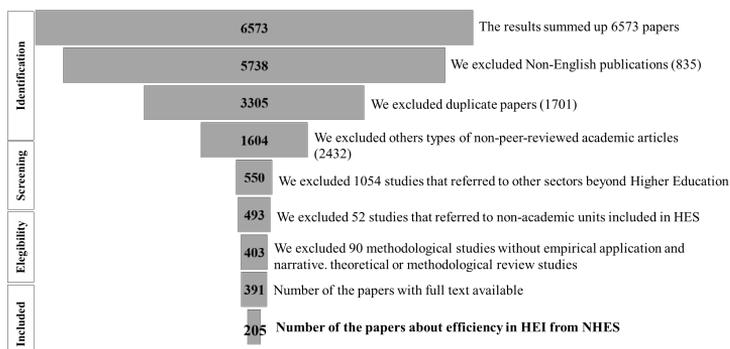
### Literature search strategy

The documents included in the review had to meet the following eligibility criteria: 1) their objective is to assess the efficiency, productivity, and performance of HEIs; 2) they provide an empirical or methodological study with application and implications in higher education; 3) the unit of observation is the HEI, which

operates in a national context; and 4) the documents are academic articles, written in English, published between 1978 and the cut-off date of 12/02/2018, in a peer-reviewed journal and indexed in the bibliographic databases contained in the Web of Science, Scopus, Proquest or EBCHOST (see Table 2).

For the literature search, the entire set of bibliographic databases used in other reviews was checked. The search condition was constructed using a set of keywords frequently used in studies of HEIs' performance, efficiency and productivity, which was validated with the keywords used in the search conditions of other systematic reviews. Boolean operators nested in three terms were used, which resulted in the following search condition: (efficiency OR productivity OR performance measurement) AND (higher education OR college OR university OR "post secondary" OR postsecondary OR universities) AND ("data envelopment analysis" OR "DEA" OR "SFA" OR "stochastic frontier").

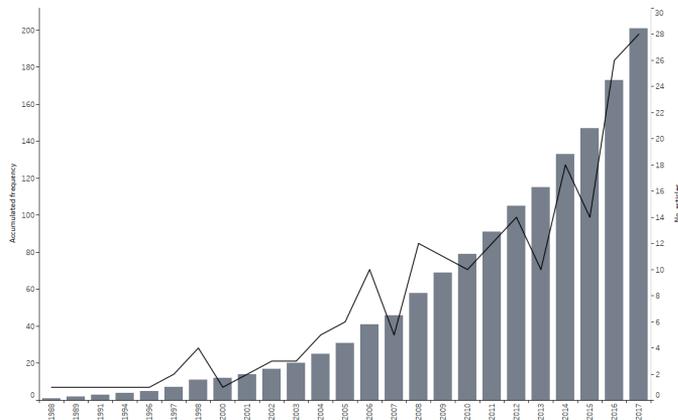
Figure 1 describes the flow of activities followed to get to the final sample of articles reviewed. The titles and abstracts of the 1604 remaining articles were reviewed and classified by sector according to the methodology described by Liu et al. (2013a). We excluded 1054 studies that referred to other sectors beyond higher education, and 52 studies focused on non-academic units of HEIs. 90 methodological studies without empirical application, as well as narrative, theoretical or methodological review studies were also excluded (see Tables 2 and 3). The remaining 391 documents were included in the IRL for full text reading and their additional classification according to the observation unit (i.e., Higher Education System-HESs, HEI, department, center, etc.) and geographical scale (global, national, or local), relevant aspects on systemic perspective. As a result of this classification, 205 articles that measure HEIs' performance at a national level were kept for the quantitative and qualitative synthesis of the IRL.



**Figure 1.** Flow chart on the search and selection process of the Integrative Review of the Literature

The articles that constitute our sample are published in a large number of journals (140), although in most of these (61%) only one article has been published. The journals with the largest number of publications are Education Economics (9), Socio-Economic Planning Sciences (8), Scientometrics (8), Omega (6), Annals of Operations Research (6), Economics of Education Review (6), and Research in Higher Education (5). The full list of references that have been reviewed are available in the supplementary material available online (see Table 5). Most of them are empirical (86%), and the remaining 13% develop methodological solutions with a direct application to higher education.

Figure 2 shows how studies on HEIs' performance and efficiency have increased significantly in the last decade. Most of them (93.7%) measure the performance of traditional HEIs (i.e., universities, colleges), which fulfill the three missions and offer long-term programs (UNESCO Institute for Statistics, 2014). This implies that only 13 out of the 205 studies analyze other types of HEIs, such as business schools or vocational training centers, which offer short-term post-secondary courses (less than two years) and do not necessarily fulfill the three university missions (Porto Gómez et al., 2018). It is also important to note that, despite the rise of the universities that provide distance education, no specific study was found about this in our review. Regarding the sectoral nature of HEIs, 34.9% of the studies focus on public HEIs, 11.1% compare between public and private HEIs, and 4.4% deal with private HEIs. It is noteworthy that the remaining 49.5% do not discriminate among HEIs according to their sectoral nature.



**Figure 2.** Number of articles on the evaluation of the efficiency of universities (1988-2017)

**Note:** articles published in 2018 are excluded because the coverage is unrepresentative.

Overall, the evidence gathered encompasses 30 countries. However, 70% of the studies reviewed focused on HEIs in 8 countries: United States (42 articles), United Kingdom (33), Italy (18), China (15), Australia (12), Spain (12), Taiwan (10) and Germany (8). As of 2011, the year in which the literature on efficiency in higher education increases exponentially (see Figure 2), there is a boom of this type of studies in the United States, China, and Spain, while in the United Kingdom, they decrease significantly. There is evidence on the evaluation of National Higher Education Systems in a total of 30 countries. However, the majority of these studies (comprising 19 countries) were published recently. In this regard, it is important to note that only articles published in English were considered in the IRL, and therefore, it is likely that the figures are underestimated for non-English speaking countries (Figure 3).



**Figure 3.** Geographical distribution of the articles on the assessment of HEI efficiency (N=205)

### Taxonomies and classification of the evidence

The second stage extracted, classified and systematized the evidence in the sample using the taxonomy technique (Doty & Glick, 1994). In particular, two taxonomies were applied. The first taxonomy classifies input and output variables as well as external factors according to their mission and functional orientation. This taxonomy was constructed taking as reference the previous revisions (Tables 4a, b, and c; Figure 1). The second taxonomy classifies the structure of the model according to its dimensionality (production, structure

and temporary nature). Production is classified as one-dimensional, when the model is only associated with a single mission, or multi-dimensional, when outputs are associated with two or more missions. Following Cook, Liang & Zhu (2010) and Kao (2014), the structure of the production system is categorized as basic (black box) and network-based (not black box). Finally, depending on the temporary nature considered by the production process, four types of models are distinguished: static models of a single period, static of several periods (time-invariant), dynamic without intertemporal dependence, and dynamic with temporal dependence (time-variant) (Emrouznejad & Thanassoulis, 2005; Gralka, 2018). For every taxonomic category and sub-category a code was assigned, with the purpose of synthesizing, normalizing and representing in a standardized way all alternatives in such a way that the empirical evidence obtained per article corresponds to the frequency of a particular code.

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## DATA ANALYSIS

The third stage consists of establishing the analysis framework to identify the university functions and discriminate them from the capabilities of HEIs. Initially, the different IO-Rs were classified and characterized by an exploratory analysis of the input and output variables grouped by the missional orientation of the output. Then, a step-by-step discriminant analysis was performed. The discriminant analysis was used because it allows building a predictive/descriptive model that discriminates a group based on observed predictive variables (e.g., IO-Rs) (Calvo & Rodríguez, 2003). The discriminant analysis allows us to achieve three purposes. First, to reduce the variability of the 82 variables included in our analysis through discriminant functions. To validate their statistical significance, we use the canonical correlation coefficient and p-value of the Lambda Wilks statistic. Second, to examine whether the form of IO-Rs classifies studies. To classify the studies, we used the Mahalanobis distance, which is calculated from the covariance matrix grouped within the group. Finally, to establish which of the identified inputs or outputs are predictors of the IO-Rs defined to prior. The assignment of a study to a given group has been validated using the cross-validation procedure.

Once the dominant IO-Rs were identified, the functions and capabilities were analyzed and classified. The first condition was to define what would be considered as a university function. As discussed, we follow the concept of function given by Jackson (2009). The frame of reference for university functions and capabilities was built from the harmonization of policy objectives in higher education (OECD, 2017a) and from the different schemes of the functions of a HEIs used in the literature (Brennan et al., 2014; Laredo,

2007a; Molas-Gallart et al., 2002) (see Table 1). To integrate functions and capabilities into a functional framework, we apply Minimal Spanning Tree analysis, since this technique makes the visualization of the results easier. To build the resulting tress, the similarity among the studies included in the analysis was explored using Jaccard's measure of similarity.

**Table 1.** Correspondence of the integrated classification of functions and capabilities of HEIs proposed in this review, as compared to previous classifications

	Functions (F) And Capabilities (C) Present review	Functions from the HES benchmarking perspective (OECD, 2017b)	Functions from the innovation perspective (Brennan et al., 2014)	Functions from the third mission perspective (Laredo, 2007a; Molas-Gallart et al., 2002)	Guidance on higher education policy themes (OECD, 2017a)
<b>Teaching</b>					
F1	Attainment and graduation rates	Attainment and completion Skills (score)	Teaching and learning Student assessment	-	Participation in higher education
C1	Attraction students	Access and participation.	-	-	Equity of access
C2	Reduce student dropouts	Student experience of teaching and learning	Curriculum development	Alignment of curriculum to societal needs	Participation in higher education
C3	Academic production and quality assurance	Use of technology	Progression rates	Employment relationship and Learning activities	Diversification of study provision
F2	Employability	Labour market outcomes	Student mobility	-	Links to the labour market
F3	Continued education and lifelong learning	-	-	-	Life-long learning
C4	Internationalization	International education and mobility	Student mobility	-	Continued education
C5	Resources mobilization-Teaching	-	-	-	Internationalization
<b>Research</b>					
F4	Doctoral Education	Doctoral and postdoctoral research	-	PhD students and graduates research	Doctoral education
F5	Generation of new knowledge	Publications. Scientific impact. Joint publications with non-academic authors	New knowledge creation. Testing and measurements. Experimentation. Validation and Dissemination of results	Knowledge creation. Guidance of the search (prospective, and surveillance technologies)	Research and innovation

Functions (F) And Capabilities (C) Present review	Functions from the HES benchmarking perspective (OECD, 2017b)	Functions from the innovation perspective (Brennan et al., 2014)	Functions from the third mission perspective (Larado, 2007a; Molas-Gallart et al., 2002)	Guidance on higher education policy themes (OECD, 2017a)
C6 Resource mobilization- Research	Earned income for research projects	-	Contract research academic	Funding for research (competitive)
<b>Extension mission</b>				
F6 Generation of intellectual assets	Patents Licensing of patents	Protection of intellectual property	Intellectual property	Technology transfer and innovation
F7 Entrepreneurial activities	Spin-off companies - Start-up companies	Creation of spin-offs	Entrepreneurial activities	Policies on entrepreneurship education
C7 Revenue from knowledge transfer	Consultancy contracts - Total earned royalty income	Contracts with industry - Contracts with public bodies	Commercialization of facilities - Resources mobilization (advisory work, contracts with industry and public institutions)	Policies on the commercialization of research
C8 Create techno-economic networks	-	-	Non-academic collaboration in academic research - Market formation, -knowledge diffusion through networking	Policies to develop collaboration University-Industry-State
F8 Social engagement	Social and economic outcomes	Participation in policymaking - Public understanding of science - Involvement in social and cultural life	Social networking - Non-academic dissemination of knowledge	Social engagement - Development of civic competences - Collaboration between HEIs and their communities
F9 Regional development	-	-	-	Regional development and Regional integration
<b>Administrative management</b>				
C9 Attraction of academic staff	Engagement active staff, researcher, and staff support - Staff development	-	Academic staff, scientists and technicians' mobilization	Academic career
C10 Improvement in administrative management	Student support	-	-	Research capacity of the HEI

## RESULTS

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### Processes examined in the literature

This section aims to illustrate the processes (IO-Rs) that are discussed by the sampled empirical literature. The 205 articles reviewed encompassed 1690 variables, which after applying the taxonomies, were classified and coded into 30 inputs (I), 38 outputs (O), 14 intermediate outputs and 16 external factors. Table 2 presents a summary of the variables with the highest frequencies<sup>4</sup>.

Most of the reviewed studies (approximately 90%) model the educational production function classifying the variables as inputs and outputs (i.e., black box models), although sometimes intermediate outputs (Z) are used in the internal structure models (i.e., non black box). Additionally, some of these studies (52.2%) also include variables that represent the environmental conditions in which HEIs operate, and which are known as external factors or determinants of efficiency.

Regarding the set of variables used as proxies for the outputs (O) of HEIs, research has become the most attractive mission to measure (see Table 2). The financing of research and scientific production, especially publications and their quality, are the indicators that represent the accomplishments of HEIs in this mission (Bonaccorsi & Daraio, 2009; Rhaïem, 2017), as evidenced by the emphasis put by 147 out of 205 studies. In the case of the indicators related to research income from donations or grants, they are frequently used as input variables, despite some models consider them as outputs. However, it is important to note that the use of this variable either as input or as output does not necessarily indicate the leverage of resources. On the contrary, in models oriented to inputs, these types of outputs can be indicative of an IO-R related to IESS' capability to operational improvement, as in the studies by Castano & Cabanda (2007), de Guzman & Cabanda (2009), and Kudła & Stachowiak-Kudła (2016).

The graduation rate and the number of enrolled students are the main proxies for assessing the efficiency of HEIs. It is common to find that outputs related to human capital formation are analyzed from global graduation rates (61 out of 205 articles), although some studies discriminate between undergraduate (28 articles), postgraduate (24 articles), and doctorate studies (19 articles) (Table 2). However, as Sánchez-Barrioluengo (2014) warns, postgraduate or doctoral graduation rates are not always considered as indicators of the teaching mission. In fact, a large share of the sampled studies considers them as proxies of the research mission.

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4 Our first findings evidence that the inputs and outputs used in the studies that examine the extension mission of HEIs (i.e., third mission) are exclusively concerned with knowledge transfer. For this reason, hereafter, when we refer to extension processes, we label them as "knowledge transfer".

**Table 2.** Variables of input, output, intermediate outputs and external factors of the IO-R in the literature

Type of variable	Cod.	No. art.	%	Type of variable	Cod.	No. art.	%
<b>a) Input (30 variable types)</b>				<b>b) Output (38 variable types)</b>			
Academic staff	I11.1	132	64.4	Research income	O14.2	78	38.0
Total operation (total expense)	I15.1	93	45.4	Research outcomes	O23.2	69	33.7
Non-academic staff	I11.3	51	24.9	Graduation (rates)	O22.1	61	29.8
Fixed assets value	I13.3	38	18.5	Graduate students (enrolment)	O12.3	35	17.1
Total students (enrolment)	I12.1 <sup>a</sup>	35	17.1	Undergraduate students (enrolment)	O12.2 <sup>a</sup>	34	16.6
Financial revenues	I14.4	28	13.7	Research quality	O23.3	33	16.1
Academic expenditures	I15.2	28	13.7	Total students (enrolment)	O12.1 <sup>a</sup>	32	15.6
Research staff	I11.2	27	13.2	Undergraduate students' graduation	O22.2	28	13.7
Scores of national entrance exam	I12.6	25	12.2	Graduate students' graduation	O22.3	24	11.7
Undergraduate students (enrolment)	I12.2 <sup>a</sup>	23	11.2	Income technology transfer	O14.3	21	10.2
<b>c) Intermediate output (14 variable types)</b>				<b>d) External factors (16 variable types)</b>			
Research outcomes	OZ23.2	5	2.4	Region's economic development	F32.4	34	16.4
Research income	OZ14.2	4	2.0	Funding availability	F32.5	17	8.2
Total students (enrolment)	OZ12.1	3	1.5	Socioeconomics conditions	F32.1	15	7.2
Total operation (Total expense)	OZ15.1	3	1.5	Area of knowledge	F31.4	26	12.6
Research quality	OZ23.3	3	1.5	Sectoral or governance nature	F31.1	23	11.1
Academic staff	OZ11.1	2	1.0	Presence of medical schools	F314.1	18	8.7
Intellectual assets	OZ24.1	2	1.0	Student population	F31.7	17	8.2
Reputation	OZ27.5	2	1.0	Size of the HEI	F31.2	15	7.2
				<i>*Do not use external factors</i>	F0	101	<b>48.8</b>

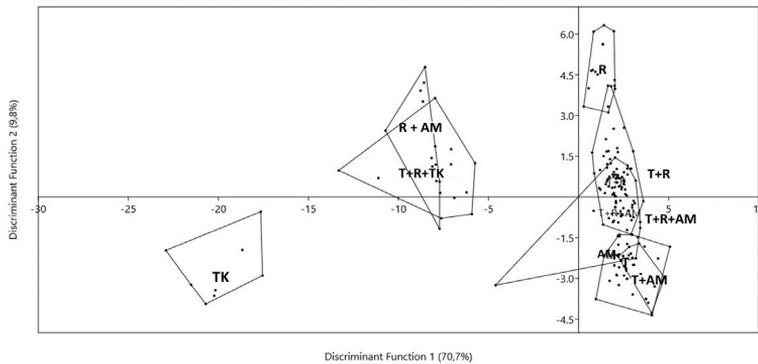
The attraction of human capital is related to the ability of HEIs to attract students, which is estimated by the number of graduate students (17.1%), undergraduate students (16.6%), or by the total number of enrolled students (15.6%). It is worth noting that, despite these indicators have traditionally

been considered as inputs (De Witte & López-Torres, 2017), our results show that all of them are rather used as outputs in the literature, especially when the purpose of the study is to analyze the competitiveness of HEIs (Abbott & Doucouliagos, 2009; Agasisti & Dal Bianco, 2009).

Regarding the third mission, few studies refer to the outputs of this mission (21 articles), and in all cases, the indicator used is the income generated by knowledge transfer activities (Table 2). Despite the potential diversity of outputs associated with this mission (Laredo, 2007b), our results confirm that HEI's third mission is assessed solely from knowledge transfer activities. This occurs, among other reasons, due to the lack of consensus about what is the expected output of the third mission (de La Torre et al., 2018), the autonomy of HEIs to choose their approach towards this mission (Giuri et al., 2019), and the lack of data availability (Molas-Gallart & Castro-Martínez, 2007; Molas-Gallart et al., 2002).

### **Input-Output Relationships (IO-Rs)**

In this section, the sampled studies are classified into IO-Rs according to the combinations of inputs and outputs used, applying a discriminant analysis. Initially, 11 possible IO-Rs were found between the production of the university missions. Therefore, it was necessary to verify whether these IO-Rs helped to classify the studies. To this end, a discriminant analysis was applied to the matrix of variables of the different IO-Rs, excluding those with a single article. The IO-Rs were classified by the first two discriminant functions resulting from grouping the studies into four groups of the IO-Rs (see Figure 4). These functions explain 84% of the total variance and have a significant high value in the canonical coefficient (0.96 and 0.82, respectively). This analysis showed that the median among the variables is statistically different among the analyzed IO-Rs ( $\lambda = 0.002$ ;  $P < 0.005$ ). Therefore, we consider that they provide a satisfactory solution to discriminate the revised studies. According to the p-value of Lambda Wilks, 21% of the variables are relevant to discriminate between these IO-Rs. Most of them correspond to outputs associated with knowledge transfer (O14.3; O24.1; O24.2; O15.4), research quality (O23.3), and total revenue (O14.4). Overall, 161 of the 205 studies (79%) were accurately classified by IO-Rs groups. The teaching and teaching/research IO-Rs appeared to have more misclassifications, implying that these two IO-Rs were harder to characterize based on the groups that were concluded from the extant literature. The examination of the discriminant function score plot (Figure 4) confirmed that knowledge transfer and research/knowledge transfer IO-Rs were fairly well separated from the others, while there was some notable overlap between teaching/research and teaching IO-Rs, as earlier discussed.



**Figure 4.** Discriminant analysis of the IO-Rs in the literature

**Notes:** Centroids correspond to the IO-Rs: Teaching (T), Research (R), Knowledge Transfer (KT) and Administrative Management (AM).

The four IO-Rs identified have different perspectives for analysis (Figure 5). A first group includes studies from the research, teaching/research, and teaching/research/administrative management IO-Rs (i.e., labeled as teaching/research IO-R). In 122 articles (59.5%), modeling this IO-R implies representing the key essential characteristic of HEIs, which is the integration of teaching and research (Martin & Etzkowitz, 2000). From this perspective, the educational production function combines research proxies that are mainly indicative of the generation of resources (research grants, project financing) or scientific production (research results), with global graduation rates or with the number of students enrolled in postgraduate studies (Figure 5). The basic argument for the studies that model teaching/research IO-R is that there are mutual benefits between teaching and research, and hence make HEIs efficient, for example, by linking scholars who are at the forefront in their field of knowledge with the generation of knowledge to achieve better results in teaching. However, there is large empirical evidence that supports the opposite (e.g., Duan, 2019). There is also evidence of the dangers of not combining these two missions (Martin & Etzkowitz, 2000).

The second group includes studies that belong to the IO-Rs associated with the teaching mission, administrative management, and the combination of outputs from these two missions (i.e., labeled as Teaching IO-R). The studies that model this IO-R leave aside the multidimensional nature of HEIs, to delve into teaching processes (one-dimensional models). They propose an educational production function where the efficiency of these institutions is not only represented in granting degrees, but also in attracting students, forming quality human capital, guaranteeing the employability of graduates, and generating an academic offer of quality (Figure 5). In other studies, the

outputs of the Teaching IO-R are decomposed to specify the production by levels of training (undergraduate, postgraduate, and doctorate), or by disciplines (Thanassoulis et al., 2016), which provides some advantages in benchmarking studies. Although there are divided positions about the need to focus on individual missions (Sánchez-Barrionuengo, 2014), our results support the idea that studies using the Teaching IO-R emphasize the quality and excellence in teaching over other outputs. Accordingly, they can reward HEIs specialized in teaching, and hence discourage them to engage in research development and extension (Benneworth et al., 2016).

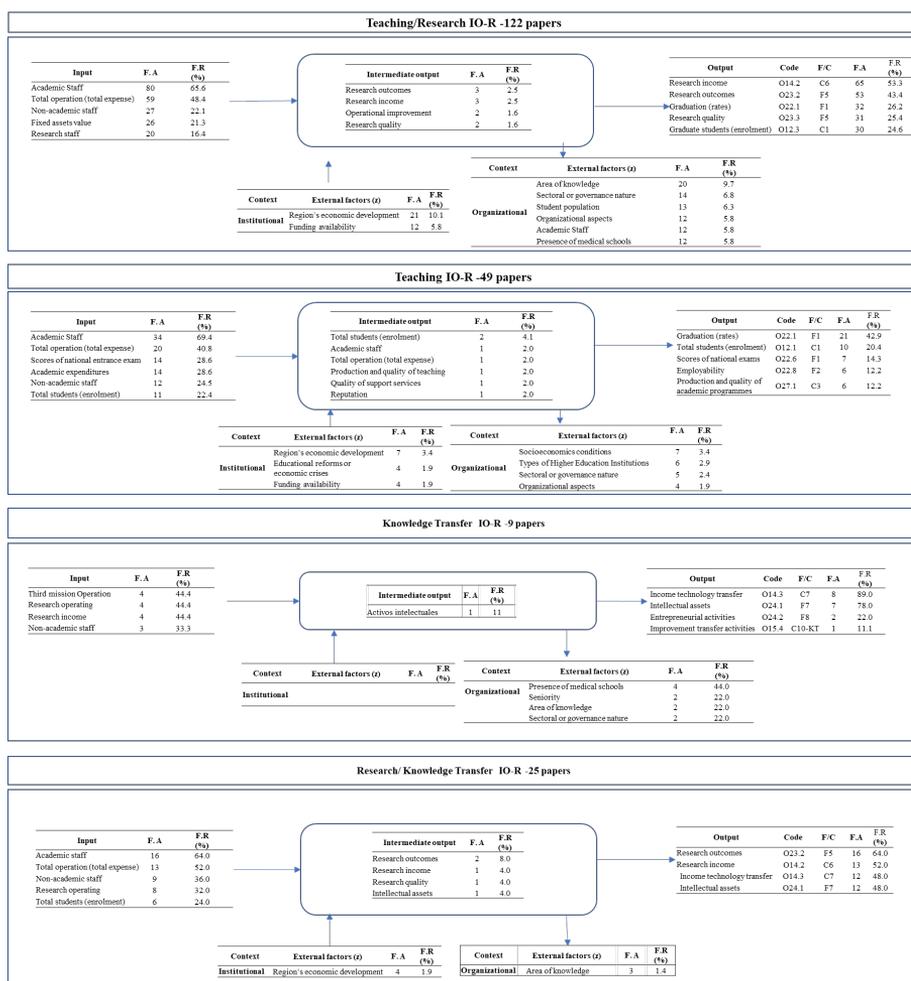


Figure 5. Frequency of variables by IO-Rs groups. n=205 articles

Notes: Funtion (F), Capabilites (C), Absolut frecuency (F.A) and Relative Frecuency (F.R).

The third group only includes studies that belong to the extension mission IO-R, or those whose IO-R is exclusively modeling the knowledge transfer production function (i.e., labeled as Knowledge Transfer IO-R). Conceptually, this IO-R is closer to a knowledge production function (Azagra Caro, 2003), than to an educational production function. Thursby & Kemp (2002), use the Knowledge Transfer IO-R to examine the different outputs that characterize university licensing activities. They include five outputs as representative of this IO-R: sponsored research agreements between HEIs and industry; license agreements that allow the exploitation of HEIs' intellectual property; fees received by HEIs in exchange for the use of their intellectual property; academic dissemination of potentially marketable innovations; and university patent applications. In the sampled literature, few studies model this IO-R (9 studies), and all of them use one or more of the indicators described by Thursby & Kemp (2002). In particular, these studies have quantified the income received by HEIs as a result of the research agreements sponsored by industry (Figure 5). Recently, some indicators related to entrepreneurship have also been considered by Ho, Liu, Lu & Huang (2014).

Finally, the fourth group includes studies from the research/extension and research/extension/teaching IO-Rs (i.e., labeled as research/knowledge transfer IO-R). This group includes studies that link research to knowledge transfer, and those (less common) that deal with modeling the three university missions. The studies that use research/knowledge transfer IO-R, unlike the knowledge transfer IO-R, jointly analyze the results in research and knowledge transfer, and its relationship with the availability and capabilities of academic staff (Figure 5). The studies that use this IO-R have in common the concern about whether the expansion of functions in HEIs to fulfill a third mission affects their performance (i.e., de La Torre et al., 2017).

### **Structure of the models**

Because of the multi-dimensionality and multi-production of HEIs, it is thus expected that: 1) synergies occur between the production processes assigned to each mission; 2) there is an orderly sequence of outputs that accumulate in each dimension of the system; and 3) there is heterogeneity in the forms of production (Cheng & Wu, 2008; Cohn et al., 1989; Johnes & Johnes, 2009). In the production models discussed in the literature, the synergies that characterize the production of HEIs are managed in three ways. First, there are production models that assume that synergies do not occur, and where the production of each mission is independent from the others (one-dimensional). These production models approach multi-product through proxies that reflect several outputs of the same mission

(Johnes, 1998). Second, there are production models – interdependent – that assume that synergies occur either between missions (Cherchye et al., 2017). Finally, there are some production models – interactive – that assume a flow of intermediate outputs between missions (An et al., 2017), which may sometimes be generated from shared or related inputs (Cherchye et al., 2013). It is important to note that examining the processes of each mission independently can generate flaws in assessment and its interpretation, due to the synergies that exist among production functions (Johnes, 2015).

Most studies use frontier methods to estimate efficiency, particularly Data Envelopment Analysis (DEA) (64.8%), Stochastic Frontier Analysis (SFA) (26.2%), or a combination of both (8.1%), which confirms the findings of previous reviews (De Witte & López-Torres, 2017; Rhaeim, 2017; Gralka, 2018). In the last decade, several researchers have achieved significant progress to model the production of HEIs. For example, the advances in DEA techniques have allowed to ‘open’ the black box and model the causal relationships within HEIs (Cherchye et al., 2017; Kao, 2014; Liu et al., 2013; Tone & Tsutsui, 2014). With regard to SFA there are important advances in the models that analyze time-invariant efficiency, time-variant efficiency, environmental variables, heterogeneity, persistent inefficiency, or distributional assumptions (see Gralka, 2018).

It is common (89.1%) in the literature to use ‘traditional’ models in which production processes are interpreted as black boxes, in which the transformation of inputs into outputs is not considered (Aparicio et al., 2017), nor is the variation over time (Emrouznejad & Thanassoulis, 2005). This way of modeling the IO-R assumes that all HEIs have the same capabilities to fulfill their functions, which is certainly far from the observable heterogeneity (Benneworth et al., 2016). As evidenced in Table 3, three models dominate the extant literature. The first model is black box, time-invariant and multi-dimensional (50.7%). This model assumes that synergies occur between outputs of different missions, but it does not specify the transformation from inputs to outputs. The second model is also traditional, but assumes synergies between outputs of a single mission (one-dimensional), and is specifically applied in the IO-R Teaching (38 articles). The third type of model is multi-dimensional, black box, and dynamic (12.7%). Despite their internal structures are time-invariant, they intend to measure changes in productivity over time, assuming there is no intertemporal dependency between inputs and outputs (Chang et al., 2015; Emrouznejad & Thanassoulis, 2005; Gralka, 2018). To reach this goal, these models use the Malmquist productivity index, and do rarely use others such as the Hicks-Moorsteen productivity factor or the Luenberger indicator.

There are additional models that are recently applied to model production systems in higher education (see Table 3). These models are based on network structures and reflect the multilateral relationships between the different phases of a mission, and between different missions (Lee & Worthington, 2016; Cook et al., 2010; Schalk et al., 2010). Specifically, in higher education, the most used network DEA models are those of two-stage (Kao, 2014; Liu et al., 2013). These models assume that all inputs are devoted to the first process to produce certain intermediate products, which are, in turn, the inputs of the second process to produce the final outputs. Besides opening the black box, other scholars have resorted to evaluate the adjustment between the production of HEIs and the results expected from them (i.e., effectiveness), such as those of Clermont (2016), Powell et al. (2012), and Thanassoulis et al. (2018). Other network structures, although less common, are the parallel structure (7 articles) and the general structure in two stages (2 articles). Unlike the basic structure, these models allow inputs to be supplied to both stages of the process, which can also produce final outputs (Kao, 2014). Other forms of modeling correspond to dynamic network-based models that evaluate several periods, assuming that the production process follows a time sequence (i.e., there is intertemporal dependence between inputs and outputs). Examples of the latter models would be those by Färe & Grosskopf (1997), who have pioneered dynamic DEA models, the Tone & Tsutsui model (2014), or the intertemporal DEA model proposed by Chang et al. (2015).

**Table 3.** Distribution of models used in the literature

Dimensionality	Structure	IO-Rs groups			Total		
		T/R	T	KT	R/ KT	No. Papers	%
Multi-dimensional	Black box - time-invariant	93	-	-	11	104	50.7
One-dimensional	Black box - time-invariant	-	38	7	-	45	21.9
Multi-dimensional	Black box - Dynamic	19	-	-	7	26	12.7
Multi-dimensional	Non Black box - time-invariant	7	-	-	4	11	5.3
One-dimensional	Black box - Dynamic	-	6	1	-	7	3.4
One-dimensional	Non Black box - time-invariant	-	5	1	-	6	2.9
Multi-dimensional	Non Black box - Dynamic	1	-	-	3	4	1.9
One-dimensional	Non Black box - Dynamic	-	2	-	-	2	0.9
	Total	120	51	9	25	205	100

## Functions and capabilities of HEIs

To discriminate between functions and capabilities, we followed the cascade model used by Potschin & Haines-young (2013). From the outputs modeled in the different IO-Rs, 7 functions and 12 capabilities were identified (Table 4).

The comparison of these results with the capability/function classification scheme (see Table 1) reveals the absence of indicators representing social engagement (F8) and regional development (F9) in efficiency evaluations. By contrast, attainment and graduation rates are the most discussed functions in efficiency evaluations (50.7%), and the capability of HEIs to mobilize resources for research (40.6%). The multi-dimensional perspective dominates evaluations, as most studies examine two or three different functions (65%), and in some other cases (17%), more than four functions. Only 18% of the studies analyze a single function, and most of them evaluate the efficiency of teaching. However, these results should not be interpreted too simplistically, because the choice of functions or capabilities may depend to a large extent on the availability of reliable data. For this reason, we have analyzed which functions and capabilities are chosen to analyze the primary objectives of higher education.

**Table 4.** Functions and capabilities by IO-Rs groups

C/F	Description	IO-Rs groups				Total
		T/R	T	KT	R/KT	
<b>Teaching mission</b>						
F1	Attainment and graduation rates	45.9	73.5	-	52.0	50.7
C1	Attract students	41.0	38.8	-	20.0	35.7
C3	Academic production and quality assurance	9.8	12.2	-	-	8.7
F2	Employability	4.9	12.2	-	-	5.8
C5	Resources mobilization-Teaching	4.9	8.2	-	12.0	6.3
C2	Reduce student dropouts	5.7	10.2	-	-	5.8
C10-T	Improvement in academic operations	4.1	4.1	-	8.0	4.3
C4	Internationalization	4.1		-	-	2.4
F3	Continued education and lifelong learning	0.8	2.0	-	-	1.0
<b>Research mission</b>						
C6	Resources mobilization-Research	54.9	6.1	-	56.0	40.6
F5	Generation of new knowledge	54.1	-	-	68.0	40.1
F4	Doctoral and postdoctoral education	16.4	12.2	-	28.0	15.9
C10-R	Improvement in research activities	10.7	4.1	-	8.0	8.2
<b>Extension (knowledge transfer)</b>						
C7	Revenue from knowledge transfer	-	2.0	88.9	48.0	10.1
F6	Generation of Intellectual assets	-	-	77.8	48.0	9.2
F7	Entrepreneurial activities	-	-	22.2	16.0	2.9
C10-KT	Improvement in transfer activities	0.8	-	11.1	-	1.0
<b>Administrative Management</b>						
C10	Improvement in administrative management	8.2	14.3	-	-	8.2
C9	Attraction of academic staff	6.6	2.0	-	8.0	5.3

The central purpose of HEIs is to contribute to the formation of human capital in a territory (OECD, 2017a). Over the years, the literature has examined that HEIs fulfill this policy goal, particularly through the measurement of attainment and graduation rates (50.7%). Recently, measuring the training at the doctoral and postdoctoral levels has gained importance (15.9%). However, this function is closer to research than to teaching (Sánchez-Barrioluengo, 2014). Very few studies have targeted the employability (5.8%) or the provision of continued education and lifelong learning (1.0%). In terms of capabilities, it is common and recurrent to examine the capability of HEIs to attract students (35.7%), being mainly representative of the teaching mission (ibid). Other key capabilities that support the training of HEIs are less considered in efficiency evaluations, such as producing academic programs and accrediting their quality (8.7%), resource mobilization by teaching, particularity generating income by tuition (6.3%), or reducing student dropouts (5.8%) (see Table 4). In terms of capabilities, our findings indicate that the internationalization of HEIs remains the biggest challenge, as only 5 articles include variables related to international production (international students, international mobility, etc.).

Another central intent of HEIs is to contribute to innovation (OECD, 2017b), being this understood as a process that generates added value from research results (Azagra Caro, 2003; Molas-Gallart & Castro-Martínez, 2007; Philpott, Dooley, Oreilly & Lupton, 2011). Our results show that the literature focuses on whether HEIs generate new knowledge (40.1%), activity levels in doctoral and postdoctoral education (15.9%), and in the conversion of research results into intellectual assets (9.2%) or entrepreneurial activities (2.9%). Likewise, our results highlight the capability of HEIs to mobilize resources through research and knowledge transfer activities. In particular, the literature points to the relevance of generating new income sources from competitive funds supporting the development of research (C6 = 40.6%) and consultancy activities, either for the provision of research services or for the licensing of intellectual assets (C7=10.1%).

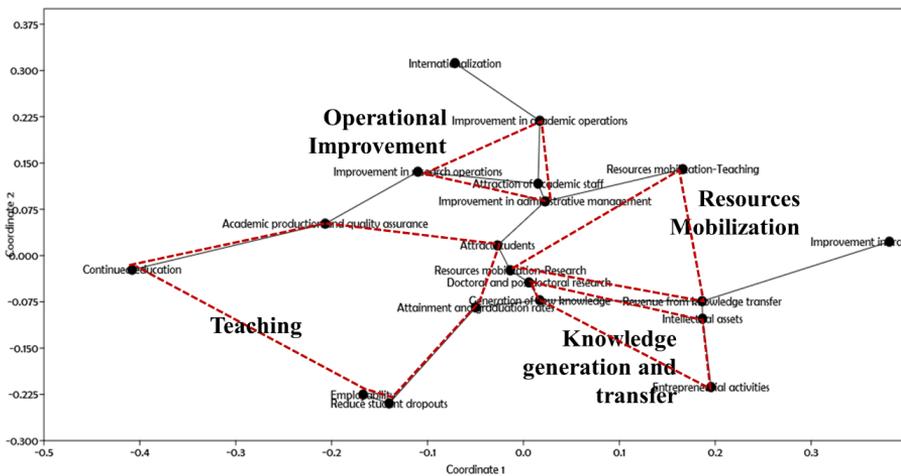
The third driver of HEIs is related to the role they play in social, cultural, and environmental development (Giuri, Munari, Scandura, & Toschi, 2019; Laredo, 2007b). Our results show, however, that this university mission is only evaluated from the perspective of knowledge transfer. From our point of view, the contribution of HEIs to regional development and integration, the dissemination of research results to societal actors, the engagement with policy makers, and their inclusion in social and cultural life, is something that should be tackled by future research.

## Introducing a functional framework to assess HEIs' performance

This section introduces the functional framework that integrates the functions and capabilities considered by the empirical literature, applying a Minimal Spanning Tree analysis. This functional framework represents a function/capability (each node), and the length of the line segments indicates the percentage of studies in which the output variables are shared by two nodes (Figure 6).

Empirical studies have different approaches to measure the missions of HEIs, although they evaluate similar activities and processes. The functional framework reveals that there are four key competences that characterize HEIs' evaluations, which are the functions of teaching and research-knowledge transfer, and the capabilities of resource mobilization and improvement of teaching activities.

The generalization of IO-Rs concerning university missions highlight the functions and capabilities related to innovation, and it masks other them that are relevant in the operation of higher education. Although the set of the functions and capabilities turns out to be indispensable for the functioning of HESs, most of these are also key in science and technology systems, and innovation systems (i.e., Laredo, 2007a; Molas-Gallart et al., 2002). Therefore, we consider that this functional framework offers information that could be useful for future research not only on the contributions of HEIs to HESs, but also on their contribution to innovation systems, and to science and technology systems.



**Figure 6.** An integrative framework of functions and capabilities of HEIs based on the literature about performance assessment (1988-2018)

One of the key capabilities for assessing the performance of HEIs is their capability to mobilize economic resources, and specifically, their capability to obtain resources from competitive funds that finance research, and to sell or provide specialized services. The main objective of efficient HEIs in implementing an income generation strategy is to maximize income (see Figure 5), and to maximize the amount of research and services generated to support industry or government (Philpott et al., 2011). At the level of HESs, the measurement of this capability tends to reinforce the gap between specialized and highly prestigious HEIs and generalist HEIs that meet the demands of local knowledge (Giuri et al., 2019), which can lead to failures in the operation of these systems. Our review has evidenced that it is common in the literature to examine whether the efficiency in the development of this capability is affected by local environmental conditions, such as the presence of funding opportunities and the area of knowledge in which it operates. However, funding instruments also reward HEIs that implement income generation strategies, which means that generalist and low-prestige HEIs must support research with the income generated from teaching (de La Torre, Casani & Sagarra, 2018). It is important to note that the capability of HEIs to leverage resources is considered an essential capability for the development of research functions and knowledge transfer (Philpott et al., 2011) and a success factor in world-class universities (Salmi, 2009).

Generating new knowledge and obtaining research results is the most attractive function in the performance measurement of HEIs. The fulfillment of this function emphasizes the creation, dissemination and practical application of knowledge in academic and non-academic fields (see Figure 5). In the last decade, we have observed how the functions and capabilities related to knowledge generation and its transfer to society have started to dominate performance evaluations. These findings could be interpreted as a bias in the literature when judging the performance of HEIs, mainly from the elements that characterize research universities (Abramo & D'Angelo, 2014), or from those universities that are in a transition towards the adoption of entrepreneurial models (Etzkowitz, 2017), with potential unintended consequences on the structure of HESs and on their sustainability. The relevance given to generating new knowledge function has also contributed to widening the gap between prestigious HEIs and those specialized in areas of knowledge that have better publication rates, as compared to HEIs with low prestige (Giuri et al., 2019) and those dedicated to teaching (Benneworth et al., 2016). It is worth noting that the fulfillment of this function by HEIs is considered a prerequisite for innovation, becoming an essential function in their operation (Azagra Caro, 2003; Hekkert et al., 2007). However, one of these potential consequences is related to the hiring, retention and

dedication to teaching of lecturers, a HEIs capability that has been poorly assessed by the literature (see Table 4).

Teaching is evaluated specifically in terms of the ability of HEIs to graduate (function) and attract (capability) students. Despite universities are currently required to be more committed to the employability of their graduates, it is notable that the effort to evaluate the compliance with this function is recent and much less frequent (5.8%) than the effort to evaluate educational achievements (50.7%). According to our results, few studies are concerned with the performance of HEIs from their contribution to the training of the workforce or from their internationalization capability, the latter being referred by Salmi (2009) as a key success factor of world-class universities. With regard to the capability of HEIs to attract and concentrate talent, the ability to attract students (35.7%) dominates the evaluation of HEIs' efficiency. In turn, the number of studies that measure the ability of HEIs to retain students (5.8%), attract academic and research staff (5.3%), and to internationalize their activities (2.4%) is much lower, highlighting the need to develop metrics and to expand evaluations to cover these capabilities. It should also be noted that there is a greater interest in the literature to assess the performance of HEIs from their ability to attract students (35.7%), rather than from their ability to retain them or decrease their dropout (5.8%). Another pending aspect to consider in future research is thus related to the academic quality and the satisfaction of students on academic services.

The ability to improve operationally HEIs focuses primarily on examining research-related processes, as well as to produce academic programs and certify their quality. Specifically, the ability to improve academic quality is indicated by the decrease in spending and the increase in the production of academic credits. As shown in Figure 6, operational improvement is related to the capability of attracting students. On the other hand, the operational improvement of research is related to the attraction of human resources and to decrease the expenses in research. Furthermore, internationalization is considered a capacity, and not a function. According to the literature, the efficiency in fulfilling these capabilities is particularly determined by the size of the HEI.

Operational improvements in HEIs are essential for the sustainability of higher education systems (Sav, 2016). However, in the current competitive environment, the measurement of these capabilities tends to reinforce the gaps between HEIs due to rigidities in inputs (An et al., 2017; Duan, 2019). Examples can be found in the limitations in the access to qualified academic staff faced by regional HEIs, or the scarcity of financial resources to create adequate learning and research facilities (e.g., for modern laboratories in response to changes in the educational environment) (Benneworth et al., 2016).

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## CONCLUSIONS

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The results of this review evidence the limitations of the generalization of the I-ORs with respect to the three university missions. Based on functions-capabilities framework, we conclude that the empirical literature has considered it relevant to evaluate four competences in HEIs, shedding new light on an alternative methodological approach to the traditional models based on the three missions. From a functional perspective, this alternative leads us to highlight two basic functions, teaching and research-knowledge transfer, and two basic capabilities, the mobilization of resources and the improvement of activities. The most recurrent is the HEIs ability to mobilize and generate economic resources, followed by their ability the generate research results and convert them into (tangible or intangible) assets. Consequently, one of the most notable results of this paper is the fact that more than 60% of the studies are inclined towards measuring functions and capabilities related to the fulfillment of objectives of research and knowledge transfer missions.

The functional framework presented here shows that there are several mismatches between the production that is examined in the assessment of HEIs' performance and the goals of higher education policies. This has important implications, both for academia and for the policy practice of HEIs and HESs, if we are to achieve a fair and equitable representation of the activities performed by HEIs and their multiple contributions to HESs. Our framework shows that the functions and capabilities related to extension (i.e., social approach) and internationalization are clearly underrepresented in the literature. Due to, in many cases, the absence of data and information on social commitment, contribution to local development, regional integration, mobilization, and international insertion remains a bottleneck that could impede the future of systemic evaluations of HEIs. It should be noted that this representation of the operation of HEIs has some limitations, including: 1) the difficulty of measuring quality (Agasisti & Dal Bianco, 2009; Sánchez-Barrioluengo, 2014); 2) the interactions of the variables in the production of the activities carried out by HEIs; and 3) the lack of measures for many outputs. However, one of the main advantages of this approach is the adoption of the concepts of functions and capabilities expressed as input-output relationships.

The main trends observed in the review are described below, and based on the identified gaps, future research opportunities are identified. Our findings suggest that the different IO-Rs are common for the measurement of all types of HEIs, but our intuition is that despite measures may coincide, the existence of one type of HEI or another may have a direct impact not only on the educational performance of countries, but also in their economic and social development. From this perspective, further research

could dig into the motivations for falling into institutional isomorphism, and the extent to which this isomorphism is also accompanied by an economic convergence, or whether an institutional isomorphism actually leads to an economic anisomorphism.

This review demonstrates to policymakers that the efficiency assessment is focused on a few functions and capabilities of HEIs. In particular, the review emphasizes the need to address broader analytical frameworks that help to avoid possible systemic failures that may arise due to the absence or excessive importance given to concrete functions and capabilities. Nevertheless, we acknowledge several limitations that leave room for further improvements in the approach. The functional framework has been developed inductively from the main lines of reasoning of the objectives of higher education policies and the perspectives of analysis of the efficiency of HEIs. To further consolidate the theoretical and practical foundations of this policy-oriented framework, deeper integration of the efficiency perspective and the functionalist approach would be necessary. In this regard, further research could provide methodological alternatives that integrate into the same analytical framework the analysis of the structural transformations of HESs and the changes in their operation.

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### Abstrakt

**Cel:** Artykuł przedstawia ramy funkcjonalne, które syntetyzują funkcje i możliwości, które obecnie kierują ocenami empirycznymi zidentyfikowanymi w literaturze. **Metodyka:** W artykule dokonano systematycznego przeglądu literatury przedmiotu, który rzuca światło na związek między modelowaniem produkcji uczelni a celami polityki szkolnictwa wyższego. **Wyniki:** Nasze wyniki dowodzą, że w modelach produkcyjnych stosowanych do pomiaru wyników instytucji szkolnictwa wyższego dominują cztery zależności między nakładami a wynikami. Jednak nasze wyniki wskazują na istnienie pewnych nierówności w pomiarze trzech misji uniwersyteckich. **Implikacje dla teorii i praktyki:** Przedstawione tutaj ramy funkcjonalne pokazują, że istnieje kilka rozbieżności między produkcją, która jest badana w ramach oceny wyników uczelni, a celami polityki szkolnictwa wyższego. Ma to istotne implikacje, zarówno dla środowiska akademickiego, jak i dla praktyki politycznej uczelni i HES, jeśli mamy osiągnąć uczciwą i sprawliwą reprezentację działań prowadzonych przez uczelnie i ich wielokrotny wkład w HES. **Oryginalność i wartość:** Przegląd ten podkreśla potrzebę zajęcia się szerszymi ramami analitycznymi, które pomogą uniknąć potencjalnych błędów syste-

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*mowych, które mogą powstać z powodu braku lub nadmiernego znaczenia przypisywanego konkretnym funkcjom i możliwościom.*

**Słowa kluczowe:** uczelnie, funkcje, wydajność, możliwości, przegląd literatury, integracja, efektywność, ramy funkcjonalne.

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## Conflicts of interest

The authors declare no conflict of interest.

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# Consumer attitudes and behavior towards organic products: Evidence from the Lithuanian market\*

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## Abstract

**Purpose:** The paper analyzes consumer attitudes and related behavior towards organic products and determines the factors affecting consumer attitudes towards organic products and Lithuanian consumers' choices. **Methodology:** Previous scientific works are analyzed and generalized in order to provide scientific substantiation for the research. A questionnaire survey is provided in order to approve the theoretically established factors in the Lithuanian market of organic products. The questionnaire is comprised of 23 statements representing eight latent variables: six possible reasons for the choice of an organic product (health issues; environmental concerns; food safety and quality; economic reasons; social reasons; psychological reasons) and two possible outcomes (intentions to choose organic products; actual organic product purchases). The survey results are based on the answers of 269 respondents representing the population of the four biggest cities in Lithuania. **Findings:** The results indicate the structural differences between theory and its application for the Lithuanian market; therefore, the factors are reestablished. The research results show the high level of Lithuanian consumers' environmental consciousness; also, a willingness to share information relating to environmental issues with friends; and active engagement in sharing information about environmentally related issues. However, consumer awareness of the relationship between organic products, and health and quality issues is lower, indicating the necessity to be managed. Also, consumers do not express high agreement that organic products have to be more expensive; they do not intend to pay a higher price for them. Research results show that Lithuanian consumers do not choose organic products often and they also do not express conformable behavior (resulting from organic product purchases).

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**Implications for theory and practice:** *The research results enable the ability to compose a clear framework of Lithuanian consumer attitudes and behavior towards organic products. The established factors affecting consumer attitudes and behavior can be further explored and modeled according to different market situations.*

**Originality and value:** *Based on the results, companies can elaborate on effective marketing strategies fostering consumer attitudes and behavior in a particular way.*

**Keywords:** *consumer attitudes, consumer behavior, consumer choice, ecologic consumption, environment-friendly, environmentally-friendly, organic products*

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## INTRODUCTION

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According to statistics presented by The World Organic Agriculture Statistics and Emerging Trends (2018), the consumption of organic produce is growing impressively; global sales of organic products in 2016 were almost 90 billion US dollars. The European market for organic products in 2016 was 35 billion US dollars. Ireland and France saw more than 20 percent growth in the consumption of organic produce, while in Switzerland, it grew by 8.4 percent. Sales of organic produce became common in Western Europe with Germany having organic produce sales of 10.4 billion US dollars and France 7.8 billion US dollars. The largest markets among countries in Europe were in Italy, the United Kingdom, Switzerland, and Sweden. Central and Eastern European countries such as Poland, Hungary and Lithuania emerged on the map of organic products as producers, even having market shares below 1 percent.

A growing organic produce market in the world shows that contemporary consumers are becoming aware of environmental problems and their solutions take shape in environmental protection or sustainable consumption; moreover, the modern consumer's shopping cart often 'faces' some organic product. A large body of studies has investigated consumer behavior in terms of organic produce purchases. Ventura-Lucas et al. (2008) and Sumathi and Gabriel (2017) argue that consumer attitudes towards 'organic' are often positive, showing that they believe that the organic food products are healthier, tastier, and provide higher quality than conventional foods. According to Sumathi and Gabriel (2017), the intention of Malaysian consumers regarding organic food purchases is highly impacted by the respondent's attitudes towards safety, health-related issues, environmental forces, and animal welfare. A study by Irianto (2015) reveals that human health and environmental consciousness act as the major factors encouraging consumers to choose organic production.

As the consumption of organic produce is growing, adequate decisions have to be taken in order to fulfill consumer priorities. Wang et al. (2013) argue that managing consumption is a principle action that has to be taken

in order to achieve sustainable development. Ecologically conscious behavior on consumption might encourage businesses to acquire a philosophy of green marketing in their activities. In addition, Hughner et al. (2007) argue that organic and conventional food-based industries have to monitor and appraise consumer motivators, perception, and attitudes towards organic products during the process of consumption. Such understanding will be beneficial in the long-term, as a result of higher quality and better meet consumer expectations. However, Khare (2014) emphasizes that contemporary consumers still misunderstand conceptions like 'recyclable,' 'earth-friendly,' and 'organic'; therefore, meeting consumer expectations related to the environment and attitudes towards organic consumption leads to the application of sustainable marketing strategies.

Despite the worldwide trend for sustainable consumption and ecologically conscious consumer behavior, differences in its essence are obvious among countries or regions; e.g. Malaysian consumers are health conscious and driven by perceived value (Shaharudin et al., 2010), while Tunisians are price sensitive in regard to organic product purchases (Ghali-Zinoubi & Toukabri, 2019). Research conducted by Spanish (Fraj & Martinez, 2006a, 2006b) and Belgian and Polish authors (Roozen & De Pelsmacker, 2000) detected that consumers' positive attitudes to environmentally-friendly products had no significant effect on their behavior. Bachnik and Szumniak-Samolej (2017) provided an example of the difference in consumer attitudes towards foods: some people saved time by consuming fast food; others enjoyed the process of slow food preparation. An assumption can be made that factors affecting organic product choices might be different in different countries; therefore, Lithuanian consumers might act in line with a specific tendency. Thus, this research seeks to contribute to the body of knowledge on organic production, sustainable consumption, and environmental consciousness by answering the following question: What are Lithuanian consumer attitudes and behavior regarding organic produce? The aim of the research is to determine Lithuanian consumer attitudes and behavior regarding organic products.

In order to reach the purpose raised for the research, the following methods were applied: a theoretical analysis of the essence of sustainable consumption and consumer behavior regarding organic products was based on the analysis of the scientific literature and related scientific research; an empirical investigation was provided by applying a quantitative survey, limited to the territory of the Republic of Lithuania. Looking to provide the research results clearly, the article is organized as follows: a conceptual framework for the research in the form of a theoretical analysis is provided in the Literature review; the Research methods section provides an explanation of the research

methodology; further, an analysis of the research results is provided. The discussion and conclusions are provided at the end of the article.

## LITERATURE REVIEW

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### The essence of sustainable consumption

Liu et al. (2012) emphasize that a substantial part of sustainable consumption belongs to green purchases; such 'green' behavior diminishes the negative effect of humanity on the environment. Therefore, consumers are increasingly starting to consider environmental problems, engaging in energy-reducing consumption, using environmentally-friendly products, etc. Sustainable behavior expressed by consumers can be envisioned in the consumption of products and services fulfilling their basic needs and also bringing a higher quality of life, whilst at the same time reducing the use of natural resources, avoiding toxic materials, diminishing waste emissions and pollutants. In such a way, future generations' needs are being respected (Norwegian Ministry of the Environment, 1994). Therefore, consumers become increasingly aware of the effects of consumption on the natural environment and the welfare of humanity in the future (Kostadinova, 2016). Research by Hueber (1991) shows that over 70 percent of Americans support the protection of the environment; moreover, 49 percent of them would refuse to purchase products that could be environmentally unsafe or harmful.

Despite the sustainable consumption supporting results, the empirical evidence suggests that a strong consumer willingness to behave sustainably does not always result in any actual behavior (Carrigan & Attalla, 2001; Auger & Devinney, 2007). Seeking to understand the reasons for the latter differences, the research of factors affecting consumers' sustainable behavior is performed widely. A variety of scientific research on the latter issues comes with the evidence that social norms, values and individual beliefs are important factors affecting consumer choice of sustainable consumption (Allcott, 2011; Peattie, 2010; Thøgersen, 1999). Caruana (2007) emphasizes that during the choice process, in line with the price and quality of the products, consumers are guided by the norms, acquired values, and beliefs they possess. Another research provided by Poortinga, Steg, and Vlek (2004), reported that attitudes towards environmental products and related behavior resulted from consumer's values. Also, Stern, Dietz, and Guagnano (1995) argued that social values were a major factor in influencing different levels of sustainable consumption. Research provided by Şener and Hazer (2007), with a women sample in Turkey, provided evidence that the values had an

impact on environmental behavior. Consumers' perception of their personal influence on environmental changes also resulted in their environmental behavior (Roberts, 1996). On the other hand, research by Baldassare and Katz (1992) and SGuin, Pelletier, and Hunsley (1998) showed that the perception of a possible threat significantly influenced consumer environmental behavior in a positive way. Finally, it could be argued that social norms, values and individual beliefs have to be considered as important factors in expressing actual sustainable behaviors and sustainable consumption.

The terms of consumer 'ecological consciousness' or 'ecological awareness' express consumers' willingness to understand issues related to the 'natural world' with respect (Panov, 2013). These examples of ecologically conscious behavior could serve such behaviors as saving energy and resources; choice of non-toxic materials; or endeavors for waste reduction. Also, ecological shopping has to be considered as an indicator of this type of behavior (Dubihlela & Ngxukumeshe, 2016). However, being quite novel in the scientific literature, the issue requires theoretical as well as methodological establishment in terms of causes (antecedents) and outcomes in order to be properly managed.

### **Consumer behavior regarding organic products**

A wide body of research regarding consumer behavior towards organic produce and its purchases can be found in the scientific literature. Ajzen and Fishbein (1980), in their study, mention that 'consumers with a positive attitude' towards organic foods might not necessarily show an intention to buy them; also, consumers do not agree to pay a premium price for organic food products (Grunert & Juhl, 1995). On the other hand, some research regarding green consumers tries to explore the contributing motives in order to predict consumer decisions and intentions to purchase organic products. The most broadly analyzed motives and factors affecting consumer purchases of organic products are health (Ghali-Zinoubi & Toukabri, 2019), environmental issues (Kim & Choi, 2005; Mei, Ling, & Piew, 2012; Prakash, Singh, & Yadav, 2018), produce safety, and its quality (Ghali-Zinoubi & Toukabri, 2019).

*Health issues* are the main motive in some researchers' works. Sumathi and Gabrial (2017) argue that consumers perceive organic products as environmentally-friendly food products; such food products are fresh, hygienic, and healthy. For the past few years, people have become more health-conscious and started approaching dietitians, nutritionists, gyms, etc. The increased concern to maintain a healthy lifestyle has also shaped consumer attitudes towards food; therefore, food without unsafe additives, preservatives, flavor and coloring has become popular (Shaharudin et al., 2010). According to a newly forming perception, hygienic and nutritional food gave good results for human

health; therefore, people started buying organic food products. Accordingly, an organic food product was established in consumer consciousness as a nutritional food that kept the human body healthy.

Other researchers (Rimal, Moon, & Balasubramanian, 2005) argued that consumers perceived organic products as having fewer pesticides, herbicides, and other substances harmful to the human body. A demand for organic products, in particular, evolved from the need for safety and health. In the consumer consciousness, each product could be characterized by a set of different attributes. When choosing a product, some of its features are more important than others; moreover, the characteristics of different consumer groups may vary. Therefore, while marketing a product and communicating with consumers, the most important features of that product have to be emphasized.

The main motives for consuming organic products such as the health issue, were also provided in the work of Tsakiridou et al. (2008). The researchers argued that Greek consumers were interested in information about the products' nutritional value; moreover, the demand for chemical residue-free products was increasing. On the other hand, Croatian consumers understood organic food products as being healthy, having a better quality, and being tastier than conventional foods. But despite that, when analyzing the economic side, such products were related to more expensive produce and were perceived as having a worse appearance (Radman, 2005). However, the extended use of antibiotics and hormones in the production processes was understood as having a negative impact on health, which could be avoided or minimized with the help of organic products. Analyzing consumer attitudes towards organic food, Stolz et al. (2011) suggested measuring health concerns by assessing consumer attitudes regarding: artificial flavors and additives; pesticide residues in fruits and vegetables; genetically modified food; and produce of animals kept outside in comparison to those kept indoors.

*Environmental concerns* are aggregated into a second important factor for many consumers. For instance, Bamberg (2003) showed that the level of environmental concern strongly influenced human behavior in terms of intentions to recycle and save energy, consumers' choice to purchase environmentally-friendly products, or even in the way people travel.

A variety of scientific research (e.g., Roberts, 1996; Chan & Lau, 2000) has shown the links between environmental concern and some ecologically conscious behaviors. The research provided by Mei, Ling, and Piew (2012) found that environmental attitude was a significant factor affecting green purchase intentions. Analyzing the issue, Kim and Choi (2005) highlighted that there was a higher possibility that more environmentally concerned consumers would buy environmentally-friendly products when compared

to less concerned people in this respect. The results of their research showed that: *'humans must live in harmony with nature in order to survive'* and respondents were *'extremely worried about the state of the world's environment and what it will mean for their future.'*

However, other studies showed that environmental issues were not so important for consumers when buying organic produce. Studies provided in some countries suggested that consumers think that environmental factors need to be addressed by the government. Fraj and Martinez (2006a, 2006b) analyzed lifestyle and values as the factors affecting ecological behavior among Spanish consumers. In a framework of the latter research, environmental patterns and self-fulfillment values were found to determine consumers' ecological behavior. Respondents' environment-related attitudes were found to be positive; however, their impact on purchasing or acquiring only environmentally-friendly products was not supported. Consumers assumed that environmental protection had to be performed by the government and public institutions. Also, Roozen and De Pelsmacker (2000) provided similar evidence from Belgium and Poland. According to the research results, environmental attitudes did not always result in the purchase of green products.

*Food safety and quality* are also important motives to purchase organic produce in some countries. For example, in Spain, consumers are becoming more interested in information about nutrition, health, and food quality (Gil, Garcia, & Sanchez, 2000). Accordingly, the main factors influencing consumers' choices when buying food products were determined to be as follows: freshness, flavor, appearance, security (whether it was a healthy product, or a reliable manufacturer, or known product brand), and assortment. The research by Stolz et al. (2011) demonstrated that consumers who chose organic products (in comparison with those who chose conventional food) were likely to be more informed regarding food ingredients.

The appearance of the product always indicates the freshness of the product. It can be argued that no user buys a favorite product if they notice that its expiration date has passed. The deadlines for the realization of organic products are much shorter than for conventional ones; therefore, this issue requires special attention. In addition, if a product is stored, transported, or displayed on store shelves for a long period of time, its nutritional qualities can change dramatically.

One of the indicators of food safety is its packaging. Research provided in Poland found the safety of packaging was the most critical socio-economic need for consumers (Cholewa-Wójcik et al., 2019). Analyzing attitudes towards organic foods in Sweden, Magnusson et al. (2001) determined that it was difficult for consumers to distinguish between product labels: some consumers did not distinguish between labels for organic vs. conventional

food. In addition, D'Souza (2004) argued that consumers were often unaware of the requirements for producers of organic food labels. Therefore, the basis for trust in organic products consisted of trust in the system (institutional reconciliations, labeling, and certification of food products), personal confidence (close links between consumers and producers, influence of social ties), and the pragmatic degree of confidence in food (personal experience with natural foods) (Truninger, 2006). Stoltz et al. (2011) suggested assessing consumer concerns about the ingredients by asking if they were checking the list of ingredients, avoiding artificial additives or preservatives.

Numerous research (Kushwah et al., 2019; Stolz et al., 2011) has been conducted worldwide regarding stances and motives of consumer attitudes towards organic products. Aspects of consumer attitudes towards organic products could be determined by a *consumer profile*. Providing the profile of a green consumer, D'Souza et al. (2007) described such a consumer as a young, educated, and wealthy citizen. People with better education could understand the importance of healthy nutrition better. Moreover, higher education resulted in consumer willingness to know more about the organic foods and which ones to choose (Idda, Madau, & Pulina, 2008); also, consumer attitudes towards organic foods was positively influenced by a degree of knowledge of the consumers (Yiridoe, Bonti-Ankomah, & Martin, 2005). Therefore, Stolz et al. (2011) suggested introducing extensive and constant education and information-based programs and communication strategies in order to develop positive organic food-related consumer attitudes. Schwepker and Cornwell (1991) defined the green consumer as one with a high income and higher education diploma. Gracia and de Magistris (2007) found that purchase intention was influenced by 'subjective knowledge,' i.e., a higher level of subjective knowledge resulted in a more positive intention when buying organic foods. In addition, a study by Irianto (2015) showed that different genders' consumer intentions also differed in their buying behavior regarding organic product: females were more conscious towards health and environment than males. The impact of consumers' age on their perception of product packaging's safety was detected in the research provided by Cholewa-Wójcik et al. (2019): consumers aged between 26–35 years and 36–45 years considered the safety of product packaging as being important. The respondents represented mainly urban women samples.

The other factors behind organic food purchases can also be found in the scientific literature. One group of such factors is *economic*. Shaharudin et al. (2010) provided research on Malaysian consumers and found that such factors as health consciousness and perceived value were much more important than food safety concerns or the religious factors. Stolz et al. (2011) detected that respondents who were choosing organic products were

willing to pay price-premiums to obtain organic food and ensure food quality. However, Ghali-Zinoubi and Toukabri (2019) emphasized the expensiveness of organic produce compared with conventional ones; therefore, their research in Tunisia demonstrated the impact of price sensitivity on intentions to buy organic products. Also, Hjelm (2011) argued that the differences in pricing of conventional and organic products had to be minimal. The other group of factors is *social* (e.g., ecologically conscious purchases, ecologically conscious lifestyle, fashion, situational factors). The latter factors were researched by Stern, Dietz, and Guagnano (1995), Panov (2013), and Wang et al. (2013). Research by Mei, Ling, and Piew (2012) found peer pressure as a significant factor in encouraging green purchases. Finally, research on *psychological* factors can also be found in the scientific literature. A study by Curvelo, de Moraes Watanabe, and Alfinito (2019) showed that purchases of organic foods can be affected by emotional value, consumer trust, and 'sensory appeal,' or even preference, as shown by Stolz et al. (2011). Moreover, research provided by Hjelm (2011) demonstrated the impact of consumer's political or ethical views on organic consumption: it could even be affected by consumer's concerns about animal welfare or national origin.

Despite the evidence that consumer motives (e.g., health issues, environmental concerns, concerns about food safety and quality, economic, social, or psychological reasons) for buying organic food might be different, a global trend for organic consumption is evident. Therefore, the determination of consumer attitudes and behavior towards organic products in a particular market leads to a better understanding of the consumer and enables the elaboration of educative and persuasive marketing strategies to affect their behavior.

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## RESEARCH METHODS

As the theoretical analysis revealed, factors affecting ecologically conscious consumer attitudes and behavior (in our case – organic product choice by consumer) might be different in different markets. Therefore, an assumption was made that Lithuanian consumer attitudes leading to choice behavior could be driven by a different set of factors. In order to determine the latter factors and their structure, a questionnaire survey was provided.

The questionnaire was composed of 23 manifest variables representing eight latent variables: six possible reasons for organic product choices (health issues; environmental concerns; food safety and quality; economic reasons; social reasons; psychological reasons) and two possible outcomes (intentions to choose organic products; actual organic product purchases). Statements

in the questionnaire were presented in a random order, without connecting them into item-related groups.

All the variables were established after a detailed analysis of the questionnaires used in the analyzed literature. Finally, the questionnaires applied by Kim and Choi (2005), Mei, Ling, and Piew (2012), and Stolz et al. (2011) were chosen and combined for further research. As all the analyzed questionnaires were provided in English, they had to be translated into the mother tongue language of the respondents (i.e., Lithuanian). Therefore, to avoid possible errors of translation, a translation method suggested by Tsang, Royse & Terkawi (2017) was applied: (1) a translation committee was formed out of two academic professionals in the field and one bilingual language specialist; (2) the composed questionnaire was translated into Lithuanian and the three translations were compared and discussed to establish the Lithuanian working version; (3) the approved version of the Lithuanian questionnaire was translated backwards into English in order to check that the statements didn't lose their meaning. After all these procedures, the pre-final version of the questionnaire was set. In the elaborated questionnaire, respondents had to evaluate the provided statements (manifest variables) on a 10-point Likert scale ('1' meant absolute disagreement with a statement; '10' meant absolute agreement with a statement). Before starting the survey, a pilot questionnaire was given to university students for preliminary testing to avoid any possible confusion about the statements and get suggestions for possible improvements of them. After all the necessary procedures, the final version was established. A convenience sampling method was applied and the sample was composed of 300 randomly selected mature respondents living in the four biggest cities of Lithuania (Vilnius (100 respondents), Kaunas (75 respondents), Klaipėda (70 respondents), and Šiauliai (55 respondents)) by asking people face-to-face to complete the questionnaire at the information desk in shopping malls; 269 questionnaires (response rate almost 90 percent) were returned filled without errors (i.e., missing values or dual evaluation of the statement). Respondents were participating in the survey voluntarily, without extra incentives. The sample size was considered as sufficient, as the confidence interval was six, and the confidence level was 95 percent. The research period accounted for two weeks in May of 2018. For the analysis of the results, the IBM SPSS Statistics V.20 software package was chosen.

## RESULTS

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To proceed with the data analysis, a factor analysis was provided. The data was checked and considered as being suitable to perform a factor analysis

on (all the assumptions were met). Based on Sarstedt and Mooi's (2019) recommendation, Kaiser Meyer Olkin's (KMO) measure of sampling adequacy and Bartlett's test of sphericity were calculated: the KMO measure obtained was mediocre (0.657 is higher than 0.5) and the Bartlett criterion was  $p < 0$ . Therefore, the data was found to be reliable and suitable for factor analysis.

In order to obtain clear factors for further analysis, an exploratory factor analysis (as the most common factor analysis used by researchers to determine the structure of the phenomenon) was performed. To determine the factors' variation in the sample, initial eigenvalues were calculated and rotated. The factors having eigenvalues higher than 1 were considered as suitable for further analysis (Young and Pearce (2013) emphasize that Kaiser's criterion, which suggests retaining all factors that have an eigenvalue above 1, is often used to determine the number of factors to retain). The factor eigenvalues and their rotations are provided in Table 1.

**Table 1.** Total variance explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.141	26.702	26.702	3.063	13.318	13.318
2	2.653	11.535	38.237	2.494	10.844	24.162
3	2.013	8.753	46.990	2.443	10.620	34.782
4	1.596	6.937	53.927	2.258	9.816	44.598
5	1.329	5.778	59.705	1.945	8.458	53.056
6	1.197	5.202	64.907	1.939	8.430	61.485
7	1.054	4.581	69.488	1.841	8.002	69.488
8	.958	4.164	73.652			
9	.868	3.774	77.425			
10	.766	3.330	80.755			
11	.729	3.170	83.925			
12	.606	2.635	86.560			
13	.492	2.138	88.698			
14	.448	1.950	90.648			
15	.399	1.734	92.382			
16	.368	1.598	93.980			
17	.352	1.531	95.511			
18	.247	1.075	96.587			
19	.226	.981	97.568			
20	.205	.892	98.460			
21	.137	.594	99.054			
22	.126	.548	99.602			
23	.091	.398	100.000			

The data provided in Table 1 showed that after rotation seven factors explained almost 70 percent of the variance: from 13.318 to 8.002. The

communalities of all variables obtained were higher than 0.2, in the range of 0.533 to 0.831. After component rotation (based on Varimax (according to Gorsuch’s (1983) recommendation) with Kaiser Normalization (see Annex), all 23 components were re-attached to factors. Out of eight theoretically established factors, only two – ‘economic reasons’ and ‘intentions to choose organic product’ – remained unchanged. The primarily established factors ‘health issues’ and ‘food safety and quality’ were merged into a factor ‘search for a healthy quality’; the initially established factor ‘environmental concerns’ had reduced in the number of components; however, factors of ‘social reasons’ and ‘psychological reasons’ were redesigned. The factor ‘psychological reasons’ was changed and renamed ‘active engagement.’ Also, a component was added to the factor ‘actual organic product purchases’. All the structural changes are demonstrated in Table 2.

**Table 2.** Final factors

Statement	Initial factor	Final factor	Name
Pesticide residues in fruit and vegetables are harmful to human health	Health issues	Search for a healthy quality	HQ1
Genetically modified food is a danger to human health			HQ2
Artificial flavors and additives in food are harmful to human health			HQ3
Produce of animals kept outside (at pasture) are healthier than of those kept indoors			HQ4
I only buy food produced without artificial additives			HQ5
I generally do not buy products that include preservatives	Food safety and quality		HQ6
When I buy products, I often check the list of ingredients			HQ7
It is very important to raise environmental awareness among people		Active engagement	ENG2
I strongly agree that more environmental protection work is needed in Lithuania			ENV2
Humans must live in harmony with nature in order to survive	Environmental concerns	Environmental concerns	ENV3
I am extremely worried about the state of the world’s environment and what it will mean for my future			ENV1
It is essential to promote green living in society			SOC3
I learn so much about environmental products from my friends	Social reasons	Social behavior	SOC2
I often share information regarding environmental products with my friends			SOC1

Statement	Initial factor	Final factor	Name
I am willing to pay considerably higher prices for food which has considerably higher quality standards	Economic reasons	Economic reasons	ECO1
I think that organic products have to be expensive			ECO2
I love discussions about nutrition and health	Psychological reasons	Active engagement	ENG1
I prefer to buy organic food			ACT2
I have switched products for ecological reasons.	Actual organic product purchases	Actual organic product purchases	ACT1
When I have a choice between two equal products, I purchase organic			ACT3
I would definitely intend to buy those products that are environmentally friendly			INT2
I would absolutely consider buying those products that are environmentally friendly	Intentions to choose organic products	Intentions to choose organic products	INT1
I would absolutely plan to buy those products that are environmentally friendly			INT3

**Source:** Authors' elaboration based on Kim and Choi (2005), Mei, Ling, and Piew (2012), and Stolz et al. (2011) and research results.

The reestablished factors were used for further analysis describing Lithuanian consumer attitudes towards organic products. Respondent attitudes, in the form of agreement or disagreement with the statements (items) provided in the questionnaire and expressed in a 10-point evaluation scale, were analyzed in a framework of five factors, namely: 'search for a healthy quality' (7 items); 'environmental concerns' (3 items); 'social behavior' (3 items); 'economic reasons' (2 items); and 'active engagement' (2 items). Further research results are presented and analyzed by calculating the factor evaluations.

To analyze the research results, the item evaluation rating was adapted from Bueno (2013). Accordingly, based on their evaluation means (a level of respondent agreement with a statement describing the item) all the items were attached to a particular category of attitude:

- 1) *Favorable attitude.* In this category, evaluation means ranged from 8.01 to 10. Very high respondent evaluation emphasized the favorable consumer attitudes towards the variable (respondents expressed strong agreement with the statement). Items attached to this category require exceptional attention by organic product producers in terms of management, communication, and marketing.
- 2) *Fair Attitude.* In this category, evaluation means ranged from 6.01 to 8. Items evaluated as having fair consumer attitudes were those evaluated

- positively (respondents somehow agreed with the statement); however, the agreement level was not strong. Managing items attached to the latter category, companies have to consider them, but investments into them would not be efficient. However, marketing communication provided for the purpose of changing consumer attitudes might be a solution.
- 3) *Indifferent attitude*. In this category, evaluation means ranged from 4.01 to 6. It was recommended to include the items having an average evaluation mean into this category. Average evaluation meant that respondents did not have an opinion about the item: they neither agreed, nor disagreed with the statement describing it.
  - 4) *Adverse attitude*. In this category, evaluation means ranged from 1 to 4. Respondents disagreed with the statements attached to a latter category. Such results meant that investment into items in this category would be harmful to a company.

The first and largest factor of the research was found to be ‘search for healthy quality’. The latter factor was supposed to reflect consumer attitudes regarding food safety in terms of different additives, possibly harmful for human health and the body, or genetically modified produce. The results of respondents’ evaluations are provided in Table 3.

**Table 3.** Evaluation of the factor ‘Search for healthy quality’

Statement	Evaluation mean	Factor evaluation mean
Pesticide residues in fruit and vegetables are harmful to human health	8.07	
Genetically modified food is a danger to human health	8.02	
Produce of animals kept outside (at pasture) is healthier than of those kept indoors	7.94	
Artificial flavors and additives in food are harmful to human health	7.66	7.69
I only buy food produced without artificial additives	7.60	
I generally do not buy products that include preservatives	7.54	
When I buy products, I often check the list of ingredients	7.01	

Research results provided in Table 3 gave several indications about Lithuanian consumer attitudes towards organic products in relation to health

issues. The factor's evaluation mean was 7.69, indicating that the factor could be categorized as having *fair attitudes* formed in the consumers' mind. Moreover, analyzing the results by items, two items from the category could be classified as causing a favorable shift in attitude: respondents highly agreed that '*pesticide residues in fruit and vegetables were harmful to human health*' and '*genetically modified food was a danger to human health*.' However, when asked about their behavior regarding products containing artificial additives or preservatives, the degree of agreement obtained was lower. The research results indicated that, even though they understood that some product ingredients might be harmful to human health, Lithuanian consumers did not often bother to read labels describing the product ingredients. Based on the research results, it might be presumed that the level of health-consciousness of Lithuanian consumers was fair, and a purposeful education about the issue might be suggested to turn it into favorable.

Another factor describing Lithuanian consumer attitudes towards organic products was 'environmental concerns.' Respondent evaluations regarding the latter factor are provided in Table 4.

**Table 4.** Evaluation of the factor 'Environmental concerns'

Statement	Evaluation mean	Factor evaluation mean
I strongly agree that more environmental protection work is needed in Lithuania	8.90	
Humans must live in harmony with nature in order to survive	9.13	8.85
I am extremely worried about the state of the world's environment and what it will mean for my future	8.52	

The factor 'environmental concerns' attained a high level of agreement and was categorized as having formed a *favorable attitude* in consumers: the factor evaluation mean was 8.85; moreover, every single statement reflecting the factor was also evaluated highly. To be more precise, the lowest evaluation mean was obtained for respondents' worries about the world's environment as a part of their future (evaluation mean was 8.52). Even though, respondents strongly agreed that '*more environmental protection work is needed in Lithuania*'. The latter result supported the conclusion from the analysis of the factor's 'search for healthy quality' evaluations: harder environmental education was necessary for Lithuanians. The highest evaluation mean was obtained for the statement that '*humans must live in harmony with nature in order to survive*' at 9.13. The latter result indicated

that consumers understood the importance of nature and environmental issues. Regarding the research results, it can be concluded that environmental issues were of high importance for Lithuanian consumers. Therefore, in order to form a positive attitude towards and promote the consumption of organic products, the positive (or at least not negative) effects on the environment have to be emphasized.

The third factor describing Lithuanian consumer attitudes towards organic products was ‘social behavior.’ Respondents evaluated three statements in the questionnaire regarding their social behavior. The evaluation results are provided in Table 5.

**Table 5.** Evaluation of the factor ‘Social behavior’

Statement	Evaluation mean	Factor evaluation mean
I often share information regarding environmental products with my friends	8.31	8.14
I learn so much about environmental products from my friends	8.28	
It is essential to promote green living in society	7.81	

The research results on respondent social behavior regarding organic products indicated *favorable attitudes* regarding the factor. As could be seen in Table 5, sharing information about environmental products with friends was a common practice among Lithuanian consumers. As a managerial implication, in this case, it could be suggested that companies communicate more precise and purposeful information about their products, which would be further shared through word-of-mouth. However, the research results indicated that the idea of ‘green living’ was still viewed suspiciously among Lithuanians – the evaluation mean of the statement indicated this idea only *gained a fair attitude* (the exception in the category). Based on the research results, it could be argued that even though they understood the importance of a ‘clean’ environment, Lithuanian consumers were still repressing the changes.

The next factor describing consumer attitudes towards organic products was established to be ‘economic reasons.’ To obtain the respondents’ evaluations of the factor, two statements were provided in the questionnaire. The statement and factor evaluations are provided in Table 6.

**Table 6.** Evaluation of the factor ‘Economic reasons’

Statement	Evaluation mean	Factor evaluation mean
I am willing to pay considerably higher prices for food which has considerably higher quality standards	7.68	7.62
I think that organic products have to be expensive	7.57	

Obviously, the statements regarding economic issues were doubted by the respondents. The factor evaluation mean, as well as every statement’s evaluation, suggested that respondents did not strongly agree with higher prices of organic products. Nevertheless, the results show that consumers understood higher prices of organic produce as being *fair* even if they did not agree to pay more. As an explanation of the results obtained for the factor ‘economic reasons’ the economic situation of Lithuania could be provided. According to Statistics Lithuania (2019), almost 23 percent of the country’s population was living below the at-risk-of-poverty threshold in 2017. Considering that figure, it could be argued that organic products could be afforded only by upper-scale consumers.

The final factor analyzed during the survey was ‘active engagement.’ Respondent evaluations of the statements describing attitudes towards active engagement in environmental issues are provided in Table 7.

**Table 7.** Evaluation of the factor ‘Active engagement’

Statement	Evaluation mean	Factor evaluation mean
It is very important to raise environmental awareness among people	7.97	8.07
I love discussions about nutrition and health	8.17	

The evaluation means provided in Table 7 indicated *favorable attitudes* towards active engagement. Consumers ‘*loved discussions about nutrition and health*’ – the statement’s evaluation mean is 8.17. The latter result confirmed previously obtained results regarding social behavior of consumers (sharing information regarding environmental products with friends and learning about environmental products from them). Despite the favorable attitudes towards the factor, the respondents did not find that ‘*raising environmental awareness among people*’ was very important. Once again,

the latter result supported the idea of the necessity of green education for Lithuanian consumers.

In concluding the analysis of the respondent evaluations, it could be argued that Lithuanian consumer attitudes towards organic products vary from fair to favorable. It could be stated that consumers expressed a high level of ‘environmental concerns’ (evaluation mean 8.85); also a high level of ‘active engagement’ into environmental issues (evaluation mean 8.07) and ‘social behavior’ regarding green consumption (evaluation mean 8.13). However, the evaluation results for ‘search for healthy quality’ (evaluation mean 7.69) and the effect of ‘economic reasons’ (evaluation mean 7.62) on organic consumption indicated room for improvement.

After analyzing consumer attitudes towards the factors possibly causing the consumption of organic products, a further step was to perform an analysis of their behavior. In the framework of this research, consumer behavior was expressed by two factors: consumer intentions to choose organic products and actual organic product purchases. The same rating classification adapted from Bueno (2013) was applied for the analysis.

During the survey, in order to evaluate consumers’ intentions to choose organic products, three statements were provided. Consumers indicated their agreement or disagreement with the statements on a 10-point evaluation scale. The results of the evaluation are provided in Table 8.

**Table 8.** Evaluation of the factor ‘Intentions to choose organic products’

Statement	Evaluation mean	Factor evaluation mean
I would definitely intend to buy those products that are environmentally friendly	7.28	
I would absolutely consider buying those products that are environmentally friendly	8.05	7.56
I would absolutely plan to buy those products that are environmentally friendly	7.34	

Controversial results were obtained regarding the factor ‘*Intentions to choose organic products.*’ Consumers expressed a high agreement (evaluation mean 8.05) that they ‘*would consider buying environmentally-friendly products;*’ however, their plans and intentions to buy environmentally-friendly products resulted only in *fair* attitudes (evaluation means were 7.34 and 7.28, respectively). Moreover, the total evaluation mean for the factor obtained was 7.56, meaning only fair consideration. The research results indicated that despite their high environmental concerns (evaluation mean 8.85), intentions

to choose organic products might be driven by other factors like economic reasons. Therefore, transforming consumer considerations into plans and intentions might be viewed as a field requiring support and management.

However, 'intentions to choose' was not the only factor describing consumer behavior. Respondents were also asked to provide their evaluations for the statements regarding their 'actual organic product purchases.' Also, three statements were provided in the questionnaire to assess consumer behavior (see Table 9).

**Table 9.** Evaluation of the factor 'Actual organic product purchases'

Statement	Evaluation mean	Factor evaluation mean
I prefer to buy organic food	7.71	
I have switched products for ecological reasons	7.36	7.61
When I have a choice between two equal products, I purchase organic	7.76	

The results, indicating actual consumer behavior regarding purchases of organic as well as in the case of intentions to choose those products, indicated room for improvement. The whole factor was evaluated as '*fairly agreeable*' – the evaluation mean was 7.61. The results of evaluation did not indicate a high preference for organic food, neither a high priority (evaluation means were 7.71 and 7.76, respectively). The reported switching behavior for ecological reasons was evaluated even lower (an evaluation mean of 7.36), meaning that customers were conservative and hardly willing to change their habits.

The analysis of evaluation means provided descriptive information about Lithuanian consumer attitudes and behavior regarding organic products. Moreover, the areas and ways for attitude management and improvement were detected.

## DISCUSSION

The research was conducted in Lithuania and the respondents were also Lithuanians. Therefore, the results obtained were for this particular market. However, similarities in other countries could also be envisioned.

*Environmental concerns.* After the research with Taiwanese consumers, Chen (2009) found environmental concerns were an important motive to choose organic food in this market. Consumer attitudes regarding green products and

the environment were affected by their values; moreover, perceived trust in green products and purchase intentions regarding them were affected by customer perceived value (Chen, 2010; Chen & Chang, 2012). Also, Fraj and Martinez (2006 a, b) analyzed the influence of life-style and values in a sample of Spanish consumers by investigating their ecological behavior. The findings showed a positive attitude of Spanish consumers towards the environment. Lee (2008) provided research on green consumer behavior in Hong Kong. In this case, perceived environmental responsibility and environmental concern were established as factors predicting green purchase behavior in line with self-image and social influences. According to Kim and Choi (2005), as consumers become more concerned about environmental issues, marketing strategies based on “green” or “environmentally-friendly” products emerge.

*Search for healthy quality.* The factor was evaluated as being important to Lithuanian consumers. Research results showed that even though they understand the possible negative effects of some product ingredients on their health, Lithuanian consumers’ choices are only fairly driven by health or quality concerns. After the research with Taiwanese consumers, Chen (2009) found that in Taiwan, health consciousness was one of the reasons to choose organic food. According to Stolz et al. (2011), less price sensitive consumers expressed their intentions to pay more for the quality of food and their health concerns were reflected by their choices. Also, Irianto (2015) found human health consciousness to be one of the major factors affecting consumer intentions to choose organic products.

*Social behavior and active engagement.* While analyzing other countries’ examples, various results can be found. The results obtained by Lee (2008) established social influences as the most important factor having an impact on green purchase behavior in Hong Kong. Kalafatis et al. (1999) reported that despite ‘social norms’ and ‘societal acceptance’ stimulating British consumers’ intention to purchase green products, the first factor was not important in the case of Greek consumers. On the other hand, the research results from India indicate that social norms have an impact on consumers’ ecological concerns. The information about green consumption was shared between family and friends, motivated by the novelty of the issue. Such informational and social support helps consumers find conformance in themselves. Once again, the importance of social norms in green purchase behavior was supported (Kalafatis et al., 1999; Chan, 2000; Chen & Chang, 2012; Lee, 2008, Fraj & Martinez (2006 a, b).

The extent research on social influences can be found in the scientific literature; however, the research about the impact of social influences on consumer attitudes and behavior regarding organic product purchases is still limited. The existing scientific findings demonstrate that consumers

seek conformance in the form of advice from friends and within their social environment, mainly for innovations and for products with doubtful performance. Such confirmations help in reducing the related risks, also simplifying the purchase of new products. Discussing a green product's attributes with friends and acquaintances may reduce the risk of a wrong decision. However, Lithuanian consumers' controversial evaluation of statements reflecting 'social behavior' might be explained by the consumers' reluctance to consider the opinions of others: consumers discuss the issue with friends, but restrain transferring their opinion to the wider society. According to Kim and Choi (2005) consumers intend to share their interests with the members of their social groups, but are not concerned about the welfare of society at large. Moreover, it can be assumed that consumers are "getting bored by discussions about nutrition and health" (Stolz et al., 2011).

*Economic reasons.* Considering the factor's 'economic reasons' evaluations, it can be argued that a higher price might indicate a better quality product; however, the actual consumer choice behavior is suppressed by a higher price. Stolz et al. (2011) emphasize that, based on price sensitivity, organic product consumers might be divided into two segments: 1) the less price-sensitive prefer organic products; 2) the more price-sensitive prefer conventional ones. On the other hand, Haanpaa (2007) suggests that for Finnish consumers, economic concerns did not influence their green purchase attitudes.

*Intentions to choose organic products* were evaluated as having fair attitudes by Lithuanian consumers. Mei, Ling, and Piew (2012) emphasize that one of the most significant factors affecting green purchase intentions is peer pressure (as a part of social behavior). As discussions with friends, in terms of information sharing, were also evaluated positively by Lithuanian consumers, a conclusion might be made that companies have to employ this factor to make a positive impact on consumer intentions. Moreover, Stolz et al. (2011) emphasize that consumer preferences (or intentions) are strongly guided by consumer attitudes. Therefore, in order to affect the intentions of Lithuanian consumers to choose organic products, the managing, and marketing of favorably evaluated factors might be suggested.

*Actual organic product purchases.* The research provided by Kim and Choi (2005) emphasizes the difference between conventional and organic (or green) product purchases: "ecological consumption choices are future and group oriented." According to the authors, green purchases are directed by environmental concerns; therefore, consumers with a strong environmental concern might favor products that reflect that concern in terms of their consumption.

Therefore, in Lithuania, three favorably evaluated factors regarding organic product choice can be named: environmental concerns, social

behavior, and active engagement. Proper management of these factors might lead to an increase in organic product consumption. The research findings and implications are important for organic producers and scientists representing the field. Companies differentiating their products as 'organic' have to understand the importance of the role of the latter factors in influencing intentions and behavior in terms of organic product purchases. This presents a challenge for business organizations. The elaborated marketing and communication campaigns provided to change consumer attitudes and behavior towards organic products and the environment are becoming necessary. It is important to merge 'environmental concerns' and 'social behavior,' while also encouraging 'active engagement' by consumers in effecting the organic product choices in Lithuania.

## CONCLUSION

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In the context of Western European countries, Lithuania has become an important producer of organic products; however, it has a relatively small internal market for organic produce.

Despite the worldwide trend for organic product consumption, differences in the factors affecting it are obvious among countries or regions. The review of the scientific literature and the research of scientists representing different countries has enabled a bundle of factors to be established that possibly affect organic product choices. Scientific analysis showed that the most broadly analyzed antecedents of organic product choices (representing consumer attitudes towards the issue) were health issues; environmental concerns; food safety and quality; economic reasons; social reasons; psychological reasons; and factors representing the choice behavior were intentions to choose organic products; and actual organic product purchases.

After performing a factor analysis based on the results of the questionnaire survey, the theoretically established factors were regrouped to better represent a Lithuanian context. Consequently, two factors remained unchanged ('economic reasons' and 'intentions to choose organic products'); two factors were changed in terms of structural parts ('environmental concerns' was reduced by two variables, and 'actual organic product purchases' was complemented by one variable); the factor 'social reasons' was complemented and renamed into 'social behavior'; the factor 'psychological reasons' was eliminated, and the factor 'active engagement' was added. Moreover, the factors 'health issues' and 'food safety and quality' were merged into the factor 'search for a healthy quality.' Newly established factors can be used for further research in a Lithuanian context

by scientists and practitioners in order to analyze the changes in consumer attitudes and behavior, purposefully guide consumer opinion and develop ecological consciousness. Moreover, the established factors can be tested in the framework of other countries.

Considering the Lithuanian organic product market, analysis of the research results indicated that Lithuanian consumers expressed a high level of environmental consciousness: respondents' evaluations showed very high environmental concerns. Moreover, Lithuanians appeared to be highly social in terms of sharing information regarding ecological issues with their friends and demonstrated active engagement in sharing environmental issues-related information in their social environments. However, health and quality concerns were not evaluated as being highly important. Therefore, consumer awareness regarding the impact of ecologically 'unclean' products, artificial additives, preservatives or pesticides used during the production process, or genetically modified organisms and their impact on human health has to be raised. It can be concluded that environmental education appeared to be insufficient in Lithuania; therefore, a suggestion for its improvement and fortification was proposed to be concerned by the government or by companies providing organic produce. Another important issue regarding organic product purchases was the economic reasons. Consumers did not express a high agreement that organic products have to be more expensive, neither that they intended to pay a higher price. The relation between low concerns about their health can be envisioned. On the other hand, as the economic situation in Lithuania is poor, an assumption can be made that people cannot afford higher priced products. Therefore, up-to-date organic products can only be profitably offered to upper-scale customers.

Finally, the research results did not indicate Lithuanian consumer intentions to choose organic products as high; the actual organic product purchases were also assessed as being fair. For further research in the area it can be suggested to segment the market. Market segmentation would provide a wider view of the issue; moreover, determination of sensitive segments might show the ways for their attraction.

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### Abstrakt

**Cel:** Artykuł analizuje postawy konsumentów i związane z nimi zachowania wobec produktów ekologicznych oraz określa czynniki wpływające na stosunek konsumentów do produktów ekologicznych i wybory konsumentów litewskich. **Metodyka:** Dotychczasowe prace naukowe są analizowane i uogólniane w celu naukowego uzasadnienia badań. Przeprowadzono badanie ankietowe w celu zatwierdzenia teoretycznie ustalonych czynników na litewskim rynku produktów ekologicznych. Kwestionariusz składa się z 23 stwierdzeń reprezentujących osiem ukrytych zmiennych: sześć możliwych powodów wyboru produktu ekologicznego (kwestie zdrowotne; troska o środowisko; bezpieczeństwo i jakość żywności; przyczyny ekonomiczne; przyczyny społeczne; przyczyny psychologiczne) oraz dwa możliwe wyniki (intencje wyboru produktów ekologicznych; rzeczywiste zakupy produktów ekologicznych). Wyniki badania oparto na odpowiedziach 269 respondentów reprezentujących populację czterech największych miast Litwy. **Wyniki:** Wyniki wskazują na strukturalne różnice między teorią a jej zastosowaniem na rynku litewskim; dlatego czynniki są przywracane. Wyniki badań wskazują na wysoki poziom świadomości ekologicznej litewskich konsumentów; również chęć dzielenia się informacjami dotyczącymi zagadnień środowiskowych z przyjaciółmi; oraz aktywne zaangażowanie w dzielenie się informacjami o kwestiach związanych ze środowiskiem. Jednak świadomość konsumentów dotycząca związku między produktami ekologicznymi a problemami zdrowotnymi i jakością jest niższa, co wskazuje na konieczność zarządzania. Ponadto konsumenci nie są zgodni co do tego, że produkty ekologiczne muszą być droższe; nie zamierzają płacić za nie wyższej ceny. Wyniki badań pokazują, że litewscy konsumenci nie wybierają często produktów ekologicznych, a także nie wykazują zachowań zgodnych (wynikających z zakupów produktów ekologicznych). **Implikacje dla teorii i praktyki:** Wyniki badań umożliwiają sformułowanie jasnych ram dotyczących postaw i zachowań litewskich konsumentów wobec produktów ekologicznych. Ustalone czynniki wpływające na postawy i zachowania konsumentów można dalej badać i modelować zgodnie z różnymi sytuacjami rynkowymi. **Oryginalność i wartość:** W oparciu o wyniki firmy mogą opracować skuteczne strategie marketingowe promujące postawy i zachowania konsumentów w określony sposób.

**Słowa kluczowe:** postawy konsumenckie, zachowania konsumenckie, wybór konsumenta, konsumpcja ekologiczna, konsumpcja proekologiczna, konsumpcja przyjazna środowisku, produkty ekologiczne

### Biographical notes

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### Annex

#### Rotated component matrix

Name	Component						
	1	2	3	4	5	6	7
HQ1	.646	.218	.084	.212	.105	.052	.049
SOC1	.039	-.097	.021	.813	.041	.125	.067
ENG1	.100	.151	.036	.062	.860	-.020	.072
ECO1	.072	-.052	.032	.154	.186	.173	.757
INT1	.001	.148	.790	.247	.222	.003	.002
ENV1	.266	.545	.182	.395	.271	-.019	-.178
SOC2	.101	.460	.099	.583	-.093	.111	.172
HQ2	.598	.019	.109	.445	.072	-.136	.165
SOC3	.113	-.034	-.324	.702	.049	.193	.300
ENG2	.229	-.091	-.029	.013	.678	-.042	.334
ECO2	.106	.300	.073	.212	.078	-.086	.783
HQ3	.658	.304	.267	-.071	.079	.207	-.049
HQ4	.573	.555	.221	.133	-.193	.076	-.208
ACT1	.007	.266	.195	-.030	-.224	.691	.313
HQ5	.511	.364	.248	-.048	.226	.138	.257
ENV2	-.007	.590	.202	-.007	.208	.379	.100
ACT2	.211	.249	-.251	.306	-.111	.638	-.187
ACT3	.168	-.033	.169	.195	.184	.776	.025
ENV3	.188	.774	.115	-.115	.021	.073	.202
INT2	.342	.181	.770	-.191	.001	.209	.091
INT3	.263	.133	.817	-.136	-.146	.059	.053
HQ6	.504	.307	.121	-.062	.496	.218	-.128
HQ7	.742	-.151	.034	.025	.211	.121	.168

### **Conflicts of interest**

The authors declare no conflict of interest.

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# Table of Contents

<b>Entrepreneurial cognition or judgment: Management and economics approaches to the entrepreneur's choices</b> Marta Gancarczyk, Anna Ujwary-Gil	7
<b>Entrepreneurial opportunity decisions under uncertainty: Recognizing the complementing role of personality traits and cognitive skills</b> Emmanuel Kwasi Mensah, Lawrence Adu Asamoah, Vahid Jafari-Sadeghi	25
<b>Absorptive capacity in startups: A systematic literature review</b> Ximena Alejandra Flechas Chaparro, Ricardo Kozesinski, Alceu Salles Camargo Júnior	57
<b>Social entrepreneurship as a collaborative practice: Literature review and research agenda</b> Sunna Kovanen	97
<b>Mediating effect of relational capabilities in the relationship between entrepreneurial orientation and SMEs performance</b> Nuryakin	129
<b>The moderating role of self-efficacy on the cognitive process of entrepreneurship: An empirical study in Vietnam</b> Duong Cong Doanh	147
<b>How journalism experience translates to social entrepreneurship: An intention formation study of the Art Yard at Dadaocheng in Taiwan</b> Huei-Ching Liu, Chaoyun Liang	175
<b>The developing speciality coffee businesses of Bangkok, Thailand and Penang, Malaysia. A story of entrepreneurial passion and creativity?</b> Mark Azavedo, Art Gogatz	203
<b>Introducing a functional framework for integrating the empirical evidence about higher education institutions' functions and capabilities: A literature review</b> Dorys Y. Rodríguez-Castro, Juan Aparicio	231
<b>Consumer attitudes and behavior towards organic products: Evidence from the Lithuanian market</b> Lina Pilelienė, Vilma Tamulienė	269

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