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Department of International Trade
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International Entrepreneurship Review

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The evolution of the Uppsala model: Towards non-linearity of internationalization of firms[1]

Krzysztof Wach

ABSTRACT

Objective: The objective of the article is to synthesize the process of transforming the Uppsala model of internationalization of the firm from the original one of 1977 to the most up-to-date model of globalization of 2017.

Research Design & Methods: This article is based on a literature review – primary sources presenting the concepts of Johanson and Vahlne as the authors of the Uppsala models.

Findings: This article discusses a total of seven models proposed by Johansson and Vahlne (in the years 1977, 2009, 2010, 2011, 2013, 2014, 2017) with their various smooth extensions (1990, 2003, 2006, 2012) showing the way they were transformed and evolved.

Implications & Recommendations: Although stages models are often criticized in the literature, they are still widely used in empirical research. Their successive modifications may attest to their universal character and timelessness.

Contribution & Value Added: The article compiles all the major models from Johanson and Vahlne, and sometimes also of their co-authors (Ivarsson and Schweizer), in one place, showing their common base and differentiating issues that differ in these models.

Article type:	research article
Keywords:	Uppsala model; U-model; stages model; process theory of internationalization; incremental internationalization; network approach; international entrepreneurship
JEL codes:	F23, M16

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INTRODUCTION

The roots of *stages models* date back to the 1970s when, almost simultaneously, Swedish and Finnish researchers used the behavioural theory of the firm to explain the internalization behaviour. This group of theories is also referred to as *Nordic models* (Ruzzier, Hisrich & Antoncic, 2006, p. 482), or *learning models* (Ibidem), but also *process models* (Mejri & Umemoto, 2010, p. 157), incremental models (Coviello & McAuley, 1996; Rundh, 2001, p. 319), *sequential models* (Wickramasekera & Oczkowski, 2006, p. 52), *establishment chain models* (Crick, Chaudhry, & Batstone, 2001, p. 79), *gradual theories* (Morgan & Katsikeas, 1997, p. 72), evolutionary theories (Ibidem), or *process theories of internationalization* (PTI) (Schwens, Steinmetz, & Kabst, 2010, p. 114) or just the *Swedish school*. They are based on the phase (process) convention of corporate growth and development. Their common feature is the sequential passage in the internationalization process through individual stages or phases, which together create a specific established order, and each subsequent stage is associated with greater involvement of the firm in international activities. Ruzzier, Hirsrich and Antoncic (2006, p. 482) distinguished two basic stages models, which are most often referred to in the literature, namely the Uppsala model (U-model) and the innovation-related model (I-model) (Wach, 2016a).

[1] This is an extended version of the previous article published in the Polish language: (Wach, 2017).

The origins of the stages models of firm-level internationalization date back to the mid-1970s and are associated with Swedish researchers working in Uppsala; hence the models, they proposed, are referred to as the Uppsala models or U-models. "Internationalization – according to the process view – is a process of increasing commitments to foreign operations" (Johanson & Vahlne, 2003, p. 90).

The original Uppsala model was subsequently developed by numerous authors; hence there are many hybrid models in the literature, especially in the extant literature from the 1980s and 1990s. Recently, Johanson and Vahlne, as the original authors of this model, have proposed several modifications of their theoretical concept, and there are at least six such revised models of their authorship in the literature (not to mention a couple more minor extensions of the U-model). Subsequent models were a response to emerging criticism and thus took into account newer theoretical approaches and frameworks developed later in the literature.

This article aims to synthetically discuss the transformation process of the Uppsala model of the firm-level internalization from the original 1977 model to the most recent the Uppsala model of 2017. The article consists of four parts. The first part of this article describes the research methodology, including selecting reference sources. The second, main part, of this article undertakes a conceptual review of the literature. The third part elaborates on the critics of stages models. The fourth, final part of this study, summarises the whole article.

MATERIAL AND METHODS

This article is based on a literature review – primary sources presenting the concepts of Jan Johanson and Jan-Erik Vahlne as the authors of the Uppsala models. This article discusses a total of seven models proposed by Johansson and Vahlne (in the years 1977, 2009, 2010, 2011, 2013, 2014, 2017), sometimes also with their co-authors (Ivarsson and Schweizer), with their various smooth extensions (1990, 2003, 2006, 2012) showing the way they were transformed and evolved. The article elaborates on the available extant literature and desk research. This article uses a qualitative design of research based on a cause-effect analysis, along with predictive synthesis, modelling, induction, and description of the synthetic and the critic literature review. This study is descriptive, making use of a comparative analysis technique.

LITERATURE REVIEW

The Primary Uppsala Model of 1977

Johanson and Vahlne (1974; 1977) are the authors of the Uppsala model, although Wiedersheim-Paul also contributed to the development of this model (Johanson & Wiedersheim-Paul, 1975). The internationalization of firms, in particular small and medium-sized enterprises is treated as an incremental process of international engagement as a result of the learning process, while incrementality is understood as a consequence of a series of decisions. This model assumes a stepwise expansion in four stages (Johanson & Wiedersheim-Paul, 1975, p. 307):

1. No regular export activity;
2. Exports via independent representatives (agents);
3. Foreign sales subsidiaries;
4. Foreign production/manufacturing subsidiaries.

These four steps are related to the greater involvement of resources leading to different market experience and market knowledge. The first stage is manifested by the fact that the firm does not commit its resources to export activities, which means that it is not possible to obtain the required knowledge about foreign markets. The second stage, on the contrary, allows the firm to obtain regular information about foreign sales markets, which of course, is related to market involvement. The third stage is related to a controlled information channel that allows the firm to obtain information from the market. This stage also allows gaining direct experience about the resource factors determining the further internationalization process. Finally, the fourth stage means even more resource involvement. Johanson and

Vahlne refer to this sequence or the order of the development operations of the firms in individual countries as an establishment chain.

Johanson and Vahlne, expanding the model, made it more detailed by dividing the factors into state and change aspects (static/constant and dynamic variables). The essence of the model (Figure 1) is therefore the state of internationalization, mathematically defined as ΔI = f (I ...). Input constant variables (market knowledge and market commitment) influence dynamic variables (commitment decisions and current activity). The level of internationalization depends on the accompanying risk (Johanson & Vahlne, 1977, p. 30), written mathematically as:

$$R_i = C_i + U_i \tag{1}$$

where:

R_i - existing market risk situation on i market;

C_i - existing market commitment;

U_i - existing market uncertainty.

As a result of the dynamic step-by-step process, there is an increase in risk (ΔR_i). The scale of further internationalization will therefore be limited by the market commitment ($\Delta R_i = U_i \cdot \Delta C_i > 0$), while decisions themselves will be limited by uncertainty according to the formula $\Delta R_i = \Delta U_1 \cdot (C_i + \Delta C_i) + \Delta C_i \cdot U_1 < 0$.

Forsgren (2015) underlines that that lack of knowledge about foreign markets is a significant obstacle to international operations. Still, such knowledge can be acquired by a firm, which is a centre point and assumption of the Uppsala model.

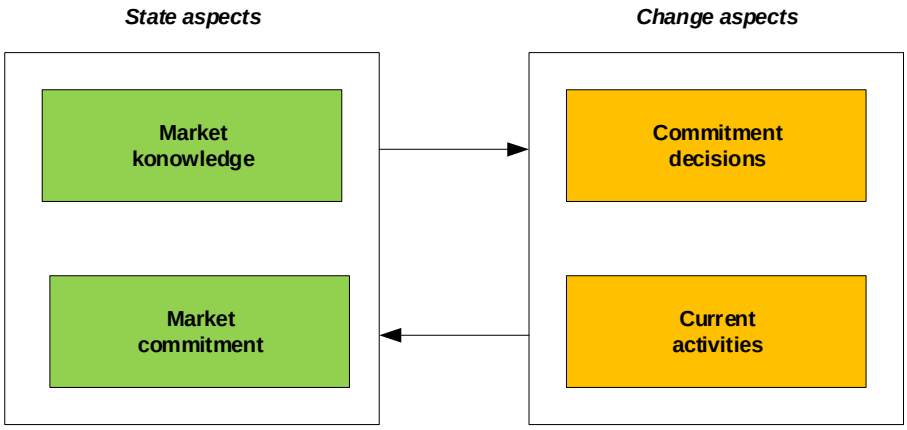

Figure 1. Original Uppsala model of 1977
Source: (Johanson & Vahlne, 1977, p. 26; 1990, p. 12).

The Network Uppsala Model of 2009

Meanwhile, Johanson and Vahlne (1990; 2003, 2006) proposed three extensions of their original model. Johanson and Vahlne (2003) underscored that institutional, economics and cultural barriers (literally *fences* as they called them), which are usually discussed in terms of psychic distance and cultural distance, are based on the country-market specifics. Therefore, a business network model of internationalization might be helpful especially while explaining international new ventures. Instead of country markets, it is necessary to focus on relationship building with customers or supplier firms in the widely understood international business environment (Wach, 2016b; Głodowska, Pera & Wach, 2016).

Johanson and Vahlne (2009) proposed a modified version of their stages model from 1977 (a major revision), adapting it to the network approach (Figure 2). This model assumes that the firm is embedded in an active network of interdependent actors. As in the original model, it contains four interrelated variables, two constants aspects related to knowledge storage and two dynamic variables related to knowledge flow. These variables condition a dynamic cumulative learning process, but also the firm's commitment to trust (Johanson & Vahlne, 2009, p. 1423). An increasing level of knowledge has a positive

or negative impact on trust building. In relation to the original model, an important change is the introduction of the entrepreneurial theory primer manifested in recognition of opportunities to the knowledge. These opportunities constitute knowledge, constituting its subset, alongside needs, competences, strategies and network relations (Johanson & Vahlne, 2009, p. 1424). As the internationalization process occurs within a network, the variable 'market commitment' from the original model was replaced by the variable 'network position', as network relations condition the internationalization process. As one of the two dynamic variables, learning by building trust expresses the outcome of current activities. Therefore, it contributes to an increase in knowledge. The last variable of the model was only supplemented in relation to the original concept with the attribute 'relational' to emphasize the key role of networks in the decision-making process (relationship commitment decisions).

The Network Uppsala Model of 2009 was announced the article of the decade and received the JIBS Decade Award (Verbeke, 2020).

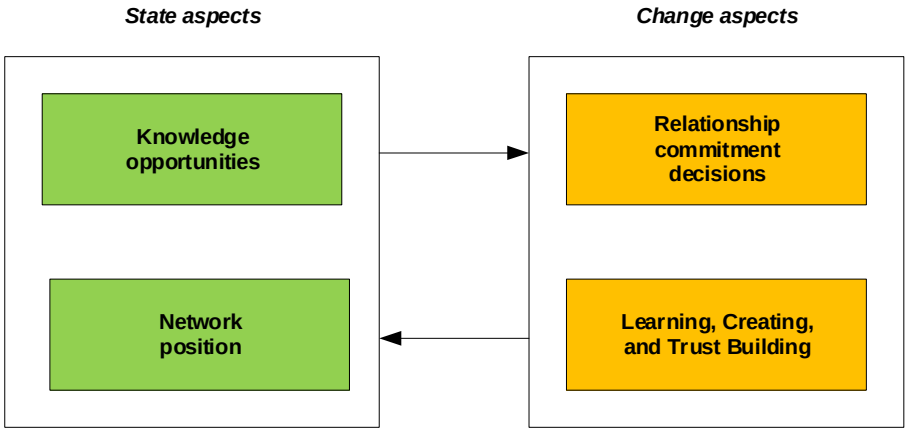

Figure 2. Network Uppsala Model of 2009
Source: (Johanson & Vahlne, 2009, p. 1424).

The Entrepreneurial Uppsala Model of 2010

International entrepreneurship (IE), initiated and developed in the 1990s, has been blooming in the international business literature since the 2000s (Wach, 2015a, 2015b, 2015c; Głodowska, 2019; Głodowska, Maciejewski & Wach, 2019a, 2019b; Maciejewski & Wach, 2019).

One of the proofs of the growing popularity of international entrepreneurship models is the third, in chronological terms, modification of the Uppsala model (1977, 2009, 2010), which is an attempt to operationalize the model of 2009 (Figure 3). The modification consists of implementing entrepreneurship theory, at a relatively detailed level, which places this model undoubtedly in the international entrepreneurship approach in the international business research.

The modified model is worth focusing only on the latest changes. The overall concept is based on the 2009 model. These elements are not discussed again as they have already been discussed above. The dynamic variables have been extended by a new one – the use of contingencies[2] – which are not necessarily related to each other as they result from the nonlinear dynamics of the environment. Schweizer, Vahlne and Johanson (2010, p. 365), as the authors of this revision, underscore that the model's dynamics is two-sided, the static and dynamic variables interact. Strategic decisions lead the firm into unknown markets, which are characterized by Knightian uncertainty. High uncertainty forces firms to engage incrementally in new markets, with beneficial engagement as uncertainty levels are expected to decrease. Entrepreneurial sensitivity causes firms to observe their environment, as radical changes in the environment can increase the level of uncertainty. Experiential learning occurs between

[2] The theory of entrepreneurship very often refers to contingencies, which is a reference to the philosophical theory of contingentism. These are the entrepreneur, the market opportunity, the organisation of the enterprise and the resources. Between these variables there are interactions, but not based on necessity, but on the human subjectivity that characterises the entrepreneur. These interactions are the essence of the entrepreneurial process (Wickham, 2006, p. 223).

networked firms, and as trust and relationships increase, they engage together in the internationalization process. However, this can result in a two-part relationship in which partner firms lose their independence due to mutual adjustment, leading to mutual control. Two-partner relationships intensify cooperation in the network, as the establishment of cooperation by one partner entails the other partner.

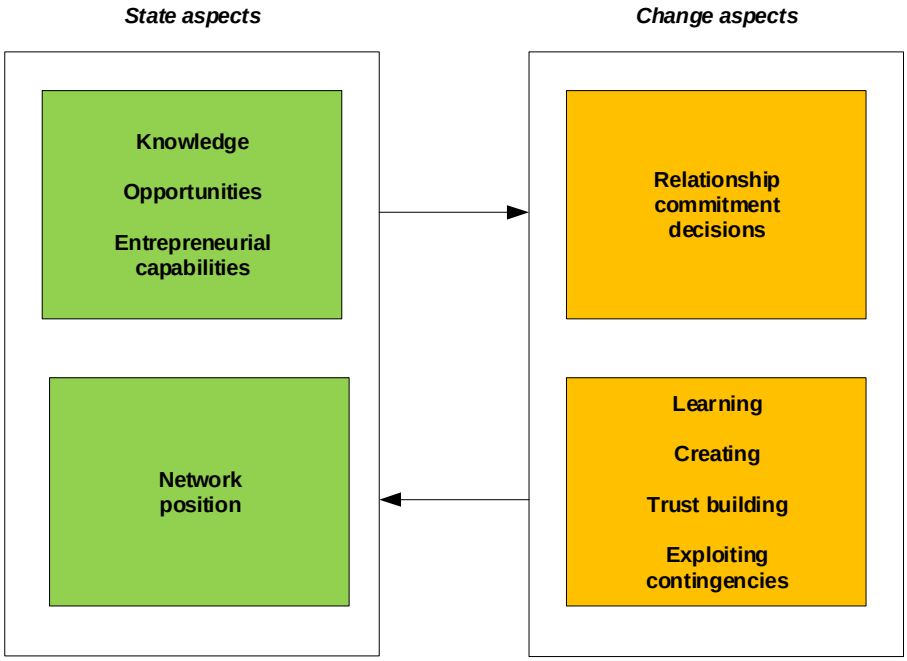

Figure 3. Entrepreneurial Uppsala Model of 2010
Source: (Schweizer, Vahlne & Johanson, 2010, p. 365).

The static variables have also been modified. Both tangible and intangible resources are included in the analysis, and knowledge is understood here as the entrepreneurial knowledge and organizational knowledge. Knowledge and the ability to discover market opportunities is the engine that drives the entrepreneurial process, which is the key element of the model from the entrepreneurial perspective. Schweizer, Vahlne and Johanson (2010, p. 346) emphasize the crucial role of identifying market opportunities as the quintessence of entrepreneurship. In the model, this factor is treated as recognition of the value of new information and ideas, which often occurs accidentally (accidental discovery) in the sense of Kirzner. The mechanism of the other two variables is analogous to the previous model, although they are explained in the stream of entrepreneurship theory.

The decision-making process underlying relational decision-making commitment is expressed in the dynamic variable 'relationship commitment decision' (Schweizer, Vahlne, & Johanson, 2010, p. 347). This is considered through the concept of effectuation as opposed to causation (Pawęta, 2016). The concept of effectuation process was introduced into entrepreneurship theory by Sarasvathy (2001)[3] and further developed together with Drew (Drew & Sarvasvathy, 2002). The entrepreneur is identified in this concept with the effectuator. The perspective of the effectuation process, originally developed to explain the mechanism of new venture formation, has been used by the authors of the Uppsala entrepreneurial model to analyze the decision-making process regarding the internationalization of a networked firm (Schweizer, Vahlne, & Johanson, 2010, p. 347). The modified model also uses

[3] According to Sarasvathy (2001, p. 245) effectuation processes use a set of given means and focus on the choice between possible effects that can be created from that set of means. In other words, it is therefore a set of entrepreneurial decision rules that can be applied in situations of uncertainty. In contrast, causation processes use a given partisan effect and focus on choosing between the means of creating that effect, which, in simple terms, describes decision-making using heuristic methods rooted in forecasting.

the entrepreneurial concept of dynamic capabilities as a strategic and organizational process that creates value in dynamic markets by appropriately transforming resources into new value-creating strategies (Schweizer, Vahlne, & Johanson, 2010, p. 349).

Vahlne, Schweizer and Johanson (2012) developed also the extension of this model focusing on the network position and eliminating entrepreneurial contingencies.

The First Globalization Uppsala Model of 2011: Network Coordination

Due to the growing popularity of globalization processes in the economy, and especially the global dimension of business in the 1980s and 1990s, Vahlne, Ivarsson and Johanson (2011) decided to develop the Uppsala variant of the firm globalization process, in which the globalization is understood as an attempt to optimize business operations in terms of configuration and coordination of systems, where configuration refers to the design of the value chain and coordination relates to the interdependencies between the different units of a given firm operating in the global market. The process of globalization of the firm is understood here as an intricate path to a global firm, while the process of internationalization is understood here as the transition from a national to an international firm, and then to a multinational enterprise (Vahlne, Ivarsson & Johanson, 2011, p. 2).

This revised Uppsala model is built on the assumptions of previous models (1977, 2009, 2010 and their extensions), especially the network approach and the entrepreneurial process of identifying and exploiting market opportunities. Three variables (two static and one dynamic ones) are unchanged and carried over from the previous version of the model. In addition, a new dynamic variable is introduced – reconfiguration and coordination, which is a typical feature of the firm globalization process (Vahlne, Schweizer, & Johanson, 2012). The degree of globalization of the firm increases due to the implementation of reconfiguration decisions and actions and the change of coordination within the firm and its subordinate units (Figure 4).

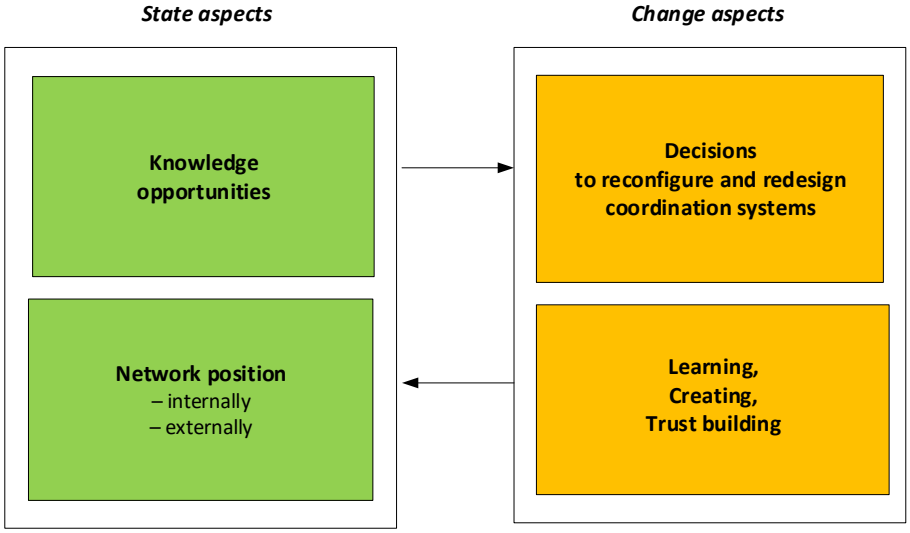

Figure 4. First Globalisation Uppsala Model of 2011
Source: (Vahlne, Ivarsson, & Johanson, 2011, p. 3).

The First Multinational Uppsala Model of 2013

In response to the criticism that the Uppsala model does not incorporate the assumptions of Dunning's OLI theory, which is the dominant paradigm in the business theory focusing on explaining the internalization processes of transnational corporations, Johanson and Vahlne (2013) proposed a revised Uppsala model to explain the evolution of multinational enterprises (multinational business enterprise, MBE). The model is dynamic in nature as it is based on the knowledge that is either acquired as a result of the learning process or is created. In this model, the two dynamic variables (Figure 5) basically remain as in the previous model. In addition, the static variables are modified. The model is based on the concept of dynamic capabilities, of which three key dynamic capabilities for the internationalization

process have been identified and selected. The first is identifying entrepreneurial opportunities and the mobilization of appropriate resources both in own firm and in other firms involved in these opportunities (Johanson & Vahlne, 2013, p. 202). The second key capability is the development of different markets and locations in different considerations, which is called internationalization capability. The second variable, network position, is slightly modified. The position can also be described in terms of the degree of multinationality or globalness. In effect, the network position depends on the strength of the relationships between network partners.

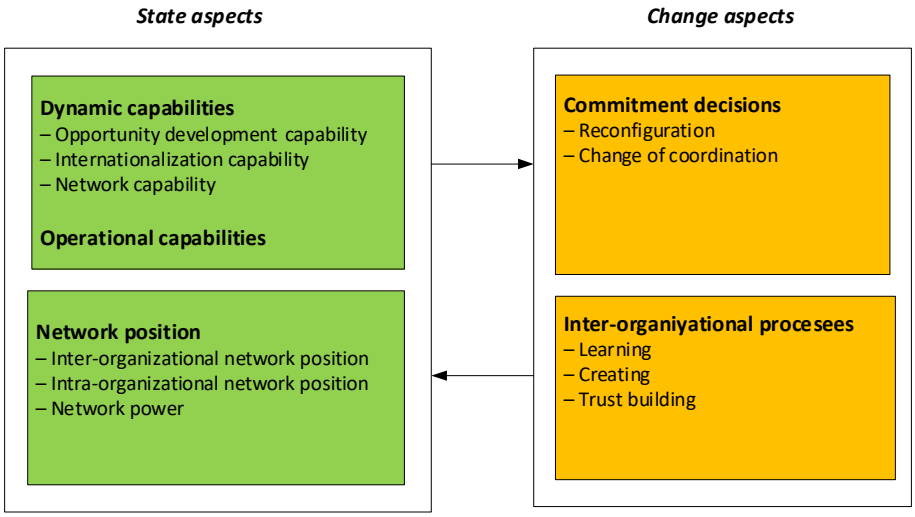

Figure 5. First Multinational Uppsala Model of 2013
Source: (Johanson & Vahlne 2013, p. 200).

The Second Globalization Uppsala Model of 2014: Full Globalization and Performance

A further update of the Uppsala model of 2014 attempts to engage all previous approaches, including the network approach, international entrepreneurship perspective, high-tech and innovation perspectives, which are combined as a developed view of the role of resources *sensu largo*, placed in the model as variables called operational capabilities and dynamic capabilities (Figure 6). The learning process and knowledge-based models are expressed in the variable 'organizational processes'. Vahlne and Ivarsson (2014, pp. 227-247) built their model on the original model from the 1970s. The revised model is based on the original model from the 1970s (Johanson & Vahlne, 1977) and four subsequent modifications taking into account the network approach (Johanson & Vahlne, 2009), international entrepreneurship theory (Schweizer, Vahlne & Johanson, 2010; Vahlne, Schweizer & Johanson, 2012) as well as international network coordination (Vahlne, Ivarsson, & Johanson, 2011; Vahlne & Johanson, 2013) and the concept of multinational enterprises (Johanson & Vahlne, 2013). This is the second globalization Uppsala model, referred to by the authors as The Uppsala Globalization Process Model of the Firm. For the first time, the model includes the outcomes of the internationalization-globalization process, referred to as the degree of globalization.

The Second Multinational Uppsala Model of 2017

Johanson and Vahlne (2017) extended the model once more, however, the structure and general content remained as in the original model developed in 1977 with two state and two change variables and the relationships between them (Figure 7). The business context is rooted in the network view; the focal point of the model is the multinational business enterprise (MBE).

The static variables include capabilities and commitments / performance. Capabilities, understood as firm-specific advantages (FSAs), include operational and dynamic capabilities as in previous models. Commitments describe resources distribution among the multi-business enterprise, such as product lines, scope of countries, and/or relationships between various unities of the enterprise. Performance

is understood as multi-folded, for example, as the position in the network, degree of globalization or any other performance outcomes.

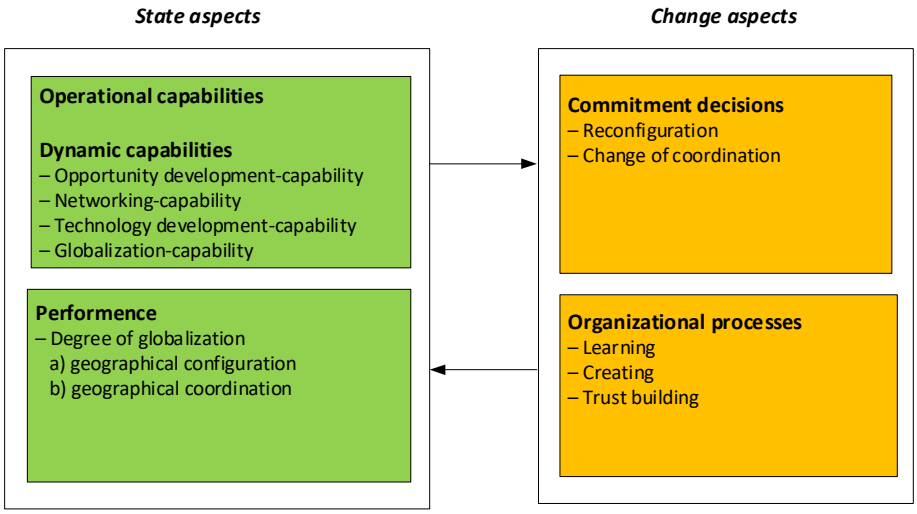

Figure 6. Second Globalisation Uppsala Model of 2014
Source: (Vahlne & Ivarsson, 2014, p. 242).

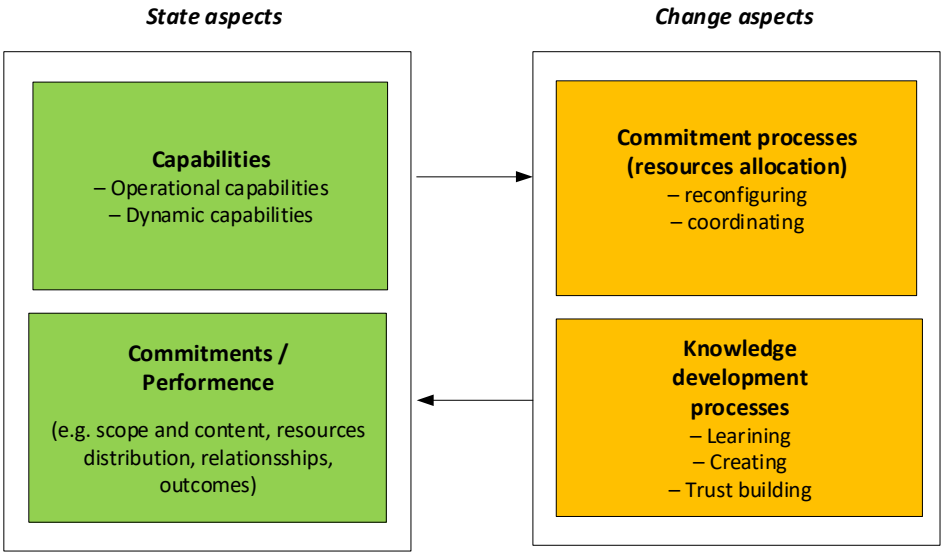

Figure 7. Second Multinational Uppsala Model of 2017
Source: developed, extended and adapted from (Vahlne & Ivarsson, 2017, p. 1092).

The dynamic variables include commitment processes and knowledge development processes. The commitment process is based on reconfiguring and coordinating or resources (their allocation or withdrawal). Knowledge development processes include mainly learning, creating and trust building, but are met in both dimensions – inter- or intra-organizational ones. This variable contains also three entrepreneurial knowledge processes such as (i) relationship building, (ii) flexibility in strategy implementation, and (iii) adaptation to the competitive task environment. "The essence of the model is that resources commitment and the knowledge development processes are inter-twined" (Vahlne & Johanson, 2017, p. 1092).

DISCUSSION

Stages models belong to the mainstream of internationalization theory and are most often used in empirical studies. However, they are not perfect concepts, which is almost as often taken up in the literature. The main criticism levelled at them concerns sequentiality. Not every firm has to go through all the stages, starting with the initial one and finishing with the last stage. There are also extreme opinions in the literature, such as Cavusgil's (1994, p. 18) the death of stages models, which was proclaimed in the context of the observed phenomenon of born globals in Australia. Nonetheless, the criticism of stages models includes the following controversy:

- not every firm goes through all the stages of the establishment chain, in practice there is leapfrogging of some stages (Cannon & Willis, 1981),
- some firms use either the accelerated internationalization path (rapid internationalization), as is the case of hidden champions, some firms follow either an accelerated internationalization path or some firms are international or even global from the very beginning (born globals) (Oviatt & McDougall 1994),
- stage models do not take into account either the strategic approach of the management or the entrepreneurial processes, which seem to be crucial for the international development of the firm – entrepreneurial internationalization (Turnbull, 1987; Andersson, 2000],
- due to the specific nature of services, stages models do not apply to the internationalization analysis of service firms (Grőnroos, 1999, p. 292).

Table 1. Summary of various modified Uppsala models

1977	2009	2010	2011	2013	2014	2017
Authors						
Johanson & Vahlne	**Johanson & Vahlne**	Schweizer, Vahlne & Johanson	Vahlne, Ivarsson & Johanson	**Johanson & Vahlne**	Vahlne & Ivarsson	**Johanson & Vahlne**
Theoretical base						
Stages model	Network approach	International entrepreneurship perspective	International entrepreneurship and network approach	Dynamic capabilities and network approach	Dynamic capabilities and strategic approach	Integrated approach
Empirical base						
4 cases	1 case	3 cases	1 case	*none*	17 cases	1 case
State aspects						
Market knowledge	Knowledge opportunities	Knowledge, Opportunities, Entrepreneurial capabilities	Knowledge opportunities	Dynamic capabilities and Operational capabilities	Operational capability and Dynamic capabilities	Capabilities
Market commitment	Network position	Network position	Network position (internally and externally)	Network position (intra and inter)	Performance	Commitment / Performance
Change aspects						
Commitment decisions	Relationship commitment decisions	Relationship commitment decisions	Decisions to reconfigure and redesign coordination systems	Commitment decisions (reconfiguration and coordination)	Commitment decisions (reconfiguration and coordination)	Commitment processes
Current activities	Learning, Creating, and Trust building	Learning, Creating, Trust building, and **Exploiting contingencies**	Learning, Creating, and Trust building	Learning, Creating, and Trust building (as inter-organizational processes)	Learning, Creating, and Trust building (as organizational processes)	Knowledge development processes (Learning, Creating, and Trust building)

Source: own compilation.

CONCLUSIONS

The original version of the Uppsala model of 1977 has been revised at least six times (not counting some additional minor modifications). The first major modification occurred under the influence of the development of the network approach to the internationalization processes of firms, as a result of which the network Uppsala model was proposed in 2009. This model received the JIBS Decade Award for 2009-2019. With the emergence of international entrepreneurship (the late-1980s and mid-1990s) and the dynamic development of this concept (in the first decade of the 21st century), the entrepreneurial Uppsala model was proposed in 2010 as the second major revision of the original model. The third modification, which occurred in 2011, is the introduction of international network coordination into the model, i.e. the creation of the first, preliminary Uppsala model discussing the globalization processes. The year 2013 brought another revision of the model, this time, dynamic capabilities appeared, and the model explains the phenomenon of multinational enterprises and transnational corporations. Another revision of the model was published in 2014. It introduces the second globalization Uppsala model, built on all previous concepts and introduces the degree of globalization into the model as a result of the process of the firm-level internationalization. The most recent revision of the model was published in 2017, it organizes and integrates the previous outputs of the Uppsala models (Table 1).

Although stages models (mainly the Uppsala model) are often criticized in the literature, they are nevertheless still widely used in empirical research, and their successive modifications may attest to their universal character and timelessness. Hult, Gonzalez-Perez and Lagerström underscore that the Uppsala model „has served as a theoretical underpinning" (2020, p. 38). They see a lot of potential uses of these revised models, especially the one of 2017 in future international business research in such contexts as technological entrepreneurship or digitalization of global business. Last year, Vahlne and Johanson (2020, p. 4) concluded as follows:

> *"We suggest that our model can still be improved further by recognizing the general psychological characteristics of managers, for instance, what makes them tend to shy away from radical change and to prefer instead an incremental approach? What does this mean for internationalization?"*

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Strategic entrepreneurship and performance of Nigerian banks: A Quantitative approach

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ABSTRACT

Objective: Strategic entrepreneurship provides value that allows companies to compete favourably in the market compared to their competitors, especially in the banking sector, and thus influence their performance. Therefore, this study examined the impact of strategic entrepreneurship on the performance of Nigerian banks.

Research Design & Methods: A quantitative approach was adopted for the study, which used a post facto study design. The sample size consists of 10 banks listed before 2009 that were only excluded in 2018 with related data. Secondary data collected from annual reports and financial statements of all sample banks over ten years (2010-2019) were analysed. Panel data analysis was used to measure the relationship between independent and dependent variables at $p< 0.05$.

Findings: The study demonstrates that strategic dimensions of entrepreneurship (strategic renewal, sustainable innovation, and domain renewal) play a key role in joint and significant organizational performance. It has also been confirmed that strategic renewal independently affects business organizational performance, while domain definition has a positive but minor relevance. However, permanent regeneration has the opposite effect on organizational performance.

Implications & Recommendations: This finding means that many Nigerian banks have failed to put into practice the knowledge and financial commitment to take advantage of opportunities, which is an important means of strengthening the sector amid the pandemic syndrome and highly turbulent environment. It is therefore imperative that the management of Nigerian banks be financially engaged in formulating innovative strategies and activities.

Contribution & Value Added: The study has established that strategic entrepreneurship components jointly and independently influence the performance of Nigerian banks. It was also discovered that strategic renewal, sustainable innovation, and domain renewal are strong predictors of banks' performance.

Article type:	research article
Keywords:	strategic entrepreneurship; strategic renewal; sustained regeneration; domain redefinition; firm performance
JEL codes:	J64, M10, M14

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INTRODUCTION

The pivotal contribution of the banking sector to the nation's economy has been documented and acknowledged by scholars, financial analysts, and economists across the globe. Consumer News and Business Channel (NBC, 2020) recently revealed that the market capitalization of the global banking quarter stood at 7.9 trillion Dollars as of October 2019. It has been estimated that by 2022, the sector is expected to attain 26.5 trillion (Market Screener, 2020). According to the National Bureau of Statistics (2020)'s records, the banking sector contributes 24% to Nigeria's GDP as of the first quarter of 2020. This development shows that the banking sector is one of the fastest developing sub-sectors in

the world economy. In line with this perception, Erdal and Ekinci (2013) observe that an effective banking sector constitutes an essential portion of the financial system and thus it is fundamental to achieving sustainable economic growth. Additionally, Naumovska *et al.* (2015) reiterate that the banking sector has the opportunities to alter useful resource allocation and saving rates with an influence on long-term financial growth. However, the sector combats unhealthy competition challenges, operational and regulatory challenges, and the novel COVID-19 pandemic devastation. Since lethal diseases have been declared by the World Health Organization (WHO) on 11th March 2020, the banking sector has been experiencing dwindling profit. Evidently, IMF (2020) confirms that the sector's income has adversely hit hard by the financial shock of the novel COVID-19 and the sector will remain under stress through 2025. The consequence of this scenario has made many banks in Nigeria opt for the retrenchment of their personnel while others are thinking of mergers and acquisitions.

Strategic entrepreneurship has been documented as construction related to organizational performance and profitability (Adeyeye, 2016; Genç, 2012; Kuratko *et al.*, 2015). Strategic entrepreneurship provides a value that enables companies to compete favorably in a competitive market and thus affect their performance (Kuratko & Audretsch, 2013;Morris *et al.*, 2012; Postuła & Majczyk, 2018). It expresses a clear sense of strategic vision, focuses more intensely on goals and specifics, and minimizes competitive disadvantages. In addition, it encourages employees to make decisions by giving those instructions on what to do, when, and how to do it and to help them make the journey easier based on positive decisions. Finally, it provides a detailed assessment of the company's internal and external environment, as well as an effective and efficient way to implement measures that affect the company's organizational performance, especially from the point of view of expanding customer base (Bhatti *et al.*, 2020; Covin & Miles, 2006; Dyduch, 2019;Hitt *et al.*, 2011;Kuratko, 2013). The strategic dimensions of entrepreneurship such as strategic renewal, sustainable revitalization, and redefined domains are researched very intensively in the academic fields and applied to most organizations to gain competitive advantage in advanced countries (Genc, 2012; Jancenelle *et al.*, 2017; Kuratko & Morris, 2018; Yiu *et al.*, 2014).

However, little or no research has linked these parameters to institutional performance, particularly in the Nigerian banking sector (Adeyeye, 2016). Therefore, this current study intends to fill this existing gap in the literature by examining the extent to which strategic entrepreneurship dimensions (strategic renewal, sustained regeneration, and domain redefinition) influence organizational performance with specific reference to the Nigerian banking sector.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Strategic Renewal

Strategic renewal is an entrepreneurial strategy phenomenon under which the organization seeks to renew its relationships with its markets or industry competitors by radically changing its competitive model (Jancenelle *et al.*, 2107; Kuratko, 2017; Kuratko, & Audretsch, 2013). Strategic renewal is viewed as the process, content, and outcome of a firm's freshness or replacement, which has the potential to significantly impact its long-term future. This is a change in the organization (An, *et al.*, 2018; Han & Park, 2017) in order to change the scope of the business or strategic approach, most often the transformation of organizations through the refinement of those key ideas, which are built (Agarwal &Helfat, 2009; Balasubrahmanyam, *et al.*, 2012; Corbett *et al.*, 2013; Morris *et al.*, 2012;). This can be discontinued, that is, the continuous effort to change or change the strategic content or the implementation represents a major or sudden change in the strategic content or implementation or enhancement (Mazzei, 2018; Postuła & Majczyk, 2018; Riviere *et al.*, 2018). Therefore, strategic renewal can occur when a firm develops a "new" strategy and attempts to increase or maintain competition by better executing a specific "pre-existing" strategy and using an environmentally friendly approach for the best performance. In both cases, the internal processes, structures, and/or capabilities of the organization may change. (Riviere *et al.*, 2018; Sáez-Martínez,2011; Yiu, *et al.* , 2014). According to Klammer *et al.* (2017), strategic renewal reflects the strategic and organizational change that involves redefining the business concept, restructuring, and introducing system-wide changes.

Studies carried out by Mohutsiwa (2012), Urban and Wood (2017) and Schmitt *et al.* (2018) substantiate that strategic renewal enhances firms' performance by increasing their ability to extend firm capabilities and creatively leverage them to add shareholders' value. Similarly, Bierwerth *et al.*, (2015) and Kearney and Morris (2015) reaffirm that self-renewal programs by banks such as self-service, mobile money that redefine or adapt firms' business concepts increase their ability to react faster to threats and opportunities in dynamic industries. In the same direction, Kuratko (2017) confirms that strategic renewal allows a company to adapt its business structure to alter environmental conditions and to react more efficiently to environmental changes. Based on the above empirical studies, the following hypothesis emerged:

H1: There is a significant relationship between strategic renewal and firm performance of the banking sector.

Sustained Regeneration

Sustained regeneration involves the constant introduction of new products, new services, or access to new markets, creating competitive advantages that differentiate others from others (Morris *et al.*, 2012). This requires innovation, competitive aggression, and a pro-active approach (Chen *et al.*, 2011; Kuratko *et al.*, 2015). It is a frequent and less risky approach to the organization's culture, structure, and systems management. Sustained regeneration seeks to maximize existing human and structural existing organizational resources (Dess *et al.*, 2003), based on the established organizational context. Structures must be flexible and organic to allow them to make quick decisions and make continual innovations (Kuratko &Morris, 2018; Mazzei, 2018). This method is often used by banks to achieve competitive advantage under short product life cycle conditions and constantly changing technical standards (Dhliwayo, 2014; Kuratko &Audretsch, 2013), as it is done by automated teller machines (ATMs). Initially, some banks started using it for customers, each bank has ATMs but strategically entrepreneurial banks continue to offer different features and security features that attract customers to the disadvantage of other banks. Thus, it is hypothesized that:

H2: There is a significant relationship between sustained regeneration and firm performance.

Domain Redefinition

Domain redefinition is the redefining of a firm's existing domain in terms of location or industry to gain a competitive advantage and improve performance. It is the reintegration of an existing product or target market (Kantur, 2016; Kuratko et al, 2015; Kuratko & Morris, 2018; Mazzei, 2018; Morris *et al.*, 2011). It explores a new market, becoming the first entrant in a new field, to achieve the first proposer (Golder &Tellis, 1993). For example, banks are usually concentrated in the state capitals of Nigeria, however, Guaranty Trust Bank was one of the first commercial banks to have branches in other cities, with other products not available at other banks at the time. This gave it an edge over others in terms of market share and overall performance. Domain redefinition is the rarest form of corporate strategy, as it is characterized by active creation in the product market and the discovery of unsolicited status (Chen *et al.*, 2011; Covin & Miles, 1999). This explains what Mintzberg and Westley (1992) calls revolutionary or overlapping strategic redirection (Covin & Miles, 1999). Research by Chan (2017) and Dikmen(2016) is consistent with previous research that domain redefinition improves organizational performance. Therefore, it hypothesized that:

H3: There is a significant relationship between domain redefinition and firm performance.

RESEARCH METHODOLOGY

This study used a quantitative approach using an ex post facto study design with a focus on examining panel data. It is a statistical analysis of data sets of multiple observations for each sample unit at different points in time, as is most appropriate for the study in question. According to a report by NBC (2020), Nigeria's banks consisted of the 22 banks included in the list. The sample size consists of 10

banks listed prior to 2009 and not delisted before 2019 was used to provide an adequate time frame to establish the cause and effect of the incident. Secondary data was used from the annual reports and financial statements of all banks in the sample for ten years (2010-2019) each, as reported by the Nigerian Stock Exchange (NSE). The NSE data has been thoroughly reviewed by various analysts to be reliable, objective, and research-accurate. A panel data analysis was used to measure the relationship between the independent and dependent variables. A fixed-effects model test was performed to show the relationship between the dependent and independent variables within an organization, as each organization has its own individual characteristics that may or may not affect the variables. The random-effects model helped to include time-independent variables, and the Hausman test was used to decide which was more appropriate: a fixed or random effect for the study.

Model Specification

This model is built on the Dynamic Capabilities Theory adapted from the work of Teece (2017), and Zhou *et al.*(2019). The study developed two models to measures the dependent variable, Organizational Performance by using profit level. Consequently, the independent variable (strategic entrepreneurship) utilized three of the measures established in prior literature (Kuratko *et al.*, 2015; Morris *et al.*, 2012), the strategic renewal (amount spent on the formulation of strategy), sustained regeneration (innovative activities), and domain redefinition (the cost of investing in new markets) with firm age as a control variable (Bjornskov & Foss, 2013). The study was carried out using multiple linear regressions, the fixed-effect model, the random effect model, and the Hausman test.

RESULTS AND DISCUSSION

This section quantitatively describes the basic features of the data for the studies. It consists of the summaries of the sample under study.Table 1 presents the descriptive statistics of the variables in the data analysis that cut across the ten (10) listed commercial banks for a period of ten years. The result of Profit (PR), Strategic renewal, Sustained regeneration, domain redefinition, and Firm Age (FA) are 23.663, 24.154, 20.931, 23.062, and 24.1 respectively, all in millions of naira. These values fell between the minimum and maximum values of each of the variables. This indicated that the data are normally distributed. The standard deviations of 1.358, 0.856, 1.537, 2.504, and 12.797 for Profit, Strategic renewal, Sustained regeneration, domain redefinition, and Firm Age (FA) respectively, showed that the deviation from the mean value is marginal or insignificant which indicated that there was less fluctuation in the data suggesting a stable performance in the activities of the banks in the study. The results of the Skewness for Profits, Strategic renewal, Sustained regeneration, and Domain redefinition are -0.189, -0.505, -0.103, and -.079 respectively, showing that they are skewed to the left which indicated that the distribution is clustered around the maximum value. While the result of Firm age is skewed to the right with a value of 0.973, a positive mean value indicated that the distribution of the study is good.

Table 1. Descriptive statistics of the variables

Variables	Observations	Mean	Standard Deviation	Minimum	Maximum	Skewness	Kurtosis
Profit	100	23.663	1.358	20.596	26.380	-0.189	2.081
Strategic Renewal	100	24.154	0.856	21.725	25.620	-0.505	2.485
Sustained Regeneration	100	20.931	1.537	17.182	23.614	-0.103	2.453
Domain Redefinition	100	23.062	2.504	16.522	27.398	-1.079	4.111
Firm Age	100	24.1	12.796	12	48	0.973	2.527

Source: own study.

Heteroskedasticity Test

The difference in error from registration depends on the values of the independent variable, and a heteroskedasticity test was performed to determine the suitability of the regression model. The presence of heterosexuality is evident when the probability of Chi-Square is less than 5% and may affect the statistical

influences. The results of the heteroskedasticity performed with the corporate strategy variable show that there is no heteroskedasticity. For example, the probability of Chi-square in the first model was 0.95955 while the probability of Chi-square in the second model was 0.4296. Therefore, the study does not require the use of Robust Ordinary Least Square for the variables predicted to be variable.

Hausman Specification Test

The Hausman test was performed to determine if the General Leased Square (GLS) regression fixed effect (FE) or random effect (RE) method was appropriate for regression. - The result of the Chi-Square coefficient was 28.92 and was significant at P<0.05. When the P-value was less than 0.05, it thus inferred that the more appropriate model for the analysis was the fixed effect model. The study, therefore, utilized the fixed effect model. Table 2 presents the regression analysis of the model, which showed the relationship between the dependent (profit), and the independent variables (strategic renewal, sustained regeneration, and domain redefinition). An R-square value of 0.3322 indicates that the independent variables in the study accounted for 33% of the total variance of the dependent variable, while the remaining 67% of the variance in the dependent variable was explained by the variables that were not included in the study. This means that the strategic dimensions of entrepreneurship add up to 33% of overall corporate performance. The results showed that the model fit well with the study; this is indicated by the result of the F value of 14.42 and is statistically significant at P<0.05. It is necessary to note that firm age was omitted in the regression result as it did not have an effect on the entrepreneurial performance of the commercial banks.

Table 2. Results of the regression analysis

Variables	Model (Profit)	p-value
Constant	-12.54703	0.000
Strategic Renewal	1.627 (4.76)*	0.000
Sustained Regeneration	-0.229 (-2.63)*	0.000
Domain Redefinition	0.73 (0.27)	0.786
R Square	0.3322	–
F-value	14.42*	–

Note: * p < 0.05.
Source: own study.

Table 2 reveals the result of the regression coefficient of 1.627, which indicates a positive relationship between strategic renewal and organizational performance. This means that a unit increase in strategy will increase the profits of the banks by 1.627. Additionally, the result is statistically significant with a p-value of 0.000, the value of which is significant at P<0.05. These findings suggest that the more banks come up with new and improved strategies, the more they will be able to position themselves in the market, leading to greater performance and profits, in the long run, thus supporting the theory of dynamic capabilities. This is the theoretical basis of the study. Dynamically, banks invest more in strategic innovation, their performance, and it becomes more competitive. Corporate entities such as banks must be subjected to regular scrutiny and adapt to their corporate concept and be able to innovate to avoid bankruptcy. It is believed that firms must continually combine, build and redesign external and internal competition to address changes in the dynamic market environment. It was Sáez-Martínez (2011), Bierwerth *et al.* (2015), Dai *et al.* (2015), and Shu *et al.*(2019), who expressed that strategic innovation has a positive and statistically significant relationship with entrepreneurial performance. Hence, the H1 is accepted.

A regression coefficient of −0.229 was also detected, indicating a negative and significant relationship between continuous improvement and organizational performance. This negative relationship could mean that the banks did not carry out appropriate new activities. This finding differs from previous studies outside of Nigeria and has not supported Dai *et al.* (2015), the findings of Kuratko and Morris (2018),

Mazzei (2018), and Tuzovic *et al.* (2018) that are continuous innovations in the form of new products and services required for a better performance of the organization. This could possibly be due to insufficient investment in innovative resources, such as human resources, that will promote innovative activities, especially in most banks, where the attitude towards employment of employees is slow due to challenges, especially in the sectors financial Most banks in Nigeria employ contract employees who lack job security and are poorly paid, leading to high employee turnover rates. This in no way affects the quality of hired employees as dynamic capabilities, innovative employees will go to other areas for fulfilment. Finally, investment in organizational resources, including employee motivation, is necessary to increase employee commitment to continuous improvement. Therefore, the H2 is rejected.

The model also revealed a positive but insignificant relationship between domain redefinition and organizational performance, with a regression coefficient result of 0.073, so that a unit increase in domain redistribution would lead to a 0.073 increase in total assets of the banks. Also, it shows a p-value of 0.786 which is statistically insignificant at P>0.05. The findings of this study may be the result of a lack of interest in spending on dynamic opportunities, staying active, and taking risks as pioneers in other fields. This could point to Brand Finance (2020) which claims that no Nigerian bank has been included in the top 10 banks in Africa. This finding seems unique because it contradicts Bogner and Petricevic(2015) finding that domain redefinition requires the deployment of dynamic capabilities in new records, leading to increased organizational productivity. - Most commercial banks in Nigeria see a threat, especially as new markets are entering, possibly due to the increased risk of insecurity in the north, which has forced some banks to abandon such an environment altogether. And due to repeated bank robberies in Nigeria. Hence, the H_3 is partially accepted.

CONCLUSIONS

This study examines the impact of strategic entrepreneurship on the performance of Nigerian banks. They found that aspects of strategic entrepreneurship (strategic renewal, sustained regeneration, and domain redefinition) collectively contribute to the performance of an organization. It was also confirmed that strategic renewal independently influences organizational performance, while domain redefinition has a positive relationship but insignificant. However, sustained regeneration has an inverse influence on organizational performance. Deduction to be made from this finding is that many Nigerian banks have not put in place the necessary knowledge and financial commitment for the exploitation of opportunities, which is an essential tool for them to wax stronger in the midst of pandemic syndrome and in a highly turbulent environment. This implies that strategic entrepreneurship is still at the infancy stage in the Nigerian banking sector. It is imperative, therefore, for the management of Nigerian banks to be financially committed to strategy formulation, innovative activities, and investment in human resources.

Managerial Implication

The study reveals to the Nigerian banking administration the important role of business strategy in verifying the sustainability of the sector in an unpredictable, dynamic and competitive business environment. Investing in organizational resources such as staff motivation, willingness to spend on dynamic skills, proactivity and risk-taking is an indication of the survival business strategies of Nigerian banks. This implies that the sector should be regularly subjected for review and be flexible in terms of their organizational concept, financially committed to strategy formulation, innovative activities, and investment in human resources to be able to become innovative to avoid liquidation.

Limitations and Recommendations for Further Research

This study has several limitations that can be researched for future studies. The first limitation is that the study was limited to the banking sector which can be extended to other sectors such as the manufacturing sector, telecommunication sector, education sector etc. Secondly, the study used only questionnaires whereas, interviews can be included for further studies. Thirdly, the study used only a quantitative approach, meanwhile, both qualitative and quantitative techniques can be used in future studies.

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The meaning of financial accountability in Islamic boarding schools: The case of Indonesia

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ABSTRACT

Objective: This study aims to understand the concept of financial accountability in Islamic boarding schools (pesantren). The research is conducted at a pesantren in South Sumatra, which functions as a centre for Islamic education, social and business activities.

Research Design & Methods: The research data were obtained through in-depth interviews with pesantren administrators. This study uses transcendental phenomenology to analyze qualitative data.

Findings: This study found three themes that were sourced from the noematic experiences of research informants, namely amanah, trust, and transparency. This study reveals three essential things: first, accountability in the perspective of the pesantren's manager consists of accountability to God, the owner of the pesantren, students, and donors. Second, the manifestation of the implementation of financial accountability is financial recording and reporting. Third, transparency in understanding pesantren's manager is an openness among pesantren's administrators.

Implications & Recommendations: When accountability based on their experience is understood as accountability to the pesantren owner, the preparation of financial reports is also understood to be only important for the pesantren owner. Therefore, financial reports as a form of accountability to parties outside the pesantren are considered not so important, including donors.

Contribution & Value Added: This study reveals the meaning of accountability in the pesantren perspective and provides empirical evidence on sharia enterprise theory.

Article type:	research article
Keywords:	accountability; financial accountability; Islamic accountability; Islamic boarding school; pesantren; phenomenology;
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INTRODUCTION

This study aims to understand the concept of accountability in financial reporting, the phenomenon of accountability at Daarul Hikmah Islamic Boarding School as one of the non-government public organizations in the field of religious education. The growing issue of implementing accountability by implementing good governance principles is a phenomenon that needs every organization's attention to be trusted by stakeholders. Pesantren also did not escape this criticism. So far, Islamic boarding schools are considered exclusive and closed to modern management practices.

Pesantren in Indonesia has played an essential role in its history for more than a century. In the colonial era from 1600 to 1945, Islamic boarding schools played a role as traditional Islamic educational institutions (Zarkasyi, 2015). Since the Soeharto regime's fall in 1998, pesantren have become modern Islamic educational institutions (Syafe'i, 2017). According to Nilan (2009), Islamic boarding schools are believed to be the original heritage of Indonesia, which were involved in the process of socio-political change in the country, and played an essential role in producing ulama '(Muslim

scholars) in the 19th and 20th centuries (Lukens-Bull & Dhofier, 2000). In addition, Mustari (2014) stated that pesantren play an important role in rural development.

Public entities, including pesantren, whose main source of finance is public funds, must become part of a public entity where all their activities must be accountable to the public. The practice of accounting as an instrument of transparency and accountability, especially in Islamic religious entities such as pesantren, has not received much attention in scientific studies. Therefore, this study aims to fill in the gaps in accounting studies in the context of Islamic entities, especially pesantren. Accounting and accountability research in other religious entities such as churches is more advanced than accounting research in Islamic boarding schools. Senander (2017), Laughlin (1988), Hardy & Ballis (2013) have researched accounting practices and accountability in churches.

Therefore, pesantren that receive funds in the form of donations, alms, or other forms of financial assistance from the public, must pay more attention to transparency and financial reports. Donors need to know how donated funds are used. In general, donors are more likely to hand over their funds to pesantren administrators, assuming that pesantren administrators are people who can be trusted.

The Indonesian Institute of Accountants, the authority in issuing accounting guidelines for entities in Indonesia and Bank Indonesia, has issued Islamic boarding school accounting guidelines in 2019. These guidelines are not yet mandatory, only in the form of an appeal to Islamic boarding schools to improve reporting accountability. As it is known, the history of pesantren in Indonesia is much older than the institutions that published these guidelines. History has proven that many pesantren have been able to live and grow up by applying their accountability concept so far.

Several studies examining pesantren generally emphasize the contribution of pesantren to the economy and education such as (Gamal Abdul Nasir Zakaria, 2010; Izfanna & Hisyam, 2012; Ma'arif, 2018; Nilan, 2009; Permani, 2011; Wekke & Hamid, 2013; Zuhriy, 2011). Based on the researcher's knowledge, there has not been much research that examines how pesantren understands and practices the concept of accountability.

Then this research was conducted to dig deeper into the understanding and implementation of accountability in pesantren. The main focus of this research is how pesantren managers define accountability. This study's results are expected to provide an overview of the concept of accountability in pesantren.

This research is expected to provide an understanding of the concept of accountability from the Islamic perspective. Besides, this research was conducted to realize the existence and usefulness of accountability as a form of accounting for these entities and to maximize its role as an instrument for the development of da'wah in pesantren. Therefore, this paper tries to explore the manifestation of the concept of accountability in pesantren. In particular, our first research objective was to investigate accounting and reporting practices by Daarul Hikmah Islamic Boarding School in South Sumatra. Second, based on the accountability framework developed by Stewart (1984), we seek to find the extent to which accountability is implemented in its operating, accounting and reporting practices. By using triangulation techniques, namely interviews with parties who are competent in the management of pesantren, this study can explore the understanding of accountability and its implementation in pesantren.

This study contributes to the broader accountability literature in faith-based institutions. This research also contributes to the literature and practice of pesantren by highlighting the many neglected accounting and reporting problems of pesantren. Empirical findings of the concept and understanding of pesantren managers about accountability in managing pesantren provide a basis for investigating other pesantren. This will contribute to developing an appropriate policy framework in the context of management and methods for future accounting and reporting of pesantren or Islamic boarding schools.

The next section of this paper will describe the literature review and theory, followed by the research design and discussion of the findings. The last section is a conclusion that contains findings, limitations and suggestions for future research.

LITERATURE REVIEW

The concept and form of Islamic boarding schools are not only found in Indonesia, but also in Asian countries that have Muslim communities such as Bangladesh, Malaysia, or Thailand. In Bangladesh,

pesantren are better known as madrasas. The main contribution of this institution has an important role, especially in terms of education and empowerment of the local economy (Kabir, 2009). Madrasas have become alternative institutions for people to send their children to study religion (Asadullah & Chaudhury, 2010). Madrasas have a huge role to play in eradicating Bangladeshi illiteracy and promoting economic and social justice (Kabir, 2009).

Meanwhile, in Malaysia and Thailand, another name for Islamic boarding schools is Pondok. According to Abdul Hamid (2017) religious beliefs and the education system, which are the values of Pondok in Malaysia, contribute to solving the country's social problems well. Porath (2014) who examined the contribution of Pondok in Thailand found that moral, cultural, and intellectual values were the contributions of Pondok to the development of local Muslim youth.

The contribution of Islamic boarding schools to local communities in Indonesia is recorded in research in (Nilan, 2009) and (Lukens-Bull, 1970). Wekke and Hamid (2013) who examined the economic aspects of traditional and institutionalized Islamic boarding schools found that modern Islamic boarding schools in the form of foundations (legal recognition) have a better economic vision. Mustari (2014) describes the special contribution of Pesantren Suryalaya in rural development, including providing vocational training for indigenous people, creating jobs, running business-based agricultural businesses, providing social assistance, and initiating small and medium enterprises (UKM). The results of these studies indicate that pesantren with their various activities have an unquestionable role in the development of the economy, social and community morals.

Bovens (2010) defines accountability as the actions of individuals or organizations to report to authorities recognized as responsible for their actions. This is confirmed by Sinclair (1995) who states that accountability is the extent to which a person must answer a higher authority – law or organization – for one's actions in society or in one's organization; and the obligation to maintain accurate records of property, documents or funds. Another definition of accountability is stated by Roberts (1991) that accountability consists of two things, namely the responsibility to take certain actions and the responsibility to account for those actions. In line with this Brandsma and Schillemans (2013) stated that accountability refers to the process of an individual or an organization in responding to and balancing the needs of stakeholders in the decision-making process.

Generally, accountability is responsibility for the obligation or willingness to accept responsibility. According to Rebérioux and Roudaut (2018) accountability includes accountability, blame appropriateness, obligations and expectations for giving responsibility from one party to another. In this case, accountability is two sets of responsibilities, namely the responsibility to take action and the responsibility to be accountable for the actions that have been taken.

According to Messner (2009) in an organization there are three categories of accountability, namely: (1) financial accountability; (2) accountability for justice; and (3) performance accountability. Financial accountability is about creating and tracking complete records of an organization's transactions. Financial accountability focuses primarily on managing funds. Accountability for justice is to carry out the organization's operations in accordance with regulations and laws. Meanwhile, performance accountability focuses on the results or achievements made by an organization.

Accountability in the view of Islam is closely related to the basic concept of faith or tawhid. This concept establishes Allah as absolute truth, the source and ultimate goal of the universe (Saad *et al*., 2014). Tawhid is the basis of all actions of a Muslim actions (Yasmin & Haniffa, 2017). With the belief of monotheism, every Muslim act is only for Allah, including accountability, as stated in the verse of the Koran (Ali Imran 3: 191).

According to Siswantoro *et al*. (2018) accountability in an Islamic perspective is a responsibility between Muslim / Islamic organizations and their stakeholders. By using this perspective, accountability in Islamic entities will have higher ethical considerations than non-Islamic entities (Kamaruddin & Auzair, 2020). Meutia and Febrianti (2017) states that in Islamic non-profit entities, stakeholder theory suggests that management of Islamic entities should make decisions that take into account the interests of all stakeholders. Stakeholder theory offers a more inclusive accountability perspective that recognizes the need for Islamic non-profit entities to be accountable to multiple stakeholders (Meutia *et al*., 2010). This is important in order to prevent abuse by management (Yaacob *et al*., 2015).

At the same time, Islamic non-profit entities is required to respond to the social needs of stakeholders, while on the other hand it must meet the economic needs of the entity. According to Suhaimi Nahar and Yaacob (2011) this condition complicates the accountability of non-profit organizations. O'Dwyer and Unerman (2008) states that non-profit organizations usually focus on upward accountability (funders and government) and tend to ignore downward accountability (beneficiaries).

There are two accountability perspectives according to Triyuwono (2004) the first is human accountability to Allah; and secondly accountability to humans. The concepts of khalifa and amanah are the source of accountability to Allah. Meanwhile, accountability to humans is a contract of responsibility between humans. In the concept of Islamic ownership, all resources belong to Allah, humans as caliph only manage these resources. Thus, any resources, including financial resources belonging to an Islamic faith-based organization, should be treated as an amanah.

The liability contract between humans includes all accountability to parties related to the organization, internally and externally. Internal parties such as mutawalli (who manage the organization), supervisory board, board of directors, staff or employees and those who are internally involved with the entity. Meanwhile, the external parties are donors, the community, the community, the government and others.

Islamic boarding school is an entity founded with Islamic values. So that its operational activities are expected to be heavily influenced by Islamic values as explained by (Triyuwono, 2004), including financial activities. The existence of a relationship between religious values and management behavior is in accordance with (Grabiński & Wójtowicz, 2019) that religion and religiosity can influence managerial behavior.

RESEARCH METHODOLOGY

This study uses a qualitative approach in the form of transcendental phenomenology which aims to understand people's perspectives and find the reasons for their understanding (Davis, 1971). The Phenomenology approach seeks to classify conscious actions that stem from a person's interpretation of his experiences. Phenomenology is also defined as the study of meaning, which is broader than just the language it represents. According to Laverty (2003) phenomenological research is the study of the experience of consciousness which deals with the question of how the division between the subject (ego) and object (world) arises and how the division of objects in this world is classified. This study uses a phenomeological approach to develop a basic understanding of accounting practices in Islamic boarding schools. In more detail, this study uses transcendental phenomenology as a tool to assess the meaning of accountability in pesantren. Transcendental phenomenology comes from Edmurt Husserl (1859-1938) in his Logical Investigation (1900).

Phenomenology seeks to explore the meaning of human experience and make implicit structures explicit (Dowling, 2007). Phenomenology is a search for the essence of meaning which may not be obtained through ordinary observation (William, 1984). Sanders (1982) says that this essence emerges from the intermediate analysis (noema) and subjective understanding (noesis) of the object or experience.

Therefore, the researcher considers that the phenomenological is the right method to investigate and explore the actions, activities or habits carried out by informants regarding the meaning of accountability practices implemented in Islamic boarding schools. Through a phenomenological perspective, researchers will deeply understand the meaning of reality such as the integration of Islamic values into accountability practices in pesantren.

The primary data source in this study were informants. Moleong (2017) says that informants are people who provide information about the situation and conditions of the object under study. To obtain informants who are relevant to the substance of the study, the purposive judgment sampling method is used. This method involves selecting the most representative subjects or having the capability to provide the required information (Creswell, 2013). Based on this method, this study determined 5 (n = 5) informants, consisting of 3 people who work at the pesantren, 2 people from the pesantren's boarding committee.

Research data collection was carried out through semi-structured interviews. Interviews were conducted one-on-one with each of the five research informants. This is important in order to obtain useful

information where informants can have the freedom to answer questions (Khan, 2014). To obtain valid results, interviews were recorded and audio-recorded, which were then transcribed for further analysis.

Based on the data obtained from interviews with informants, researchers categorized and analyzed them into predetermined themes, namely: (1) the meaning of accountability for pesantren managers and (2) accountability implementation, and (3) the meaning of transparency.

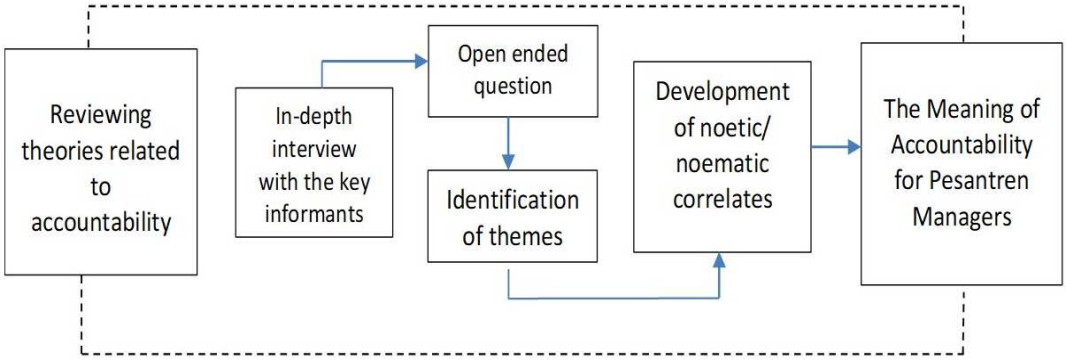

Figure 1. Model of study
Source: own elaboration.

The research location is the unit of analysis to be studied. The location of this research is Daarul Hikmah Islamic Boarding School which is located in Sungai Rengit Murni Village, Talang Kelapa District, Banyuasin Regency, South Sumatera. The selection of the research location was motivated by the researcher's interest in investigating the accountability applied and understood by the board of pesantren. The management of Daarul Hikmah Islamic Boarding School in its development seeks to make it a lighthouse or Islamic education center. This pesantren accepts either paid or unpaid or orphaned santri. In carrying out daily operations, this pesantren receives funds from the public in the form of education funds, donations, zakat, infaq, sadaqah, and waqaf, in addition to operational funds from the ministry of religion. Besides, the pesantren also has several businesses to meet students' needs, such as cooperatives, canteens, and laundry.

RESULTS AND DISCUSSION

Through interviews with informants, various responses emerged on the concept of accountability expressed by the informants. By using phenomenological analysis, this research finds important topics that are interesting to be explored further to explore the meaning behind this phenomenon. The first issue is the concept of accountability. The second topic is the implementation of accountability, and the third is the transparency concept.

Theme 1. Accountability

All interviewees expressed in various ways that accountability is accountability to Allah. An example was revealed in the following interview:

> "*… the most important thing in managing this pesantren, we are responsible to Allah, because we manage other people's assets that are entrusted to us…. If you do not manage it properly, it is a sin …*" (HZ)

> "*… Accountability in my understanding is not only a responsibility to the parents of the santri, yes … we do have to take good care of our students because this is also a mandate from Allah*" (USZ)

The results of in-depth interviews with pesantren managers reveal that the concept of accountability for managers is understood as being responsible for managing the funds obtained by the pesantren either from students or from outside assistance and donations. Being responsible also means being accountable to the pesantren owner as of the party who has entrusted the pesantren's management to them. Accountability is also understood as caring for and looking after students well.

Understanding pesantren managers that accountability means being responsible to Allah is fol-lowing Islamic teachings as conveyed by (Basri *et al*., 2016). The understanding that accountability also means keeping students well is also in line with what was conveyed (Suhaimi Nahar & Yaacob, 2011) that accountability in Islam means responsibility between Islamic organizations and their stakeholders, considering that santri are also stakeholders of the pesantren. Based on the findings it can be illustrated that the concept of accountability understood by the Daarul Hikmah pesantren manager is as in Figure 2.

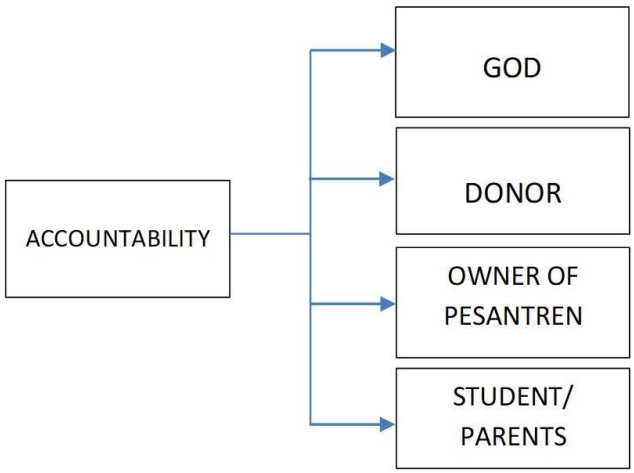

Figure 2. Accountability concept
Source: own elaboration.

Understanding the concept of accountability as a form of accountability to God seems to be following the Shariah Enterprise Theory proposed by (Triyuwono, 2001). According to Triyuwono (2001) accountability in Islamic organizations consists of two types: horizontal accountability and vertical accountability. Vertical accountability is accountability to Allah as the owner of the mandate. Meanwhile, horizontal accountability is accountability to other parties.

The findings of this study regarding the understanding of the concept of accountability in pesantren managers are in line with the findings (Murdayanti & Puruwita, 2017; Wirawan, 2019)

Theme 2. Implementation of Accountability

According to the pesantren manager, the implementation of accountability in the financial sector is realized in being accountable for receiving funds properly. Further exploration of the meaning of good accountability from the manager's perspective shows that the management of funds is recorded by the treasurer assisted by financial staff.

> "*… so far we have always recorded all the funds received, that is the duty of the treasurer, it should be recorded all of that, because every month it must be reported in the meeting*" (HZ)

> "*… Every time we receive funds from students' payments, donations, infaq, zakah, we have a logbook*" (HH)

Tracing of records carried out by the pesantren's manager revealed that cash receipts are recorded in the cash receipts book, while donations received in kind are recorded as received goods. According to the manager, for each receipt in the form of goods, they have their book. However, there is no assessment of the amount of money for the goods received. The reason for not being assessed is because they do not know how much it is worth.

Monthly meetings are the pesantren's control mechanism for financial management. The meeting reported the activities of the pesantren, educational activities, and receipt and expenditure of funds in general. Meanwhile, the receipt of funds from other pesantren activities, such as the canteen, laundry, is reported separately directly to the foundation's head. So that activities outside the pesantren's main activities as educational institutions are the direct responsibility of the head of the foundation.

Accountability, in this case, is defined as recording and reporting. Recording is conventional recording in the manager's understanding, while reporting is reporting to the pesantren/foundation owner. There is no need for reporting to external parties, including those who provide donations, alms, and other assistance. According to the pesantren manager, in carrying out pesantren activities, including financial management, trust is important. This was revealed in an interview with one of the top management.

> "*The main capital of running this pesantren is trust, we must trust, because the funds for this pesantren are given by people, which are donated for the progress of the pesantren if we are not trustworthy, it is difficult for us because our goal is not only in the world just this.*"

In addition to implementing accountability as internal recording and reporting, a concept emerged from the informants based on their experience in managing pesantren finances, namely: *'amanah'*. The belief that managing pesantren finances must be trustworthy is because '*amanah'* is a form of trust from both the pesantren owner and the aid provider. Triyuwono(2000) explained that "*amanah*" is entrusted to others to be appropriately used following the mandating wishes. This means that the party receiving the mandate does not have absolute control (ownership) of what is mandated. He should maintain the trust properly and use it as desired by the trustee.

In this perspective, pesantren managers assume that all funds provided by donors must be used and possible for the benefit of the pesantren; managing funds for the benefit of the pesantren properly is also a manifestation of carrying out the mandate received from the pesantren owner. Internal recording and reporting is a form of the trust concept possessed by the pesantren manager. However, the implementation of accountability based on this mandate is still limited to internal reporting.

When we refer to Messner (2009), the accountability that has been implemented by pesantren includes three categories of accountability, namely financial management accountability, equity and performance. Although not yet complete, considering the implementation of financial accountability has not been carried out completely.

Theme 3. Transparency

According to the pesantren management, external financial reporting to parties who make donations or to parents of the santri is not necessary because the financial reports are confidential. Their understanding reveals that people who donate are usually sincere and according to the manager, they do not need the report. What is important is how the pesantren manager uses the funds as best they can for the pesantren's needs. This is as stated as follows:

> "*We do not provide reports to outside parties, because this pesantren belongs to the Foundation, Reports like that huh ... are secret in nature ... besides that, they usually never ask for it if you have given, yes already*" (AS)

> "*Alhamdulillah, quite a lot of people donate to our pesantren ... maybe because they know that there are many orphans who have free school here ... and they never ask for a report ... yes, they are sincere maybe ... so our report is for the Foundation only*" (HZ)

Based on the manager's experience so far, external reporting has not been carried out because it is deemed unnecessary, assuming the donor is sincere. No donor has asked for a report on the funds given.

Transparency is understood as openness between pesantren managers, and receipt of funds from any source and expenditure is always reported in a monthly meeting. According to the pesantren manager, this is sufficient; the trust between the manager and the owner is the basis for them to carry out their daily activities. Based on the board's experience, trust is also the basis for donors and parents to contribute to the pesantren.

> "*We are the board of this pesantren, ustadz, teachers, other administrators are open and trusting with each other ... we have the same intention to provide religious knowledge to the students ... and our intention is thanks God so far about finances, donations are smooth that helps even though our pesantren is not that big*" *(HH)*

Understanding transparency as openness between management and owner has been sufficient to carry out Islamic boarding schools so far. Trust and openness are the essence of management at the pesantren. Transparency has its meaning in the management of pesantren.

On this occasion, the researcher also tried to explore how the management understood accounting and financial reporting based on accounting standards. The pesantren board considers that the records carried out so far are sufficient for the needs of the pesantren. According to them, financial reporting based on standards is only needed for companies, not for pesantren. Based on pesantren administrators' experience, they have never had any problems with the management and financial reporting they have used so far. This can be seen from the statements of several administrators:

> "*We make a report for the receipt and expenditure of pesantren money but, we don't use it, what was that accounting standards, we just use the normal ones and Alhamdulillah there have been no problems so far, if there are a few mistakes, usually*" (SZ)

> "*It has been recorded according to accounting, credit debit using the cash book, even though we have not used an application like the outside. It is not necessary it is still simple, it can still be handled*" (HH)

> "*accounting standards are only for large companies, for Islamic boarding schools, it is not necessary for my opinion*" (AS)

Pesantren managers' understanding of transparency is closely related to their understanding of the concept of accountability. When accountability based on their experience is understood as accountability to the pesantren owner, the preparation of financial reports is also understood to be only important for the pesantren owner. Therefore, financial reports as a form of accountability to parties outside the pesantren are considered not so important, including donors.

The findings of this study are not in line with research Albu and Flyverbom (2019) which found that transparency, both to external and internal parties, is an important aspect of accountability in an organization.

CONCLUSIONS

This study aims to understand the implementation of accountability in Islamic boarding schools (Islamic boarding schools). This study found three themes, which are the noematic of the research informants' experiences, namely *amanah*, trust, and transparency. Based on the development of these three themes, this research concludes the following: accountability in the pesantren manager's perspective consists of accountability to God, the owner of the pesantren, students and donors. The manifestation of the implementation of financial accountability are recording and reporting. However, financial reporting is understood only in internal reporting. It understands that one form of accountability to donors has not been realized in external reporting. This is also related to understanding transparency. Transparency in understanding pesantren's manager is an openness among pesantren's administrator. There is inconsistency in this case between, understanding the dimensions of accountability to donors and the implementation of accountability. The reason for this is the assumption used by the manager that the donors are sincere and trust the pesantren manager.

The findings of this study contribute to the Shariah Enterprise Theory by emphasizing the existence of vertical accountability towards God in Islamic entities, as stated by (Triyuwono, 2004). Another contribution is for regulators, these findings indicate that in order to implement the accounting guidelines for pesantren, a shift in understanding of the meaning of accountability is needed about the importance of external reporting.

However, this research cannot be separated from its limitations, such as qualitative research in general. The focus of research on one pesantren does not allow the results to be generalized to other pesantren. Therefore further research can review the findings of this study in many different pesantren and different contexts.

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The contribution of co-authors is equal and can be expressed as 50% per each of the authors: Inten Meutia prepared the introduction, literature review, methods section, proofread, and supervised the paper for publication and Rochmawati Daud prepared data and discussion, and drew conclusions.

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Conflict of Interest

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Entrepreneurial ecosystem of Luxemburg: Empirical insights into barriers and stimuli based on GEI data

Sahoum Ali Aljazzazen

ABSTRACT

Objective: The research objective of this article is to evaluate Luxembourg's entrepreneurship position and performance, and compare its entrepreneurship profile with other countries, and then to investigate the main bottleneck that holds back Luxembourg's growth in terms of entrepreneurship.

Research Design & Methods: The Global Entrepreneurship Index (GEI) approach was employed in this research. This methodology focuses on institutional and individual dimensions of entrepreneurship that are linked to efficiency. Furthermore, we used a unique feature of the GEI, the Penalty for Bottleneck (PFB) methodology, to infer which entrepreneurial elements should be tackled and how much effort is needed to alleviate the bottleneck of the Luxembourg entrepreneurial profile.

Findings: The study results show no improvement in Luxembourg's profile in terms of entrepreneurship from 2014 to 2016, although it has a very high GDP per capita than those with GEI higher than it. The "start-up skills" were the main bottleneck in terms of entrepreneurship performance, which lowers the overall GEI score of Luxembourg. Therefore, the start-up skills should be improved 100% to become 0.23 in order to enhance Luxembourg's GEI score by 10 points; consequently, the new overall GEI becomes 68.3.

Implications & Recommendations: To increase and develop entrepreneurship programs in Luxembourg, the responsible authorities in Luxembourg must adapt entrepreneurship programs that target various groups of society, especially with many immigrants. It should also facilitate access to entrepreneurial and support programs to enable aspiring entrepreneurs to create their businesses. Luxembourg should also focus on refugees by strengthening the entrepreneurial programs available to them and cooperating with NGOs to overcome obstacles such as the language barrier.

Contribution & Value Added: This paper highlights Luxembourg's vulnerable performance using a new approach that combines single and institutional variables in a unique model. Additionally, what sets this research apart is the use of PFB, which is also used to uncover the components of entrepreneurship that need to be addressed.

Article type:	research article
Keywords:	entrepreneurship; entrepreneurial ecosystem; bottleneck's penalty; GEI; GEM; Luxembourg
JEL codes:	L26, R11, F64

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INTRODUCTION

Luxembourg is a tiny country with 2500 square kilometres located between Belgium, France, and Germany. Immigrants make up 45.28% (248.900) of the 549.700 total populations in Luxembourg. In 2013, the number of cross-border workers was approximately 159,600 (41.1%) of the total employment in Luxembourg, where the majority of these workers came from France, Belgium, and Germany (Schinzel, 2016). Recently, Luxembourg has made several transitional measures in developing the economy to include the mining and steel industries. Moreover, Luxembourg is considered the fifth largest financial

market in Europe and the 20 largest financial markets globally. Furthermore, Luxembourg's economic transition included attracting international companies to become the headquarters for major companies, especially in the information technology field, such as Amazon, PayPal, and Google (Carr, 2018).

The research objective of this article is to evaluate Luxembourg's entrepreneurship position and performance, and compare its entrepreneurship profile with other countries, and then to investigate the main bottleneck that holds back Luxembourg's growth in terms of entrepreneurship. The Global Entrepreneurship Index (GEI) methodology is used in this paper, which examines and evaluates the nation's overall business performance and measures the level in the country (ecosystem). This approach is extraordinary because it combines quality-related institutional and individual elements that enable the performance to be calculated on an individual and institutional level in a single model (Szerb & Trumbull, 2018). The comparison of the studied country with other countries has been done through utilizing this approach. Further, with this method, the strengths and weaknesses of country performance could be distinguished and identified (Lubbadeh, 2019; Ubrežiová *et al.*, 2008). The results show that Luxembourg has a significant hold on individual characteristics of entrepreneurship. Finally, the bottleneck methodology PFB, a unique feature of the GEI, is used to simulate a situation in which a nation can improve its performance by allocating more enterprise resources to the weakest link in the model. In order to increase its performance, the simulation implies that Luxembourg should concentrate on start-up skills. We have thus been able to offer the country's enterprise performance a comprehensive, multi-level view. Besides, policy recommendations can help intensify the company's performance by targeting the system's most vulnerable link.

The rest of this paper is organized as follows: the following section reviews the literature that takes Luxembourg's entrepreneurship into account. The section after it delves into the material and method used in this study has been explained. The following section analyses the Luxembourg entrepreneurial profile based on the GEI method, compares its profile with other countries, and makes a simulation to leverage its GEI scour relying on the FBP technique. The conclusions, limitations, implications, and recommendations for future research are presented in the final section.

LITERATURE REVIEW

The prevailing belief is that entrepreneurship is the primary driver of a country's economic development. Therefore, it reduces the unemployment rate, endorses economic growth, and boosts technological innovation (Audretsch, 2012). However, the Entrepreneurship outcomes become more accurate and effective if it is measured and defined correctly (Ács *et al*., 2014). Entrepreneurship, frequently understood as the process of creating new enterprises (Reynolds *et al*., 2005) is considered an essential contribution to innovation and technological growth, driving productivity and economic growth in the end (Braunerhjelm *et al*., 2009). In addition, successful entrepreneurs promote knowledge transmission and create new jobs.

As recently as a decade ago, Grand-Duchy has focused on supporting start-ups, the need for diversification of the economy, and the public sector's support in Luxembourg and the private. This, in turn, affects the start-ups' ecosystem positively and aids the entrepreneurs in initiating their own business (Gancarczyk, 2019). One of the main reasons for developing the ecosystem of entrepreneurship and innovation in Luxembourg is the national policy on capacity building and guiding the economy towards knowledge-based industries. This committee made several recommendations include: ease of access to information, creating and facilitating channels of communication with migrants to promote initiatives, improve communication between different groups and adapt programs of initiatives and entrepreneurship for these groups (OECD/European Union, 2017). The percentage of immigrants in Luxembourg is relatively high, constituting 45% of the population (Schinzel, 2016). Migrants are an essential economic and socio-economic phenomenon. Migrant entrepreneurs are described as people who have come and started their own business in the immigration country. This phenomenon occurs in most developed nations, attracting representatives of poverty-stricken nations. Start-up is one of the forms that allow migrant workers to overcome barriers in the host country's labour market (Maj & Kubiciel-Lodzińska, 2020).

Entrepreneurs face many difficulties because of the National Centre for Business Administration policies in Luxembourg, which focuses on technology-based businesses. Therefore, some laws do not support entrepreneurs in obtaining the necessary funding to set up their businesses. The youth self-employment rate has been increased as far as a decade ago. However, the other groups remain under the E.U. self-employment average. However, the gap between genders is still exited in terms of self-employment; nevertheless, the percentage of self-employment women grew from 5.7 % in 2008 to 8.0% in 2017. Unemployment increased in Luxembourg after the global financial crisis in 2008, but it peaked at 6.7 % in 2015 and then fell to almost 5.5 % in 2017 for both genders. However, the unemployment rate remains lower than that of the EU in general, which is 7.8 % in 2017. The unemployment rate among the youth considers high relative to the other E.U. countries. The peak value was 22.6% in 2014; the following year dropped to 18.9%. However, Luxembourg's youth unemployment rate was one and half times the unemployment rate related to the national average (OECD/European Union, 2017).

RESEARCH METHODOLOGY

The article is based on the data of the Global Entrepreneurship Monitor (GEM) for the years 2012-2016. Most of the entrepreneurial activity information used in various international comparative research in economics (macro and micro level) is provided by The Global Entrepreneurship Monitor (Głodowska, 2019). In turn, the countries level of growth can be classified based on the statistical analysis- e.g., linear regression analysis- of the provided data, for example, GDP per capita, which explains more than 60% of country entrepreneurship growth (Liñán & Fernandez-Serrano, 2014). GDP per capita plays a crucial role in boosting establishing businesses, where demand for products and opportunities is directly proportional to the income (Fritsch & Schroeter, 2011). Transition economies depend profoundly on the information provided by GEI at both levels, institutional and individual. Therefore, in order to succeed in transition the economies and emerging new business, a set of actions required to be changed, including changes in the attitudes, abilities, and aspirations for both individuals and institutional level (Cieślik & van Stel, 2014). Entrepreneurs usually gain a sense of respect from society because of their ability to create new business, supply a new product, or develop new technology (Thornton *et al*., 2011).

The Global Entrepreneurship Index (GEI) has been developed as an indicator to identify and measure the entrepreneurship standardization and the entrepreneurship ecosystem level in the studied country. GEI consists of three sub-indexes attitudes, abilities, and aspirations. These sub-indexes divided into fourteen components, called pillars (Table 1). The fourteen pillars have been identified due to their importunacy during measuring and strengthening the entrepreneurial ecosystems. These pillars were used to determine the quality of the entrepreneurship ecosystem or the entrepreneurial ecosystem (EE.) in a particular country through both individual and institutional variables. The data collected based on these variables is used in the sub-indexes calculation. Therefore, the overall GEI mark is calculated based on the sub-indexes scores (Ács, Szerb, Lafuente, & LIoyed, 2018).

RESULTS AND DISCUSSION

Luxembourg's Entrepreneurial Performance Based on GEI

This section describes Luxembourg's entrepreneurship relatively to other transition countries (Table 2), which presents overall GEI values for 95 countries, including Luxembourg. The countries sorted based on GEI value while the United States ranked first with GEI 82.5 and GDP per capita 51.884, and Burkina Faso came in the last of the list with GEI 12.5 and GDP per Capita 1.560. Countries have been divided into three divisions (group 1 consists of the lowest developed countries, group 2 consists of the medium developed countries, and group 3 consists of the highest developed countries) (Szerb & Trumbull, 2018). It is clear that Luxembourg has the second-highest GDP per capita; however, Luxembourg comes in rank 19 in terms of GEI score. Although it is prevalent higher GDP per capita increases start-up rates, which is one of entrepreneurship measurement factors (Pinillos & Reyes, 2011)

Table 1. The GEI Structure of the entrepreneurial ecosystem of a given economy

	Sub-indexes	Pillars	Variables (ind. / inst.)
Global Entrepreneurship Index	Attitudes Sub-index	Opportunity Perception	Opportunity Recognition
			Freedom
		Startup Skills	Skill Perception
			Education
		Risk Acceptance	Risk Perception
			Country Risk
		Networking	Know Entrepreneur
			Agglomeration
		Cultural Support	Carrier Status
			Corruption
	Abilities Sub-index	Opportunity Startup	Opportunity Motivation
			Governance
		Technology Absorption	Technology Level
			Technology Absorption
		Human Capital	Educational Level
			Labor Market
		Competition	Competitors
			Competitiveness
	Aspiration Sub-index	Product Innovation	New Product
			Techtransfer
		Process Innovation	New Technology
			Science
		High Growth	Gazelle
			Finance and Strategy
		Internationalization	Export
			Economic Complexity
		Risk Capital	Informal Investment
			Depth of Capital Market

Source: Ács *et al*., (2013, p. 217).

The Global Entrepreneurship Monitor (GEM) has developed the Total early-stage Entrepreneurial Activity (TEA) rate. TEA concerns measuring the proportion of the population that runs a new individual business (age less than three and a half years). Where the percentage of the population in Luxembourg based on the TEA rate was somewhat higher than the E.U. average, where it was 8.8%, while the average of the European Union was 6.7% during the period 2013-2017, according to reports for the period 2013-2017, the lack of available job opportunities is one of the reasons why people in Luxembourg go to entrepreneurship.

Table 3 demonstrates Luxembourg's overall entrepreneurial profile based on institutional and individual components, the fourteen pillars in general, and the three main sub-indexes (Attitudes, Abilities, Aspirations). We notice that Luxembourg is among the worst counties (worst 25%) in only four variables belongs to "Entrepreneurial Attitudes," two of them in the individual variables. Namely (Risk Perception, Career Status), the rest within the institutional variables, namely education and "start-up skills," is the only pillar within the (worst 25%). Only five variables labelled with yellow- are within the (worst 50%) and nine variables above the average (light blue). It clears that the majority of Luxembourg variables are located within the best 25% of countries.

Table 2. Luxembourg in position global entrepreneurship index rank of the country's 2012-2016 average

Rank	Country	GDP	GEI	DEV	Rank	Country	GDP	GEI	DEV
1	United States	51,884	82.5	3	49	Uruguay	19,491	34.1	2
2	Switzerland	56,395	78.9	3	50	Barbados	15,355	34.0	2
3	Canada	42,838	78.3	3	51	South Africa	12,385	33.4	2
4	Australia	43,881	74.9	3	52	Croatia	20,529	32.3	2
5	Sweden	44,576	74.7	3	53	Costa Rica	14,135	31.5	2
6	Denmark	44,709	73.7	3	54	Lebanon	13,031	31.0	2
7	United Kingdom	37,840	72.2	3	55	Kazakhstan	23,509	30.0	1
8	Ireland	52,558	70.3	3	56	Belize	7,941	29.8	2
9	Netherlands	45,951	69.2	3	57	Namibia	9,113	29.4	2
10	Finland	39,355	68.1	3	58	Macedonia	12,310	29.1	2
11	Hong Kong	54,279	67.3	3	59	Morocco	7,276	28.2	2
12	France	37,575	65.2	3	60	Thailand	15,000	27.7	2
13	Austria	44,210	65.2	3	61	Peru	11,552	27.4	2
14	Germany	43,402	64.2	3	62	Mexico	16,520	26.6	2
15	Belgium	41,216	63.3	3	63	Bulgaria	17,355	26.5	2
16	Taiwan	37,832	63.0	3	64	Panama	19,824	26.4	2
17	Israel	31,676	61.1	3	65	India	5,578	26.3	1
18	Chile	22,160	59.0	2	66	Georgia	9,008	25.3	2
19	Luxembourg	94,277	58.5	3	67	Trinidad & Tobago	31,592	25.3	2
20	Norway	63,173	58.2	3	68	Russia	24,732	24.7	2
21	Estonia	26,772	56.0	3	69	Egypt	10,079	24.2	2
22	Qatar	119,538	55.4	3	70	Philippines	6,589	23.9	1
23	Korea	33,372	53.6	3	71	Argentina	19,017	23.8	2
24	Slovenia	28,592	52.9	3	72	Iran	16,184	22.5	2
25	Singapore	78,294	52.1	3	73	Ghana	3,720	22.5	1
26	Japan	36,946	49.4	3	74	Algeria	13,207	22.2	1
27	Cyprus	31,196	48.0	3	75	Vietnam	5,386	22.2	1
28	Portugal	26,208	47.0	3	76	Nigeria	5,409	22.0	1
29	Poland	24,484	46.9	2	77	Jamaica	8,090	21.7	2
30	Lithuania	25,150	46.4	2	78	Bolivia	6,325	21.4	1
31	Spain	31,691	45.6	3	79	Indonesia	10,195	21.1	2
32	Turkey	21,871	45.0	2	80	El Salvador	7,743	20.7	2
33	Puerto Rico	33,844	44.6	3	81	Bosnia and Herzegovina	10,224	20.7	2
34	United Arab Emirates	67,133	44.6	3	82	Ecuador	10,630	20.5	2
35	Slovakia	27,489	42.8	3	83	Brazil	14,922	20.4	2
36	Latvia	22,298	42.3	2	84	Zambia	3,543	20.3	1
37	Czech Republic	28,380	40.4	3	85	Senegal	2,297	19.7	1
38	Saudi Arabia	50,458	40.2	2	86	Guatemala	7,203	18.4	2
39	Hungary	23,946	39.4	2	87	Suriname	15,371	17.9	2
40	Tunisia	10,577	38.8	2	88	Pakistan	4,367	17.5	1
41	Colombia	12,592	38.3	2	89	Libya		17.2	1
42	Italy	34,452	38.1	3	90	Malawi	1,051	16.6	1
43	Jordan	8,390	36.5	2	91	Ethiopia	1,231	15.5	1
44	China	12,765	35.9	2	92	Cameroon	740	15.3	1
45	Greece	24,092	35.9	3	93	Uganda	1,646	13.9	1
46	Malaysia	24,132	35.5	2	94	Angola	6,148	13.8	1
47	Romania	19,376	35.0	2	95	Burkina Faso	1,560	12.5	1
48	Botswana	15,271	34.3	1					

Source: own elaboration based on GEI data 2012-2016 averages.

Table 3. Luxembourg entrepreneurship profile at the variable level and sub-indexes (based on 2014-2016 averages)

PILLARS			INSTITUTIONAL VARIABLES		INDIVIDUAL VARIABLES	
Entrepreneurial Attitudes	Opportunity Perception	0.77	Freedom	0.83	Opportunity Recognition	0.68
	Start-up skills	0.15	Education	0.34	Skill Perception	0.47
	Risk Acceptance	0.56	Country Risk	1.00	Risk Perception	0.34
	Networking	0.77	Connectivity	0.94	Know Entrepreneurs	0.54
	Cultural Support	0.66	Corruption	0.91	Career Status	0.35
	Entrepreneurial Attitudes	**48.3**				
Entrepreneur-ial Abilities	Opportunity Startup	1.00	Governance	0.99	Opportunity Motivation	0.90
	Technology Absorption	0.96	Technology Absorption	0.90	Technology Level	0.95
	Human Capital	0.56	Labour Market	0.52	Educational Level	0.86
	Competition	0.91	Competitiveness and Regulation	0.80	Competitors	1.00
	Entrepreneurial Abilities	**64.9**				
Entrepreneurial Aspirations	Product Innovation	1.00	Technology Transfer	0.87	New Product	0.94
	Process Innovation	0.62	Science	0.67	New Technology	0.74
	High Growth	0.54	Finance and strategy	0.88	Gazelle	0.51
	Internationalization	1.00	Economic complexity	0.93	Export	1.00
	Risk Capital	0.90	Depth of Capital Market	0.57	Informal Investment	1.00
	Entrepreneurial Aspirations	**62.4**				
GEI		**58.5**	**Institutional**	**0.80**	**Individual**	**0.73**

Note: Dark blue: best 25%, Light blue: best 50%, yellow: worst 50%, Red: worst 25%
Source: own elaboration based on GEI data 2012-2016 averages.

Figure 1 shows the fourteen-pillars data for Luxembourg for 2014 to 2016; we observe that the shapes of the three charts are almost identical, and the values for most of each of the fourteen pillars during this period are almost equal. Start-up skills remained the bottleneck with the lowest value equal to approximately 0.13. The value of "High growth" and "human capital" comes in second and third place with a value of less than 0.60 for high growth and approximately 0.60 for human capital. The trend of technology absorption shows a significant fall in the value from 1.00 in 2014 to 0.80 in 2015, then increased slightly in 2016. However, some pillars such as internationalization, opportunity start-up, and product innovation maintained stability within the same period with a value of almost 1.00. Moreover, there is a slight fluctuation in the value of networking and opportunity perception.

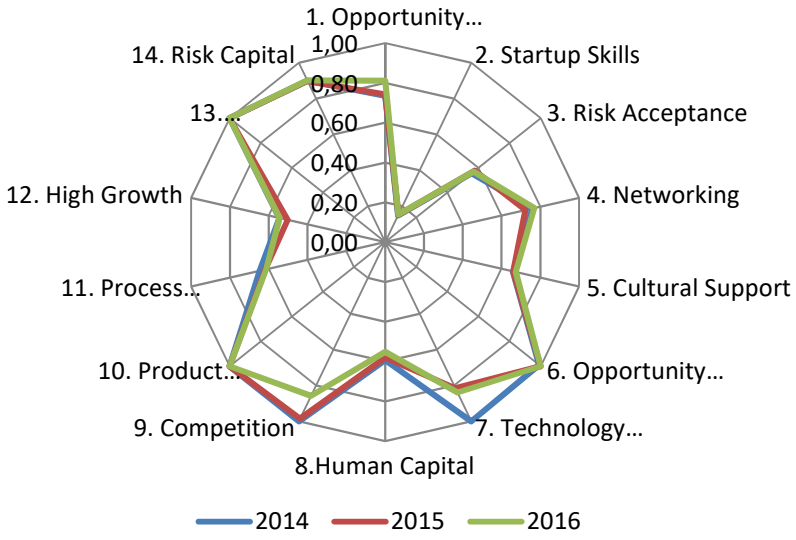

Figure 1. The time series comparison of Luxembourg's pillar values for the period 2014-2016
Source: own elaboration based on GEI data 2012-2016 averages.

Comparing Luxembourg's Entrepreneurial Performance to Belgium and Estonia

To investigate Luxembourg's GEI position, Figure 2 compares the value of the fourteen pillars over the years 2012-2016 for Luxembourg with one transition economy – Estonia and non-transition economy – Belgium (a neighbouring country). These two countries have been chosen for many reasons, including both countries located in the European continent; therefore, they encounter the same circumstances that Luxembourg faced. Moreover, the Luxembourg GDP per capita greater than both countries. However, Belgium's GEI value average of 63.1 is higher than Luxembourg, while Estonia has a GEI value of 56 and is considered the highest GEI value out of the transition countries (see Table 2).

Estonia is considered one of the most prosperous countries in entrepreneurship; although it was severely affected by the global financial crisis 2008, it achieved rapid growth, which reached almost 8 %in 2011 (Szerb & Trumbull, 2018). This development was achieved through Estonia's policy for 2014-2020, which focused on supporting high-growth start-ups and SMEs. This policy aimed to increase the Estonian economy's growth potential by digitalizing the economy and increasing productivity. But on the other hand, Belgium focused on youth leadership through many initiatives, the most recent of which was the 2016 National Reform Program. These programs aim to sustain business and grow it beyond its initial market goals. There were also state-level initiatives in Belgium, such as the Brussels Program to Support Youth Entrepreneurship and Wallonia Support, which focused on school and university students' entrepreneurship (OECD/EU, 2017).

Again, it is clear that "start-up skills" are the main drawback of Luxembourg entrepreneurship growth. The three countries almost had the same values of "high growth" level. The Graph shows that Belgium's fourteen pillars almost had equal values around Belgium's overall score, while in Luxembourg's case, there is a big gap between most of the fourteen pillars values to the high GDP per capita in Luxembourg.

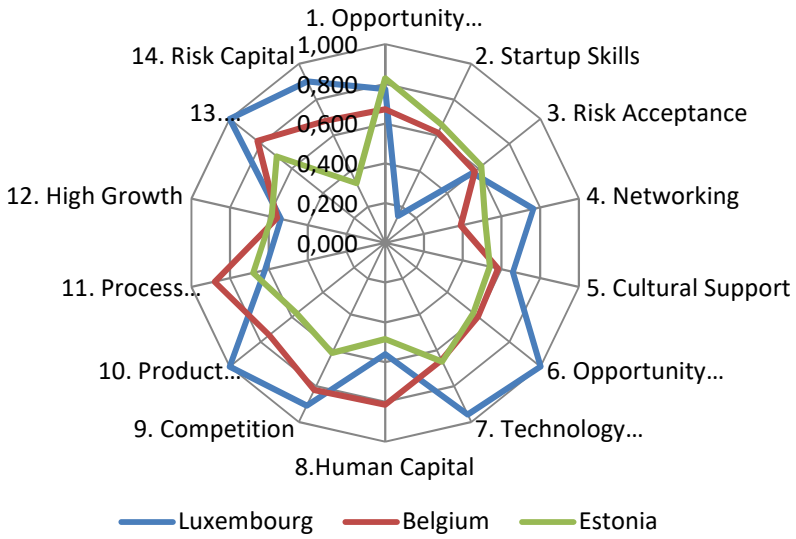

Figure 2. The comparison of Luxembourg, Belgium, and Estonia's pillar values
Source: own elaboration based on GEI data 2012-2016 averages.

The GEI's analysis results contribute to improving entrepreneurship in the country of interest by clarifying the vulnerability elements in the ecosystem, reducing the differences between the components and promoting the weaker part, and so on until reaching the optimal results term of entrepreneurship. The Penalty of Bottleneck method was developed to identify factors that lead to a decline in the overall GEI level in a particular country. Therefore, the impact of reducing the bottleneck factors will help to know the ability of this country to improve its performance (Ács *et al.*, 2014).

A Simulation for Improving Entrepreneurship in Luxembourg

Regarding PFB (Penalty for Bottleneck) analysis, Table 4 highlights only the bottleneck feature that constrains Luxembourg's performance. Emphasizing the previous section's mentioned section, the

Table 4. The bottleneck pillar

Pillar	Required Increase in Pillar	Percentage of the total new effort
Opportunity Perception	0.00	0%
Start-up Skills	0.13	100%
Risk Acceptance	0.00	0%
Networking	0.00	0%
Cultural Support	0.00	0%
Opportunity Startup	0.00	0%
Technology Absorption	0.00	0%
Human Capital	0.00	0%
Competition	0.00	0%
Product Innovation	0.00	0%
Process Innovation	0.00	0%
High Growth	0.00	0%
Internationalisation	0.00	0%
Risk Capital	0.00	0%

Source: own elaboration based on GEI data 2012-2016 averages.

Table 5. The new overall GEI and pillars values based on PFB method calculation

Target GEI Change	0.10

Pillar	Required Increase in Pillar	Percentage of the total new effort
Opportunity Perception	0.00	0%
Start-up Skills	0.23	100%
Risk Acceptance	0.00	0%
Networking	0.00	0%
Cultural Support	0.00	0%
Opportunity Startup	0.00	0%
Technology Absorption	0.00	0%
Human Capital	0.00	0%
Competition	0.00	0%
Product Innovation	0.00	0%
Process Innovation	0.00	0%
High Growth	0.00	0%
Internationalization	0.00	0%
Risk Capital	0.00	0%
Number of pillars Changed	1	should be >5 for 'balance.'

Indices	New Score	Change	% Of Total New Effort
ATT	0.587	0.10	100%
ACT	0.746	0.10	0%
ASP	0.715	0.09	0%
GEI	**0.683**	**0.10**	**100%**

Total Change	0.23
Total Change for 'dumb' policy	2.14

Source: own elaboration based on GEI data 2012-2016 averages.

critical bottleneck in Luxembourg's entrepreneurship advancement is the Start-up Skills. To increase Luxembourg's overall GEI points by ten; based on The PFB method calculation Table 5, the most remarkable improvement can be achieved by alleviating the startup skills pillar 100% to become 0.23 instead of 0.13. In turn, the entrepreneurship attitude sub-indexes average becomes 58.7. Therefore, the overall GEI becomes 68.3 instead of 58.3, with an increase of 10 points. Consequently, Luxembourg ranks 10 higher than Belgium, which is located in rank 15 with GEI 63.3.

CONCLUSIONS

The main goal of this paper was to look into Luxembourg's entrepreneurial development and make some suggestions for improving the country's entrepreneurial results. We examined the country's development at the institutional and individual levels using the GEI methodology. Besides, the PFB approach was employed to make policy recommendations by highlighting the system's worst-performing pillar.

We have used a novel GEI, the PFB methodology, in which Luxembourg can increase its average GEI by ten points by targeting the weakest pillars. Only one bottleneck, start-up skills in Luxembourg, are in the business attitudes sub-index, based on the PFB analysis. This calls for 100% of the entire effort (business policy resources) to be directed in the start-up pillar to improve Luxembourg's GEI rankings by ten.

People in Luxembourg lack the skills to start a business. Studies indicate that more than three women in Luxembourg lack the skill to start a business, and this percentage is higher than the average rate in the E.U. At the same time, half of the men lack this skill, which is almost the same average in the European Union. While a third of the youth believed that they had the skills necessary to succeed in starting a new business, which is also less than the average of the E.U., according to the survey, fear constitutes an obstacle to establishing businesses for half of the population in Luxembourg, especially among young people, who reached 52.2%. To increase and develop entrepreneurship programs in Luxembourg, the responsible authorities in Luxembourg must adapt entrepreneurship programs that target various groups of society, especially with many immigrants. It should also facilitate access to entrepreneurial and support programs to enable aspiring entrepreneurs to create their businesses. Luxembourg should also focus on refugees by strengthening the entrepreneurial programs available to them and cooperating with NGOs to overcome obstacles such as the language barrier.

The GEI data used during the analysis are limited to the period 2012-2016. Therefore, further investigation must cover a more extended or more current period than the one used in the study. The scarcity of studies on entrepreneurship in Luxembourg is also one of the limitations of this study. Moreover, only Belgium and Estonia, and only at the pillar level, were comparable to the profile of Luxembourg. More comparison should therefore be made at all levels with different countries in Europe. GEI is also a good indicator for start-up companies to use.

In spite of its limited content, the paper helps to portray the entrepreneurial profile of Luxembourg through a unique index combining individual and institutional quality variables in one model. We contribute to the identification by the sub-index, pillars, and level of the variables of the weak aspect of the business profile of Luxembourg. The analysis in particular shows empirical evidence that there is a lack of population entrepreneurship as a reason for the modest performance. We have also used the PFB approach to highlight the bottlenecks in the country and offer approximate proposals on how much Luxembourg is trying to improve its bottleneck.

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Conflict of Interest

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Entrepreneurship ecosystem in the United Arab Emirates: An empirical comparison with Qatar and Saudi Arabia

Ayman Balawi

ABSTRACT

Objective: This paper aims to investigate and assess the UAE's overall entrepreneurship performance (ecosystem) by applying the Global Entrepreneurship Index (GEI).

Research Design & Methods: This paper assesses the United Arab Emirates' entrepreneurial ecosystem and compares it with Qatar and Saudi Arabia by using the Global Entrepreneurship Index (GEI) data collected between 2011 and 2016. The GEI approach is applied to measure the entrepreneurship ecosystem at the country level, and it constitutes an appropriate method to encourage a higher level of entrepreneurship by considering its quality aspects.

Findings: Outcomes show an entrepreneurial ecosystem with a GEI index of 44.6. Technology absorption is a critical bottleneck that suppresses entrepreneurial goals. Despite the low score of this pillar, the UAE has one of the highest GDP per capita among all participating countries. As a result, the GEI score of the United Arab Emirates and its sub-indices are above the global average trend and count to the most innovation-driven economies worldwide. However, the UAE is not performing well compared to other average performers in its category.

Implications & Recommendations: Crucial policy interferences are required for the improvement of technology absorption. UAE calls for 4% additional resources to expand the GEI score by 10%.

Contribution & Value Added: Using a novel approach incorporating individual and institutional variables into a single model, this paper identifies the weak aspects of UAE's entrepreneurial performance. Also, the utilisation of (PFB) is used to identify which entrepreneurial factors should be tackled.

Article type: research article

Keywords: entrepreneurship; entrepreneurship ecosystem; entrepreneurship performance; GEI; Persian Gulf; Arabian Peninsula, Qatar, Saudi Arabia, United Arab Emirates

JEL codes: O1, F02, L26

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INTRODUCTION

The United Arab Emirates (UAE) is well-known for being one of the most eye-catching places for investments in the world. It is one of the fastest rising economies in the region (the Arabian Peninsula, the Persian Gulf), and it has attracted significant investments, new firms, and entrepreneurs. An integrated system of regulations has achieved this inspiring accomplishment, commercial and labour laws, endorsed by the government to boost investments and projects and nurture a suitable environment for entrepreneurs and investors alike (Cummings, 2018; Hamdan, 2019). Before the exploration of oil in the mid-1950s, the Emirates' economy was predominantly driven by agriculture in oases, date palm trading, and fishing. At present, the UAE economy is highly dominated by extractive industries – including crude oil and natural gas (29.50%), wholesale and retail trade (11.70%), financial and insurance activities (8.60%), construction and building (8.40%). The UAE adopts economic diversification strategies, which have successfully boosted non-oil sectors' contribution to the

national economy, such as manufacturing, tourism, banking, trade, real estate, services, and renewable energy (UAE Portal, 2020).

Furthermore, the UAE takes concrete steps to upsurge these sectors' impact on the national economy to reach 80% in 2021. Thus, the oil industry's contribution is currently about 30% of GDP, compared to 79% in 1980 (UAE Portal, 2020). Based on that, the UAE has settled several strategies and plans in line with the best global practices in strategic planning and development. In 2010, the Emirates launched the UAE Vision 2021, which "sets the key themes for the Social and economic development of the UAE" – a vision that aims to make the UAE one of the best countries in the world. To achieve this goal, the country launched the "National Agenda", which includes key performance indicators (KPIs) that serve as a guide for the country in achieving its aspirations. These KPIs have been sectioned into six national pillars representing the six main sectors of fundamental interest of the UAE: Health, Security, Infrastructure, Education, Economy, and Housing. These indicators could be compared with other promising projects in the region, such as Saudi Vision 2030 (UAE Portal, 2020; Vision2021, 2019).

The Emirates' economy has experienced a significant transformation in the last ten years. The GDP has increased from 290 billion USD in 2010 to 414 billion USD in 2018, at an annual growth rate exceeding 9% during 2010-2018. Throughout these years, the country's focus was on establishing a differentiated economy, along with large-scale infrastructure development. As a result, economic growth has led to vital progress in its citizens' living standards and job opportunities for foreigners. To reinforce its position, the UAE has established a framework that is continuously adapting the highest international standards to meet the entrepreneurial community's requirements. These efforts have created a rich and attractive economic environment for investments, leading to many of the best regional companies setting up their headquarters in the UAE. Consequently, the UAE became a leading economic centre in the Middle East (Al Saiqal, Ryan & Parcero, 2018).

This paper aims to investigate and assess the UAE's overall entrepreneurship performance (entrepreneurial ecosystem) by utilizing the Global Entrepreneurship Index (GEI); this unique approach combines institutional and individual variables. We used this methodology to compare the UAE profile with the leading economies in the region (Qatar and Saudi Arabia). It the first paper that examines the UAE entrepreneurship development by using the GEI. Furthermore, this structure, in which we have been able to discern and understand the usage of this tool, helps us to recognise and understand the country's pros and cons and their influence on the economy. The results show that the entrepreneurial performance of the UAE is all above the global average trend, that put the country into the world's innovation-driven economies, where the UAE ranked 34th among the total of 95 countries in the index.

The paper is structured as follows. First, it shows an overview of the UAE situation, followed by a description of the Emirates' current performance regarding entrepreneurship profile and macroeconomics progress. After that, it summarises the concept of the GEI methodology and differentiates it over other entrepreneurship measurements. Fourth, it analyses the Emirates' overall GEI score by clarifying the three sub-index groups, the performance of the 14 pillars in comparison to other neighbouring countries, and the performance of the two main variables (individual vs institutional). The following section suggests policy recommendations to enhance the overall entrepreneurial performance in the UAE, while the closing section outlines a brief conclusion.

LITERATURE REVIEW

Entrepreneurship and small and medium-sized enterprises (SMEs) are one of the most important factors contributing to economic growth and employment in both developed and developing countries (Ubrežiová *et al.*, 2008) in various economies in the world (Wach, 2015; Lubbadeh, 2019; Szerb & Trumbull, 2018). Entrepreneurship development depends on both internal factors (traits of an entrepreneur) and external factors (business environment) (Wach & Głodowska, 2021; Głodowska *et al.*, 2016). Kahn (2016) underscores that the entrepreneurial ecosystem plays a crucial role especially in the Persian Gulf countries (Table 1). Similarly, Lane (2016) underlines the importance of the environment for entrepreneurship, innovation and creativity, especially in the context of university education.

Table 1. Isenberg's domains of the entrepreneurship ecosystem

Strategic domain		Support domain			Culture domain
Policy	**Human Capital**	**Markets**	**Finance**	**Support Services**	
Government Institutions: - Financial Support - Laws and rules, e.g. tax benefits - Developing research institutions - Business-friendly laws - Contract enforcement, - Labour rights	**Labour:** - Skilled and Unskilled - Serial Entrepreneurs - Colleges and Universities - Entrepreneurship Training	**Expertise:** Expert knowledge and information for dissemination to enterprise	**Micro loans:** Essential loans for the survival of micro-scale businesses that generate jobs	**Infrastructure:** - Telecoms - Transportation - Energy - Industrial zones - Incubators - Clusters	**Success Stories:** - Visible Success - Wealth generation - for founders - International - reputation
Leadership: - Clear support - Society support by recognizing the - SME/Micro business as viable and respectable work		**Networks:** - Personal networks of entrepreneurs - Diaspora networks around the markets - Multinational corporations	**Investment (by):** - Angel investors - Crowd Investors - Institutional Investors - Venture Capital - Private Equity - Pubic Capital - Markets	**Support Professions:** - Legal - Accounting - Investment - Advisors **Non-Government Institutions:** - Business planning contests - Conferences	**Societal Norms:** - Tolerance of Risks, Failures and mistakes - Innovation, Creativity and Experimentation - Social Status of Entrepreneur - Wealth Creation - Ambition, Drive, Hunger

Source: Rahatullah (2013) quoted in Kahn (2016).

In the UAE, entrepreneurship is not only linked with various benefits like job creation but promoting social and economic unity, which is vital to competition and productivity improvement, unlocking individual potential and producing jobs that offer a variety of choices to the citizens (Al Saiqal, Ryan & Parcero, 2018). From the entrepreneurial ecosystem point of view, the UAE has been working well to create a conducive environment for entrepreneurs, from a robust and broad official framework that protects both investors and entrepreneurs to establish policies that connect new firms with other private institutions and public sectors. These actions and drives, combined with fast improvements of the local economy, have converted the UAE into one of the first choices of destinations for entrepreneurs in the region (Hamdan, 2019). However, to view the nature of entrepreneurship in the UAE context, it is vital to consider the various individual characteristics and traits of Emirati Entrepreneurs. The Emirati entrepreneur profile is predominantly male, aged between 25 and 34, of higher income level, employed, and having at least some post-secondary education. The primary drive for 70% of Emiratis to launch a business is to expand personal income.

Furthermore, Emirati entrepreneurs have positive views about entrepreneurship and are very optimistic about entrepreneurial opportunities, but they are hesitant towards starting a business as they have a high level of fear of failure (Minhas, 2019; El-Sokari *et al.*, 2013). Due to intense rivalry, entrepreneurs in the UAE face problems investing their money in new business ideas. The fear of failure is mainly driven by lack of knowledge about government support, absence of business knowledge and weak skills, and undesirable perceptions of self-employment and risk-taking (Hameed *et al.*, 2016; OECD, 2013). On the other hand, Khalilov and Yi (2021) underscore the importance of studying the relationship between institutions and entrepreneurship. They found that compared with other countries, OECD countries have

more developed institutions and are considered the best entrepreneurial countries. Furthermore, a society with developed business activities is having a positive impact on the situation of entrepreneurs. In addition, due to its innovative nature, entrepreneurship has been a key driver of economic growth. Also, human capital provides sustainable economic growth as a key source of innovation.

RESEARCH METHODOLOGY

Ács *et al.* (2014) introduced the Global Entrepreneurship Index (GEI), it is one of the most renowned measures associated with entrepreneurship and economic development. GEI is a complex health indicator of the entrepreneurial ecosystem in a particular country. It has been established to measure entrepreneurship at the country level. Moreover, GEI offers four unique advantages over other entrepreneurship ecosystem measurements. First, GEI is a proper measure that considers the quality aspects of entrepreneurship over the quantity-based approach. Second, it considers both the individual and institutional aspects of entrepreneurship and various entrepreneurship elements that interact to make an entrepreneurial ecosystem. Third, GEI addresses the 14 pillars as the integrated entrepreneurship elements, not as independent elements. Fourth, GEI provides the entrepreneurship policy point of view through equalising/normalising the same marginal effect for the averages 14 pillars values, and it considers the weakest or bottleneck pillars in the system. (Szerb *et al.*, 2018). However, GEI has some limitations in terms of accessing data, since part of the data source is based on GEM indicators that are only partially publicly available; also, other institutional indicators (13 out of 24 indicators) that GEI applied are coming from the World Economic Forum (WEF) which are not available anymore (GEM, 2018; Ács *et al.*, 2018).

Szerb and Trumbull (2018) argue that the GEI's capability to assess the holistic entrepreneurship ecosystem makes it superior. In its structure, GEI comprises the three main sub-indexes; entrepreneurial attitudes (ATT), entrepreneurial abilities (ABT), and entrepreneurial aspiration (ASP). Each Sub-index consists of 4-5 pillars (14 pillars altogether), and each one of these pillars includes both institutional and individual variables that represent all environmental characteristics of entrepreneurship. The pillars are the basic building blocks of the sub-indices, and the value of a sub-index for a given country is the simple average of its penalty for bottleneck (PFB) adjusted pillars for that sub-index multiplied by 100. Then GEI, the super-index, is just the three sub-indices' average (Szerb *et al.*, 2016). While the previously mentioned measures consider mostly individual variables, the GEI combines individual data with contextual institutional factors. Thus, we can get a precise representation of the ecosystem by using both institutional and individual variables.

Moreover, by measuring all pillars and analysing the three sub-indexes (ATT, ABT, ASP) on institutional and individual variables, the GEI eventually offers the PFB methodology to provide recommended policy directions for participating countries. In the PFB methodology, a bottleneck is defined as the weakest link in the national entrepreneurial dynamic; in other words, it is simply the weakest performing pillar. The PFB will be higher if there are bigger differences among the entrepreneurship variables. Therefore, the PFB will be optimised by normalising the values of all index elements, the value of each element is "penalised" by associating it to the score of the indicator with the weakest performance in each country. This simulates the bottleneck concept; if the bottleneck component is optimised, the particular sub-index and, ultimately, the GEI index will demonstrate a significant improvement. Hence, using the PFB method makes it possible to determine the bottleneck factor that deters system performance, therefore assisting policymakers in deciding how policy resources should be allocated. Policies must continuously seek to handle the most poorly performing pillars first (Ács *et al.*, 2018).

Further, the GEI index provides countries that want to develop entrepreneurship with the necessary policy tools. Even though the GEI policy framework is limited in prescribing interventions in the complex policy environment, it provides pointers that indicate existing bottlenecks. According to Szerb *et al.* (2016), this limitation comes from the fact that the GEI index only measures the national system of entrepreneurship partially. Dealing with these bottlenecks cannot be achieved with universal tools, but in-depth engagement with local policymakers and implementers is ideal (Szerb *et al.*, 2016).

RESULTS AND DISCUSSION

Entrepreneurship and Small Business in the United Arab Emirates

This section aims to provide a brief review of the entrepreneurial situation of UAE, summarizing the country's place in popular entrepreneurship, business, economy, and society-related international rankings.

Small and medium-sized enterprises (SMEs) are considered the backbone of the UAE's economy, accounting for 94% of all business in the country, which in turn employ 43% of the labor force. The UAE pays great attention to improving and supporting the performance of SMEs and facilitating their work environment. Additionally, SMEs are considered the core for economic growth and a vigorous supporter of the Emirates' GDP. In fact, their contribution to the Emirates' GDP is around 53% (SMEs Report, 2019). However, UAE SMEs' competitiveness is lower than that of their counterparts, such as South Korea and Singapore, driven by low technology adoption needed to improve its services and competencies. SMEs also need to develop their overall corporate governance, particularly financial governance and transparency, to run in international markets and appeal to investors. There is still a lot to be done in the SMEs sector of UAE in enhancing the innovative environment for businesses to flourish and produce new goods and services and gain new market shares (SMEs Report, 2019; UAE Portal, 2020).

One of the most well-known rankings of entrepreneurship for countries is the Ease of Doing Business (EDB). UAE seems to perform very well in EDB. According to the World Bank (2019b), 50% of the adult population has an intention to start a new business within the coming three years, which positions the UAE first among the 190 participating countries. However, only 3.5% of the adult population has truly pursued a new business. Moreover, the UAE was ranked 1st among the Arab countries and 11th internationally, due to facilities provided by the Emirate's government in terms of ease of paying taxes, issuing building licenses, property registration, getting electricity, and an improved online system for registering a business (UAE Portal, 2020). It is also among the most developing countries in EDB; this makes the UAE an entrepreneurial leader among the Arabian Gulf countries and the Middle East region in general. In fact, the UAE has a promising opportunity to progress among innovation-driven economies (World Economic Forum, 2018).

On average, the UAE's self-employment stands at 3.9% compared to its neighbours, Saudi Arabia (Kingdom of Saudi Arabia, KSA) and Oman, record 4.8% and 3.4%, respectively. It's much lower than the 30.58% Arab countries average, having shown slight improvement over the past five years. However, females are less active than males in self-employment at 3.6% (World Bank, 2019a). The other popular ranking is the Global Competitiveness Index (GCI), where UAE ranked the UAE first in the Middle East and 25th worldwide, with its better ranking achieved in 2010 (23rd). The UAE witnessed substantial improvements in ICT adoption (2nd globally) and skills (39th) and was ranked first among the top 32 economies in a stable macroeconomic environment. Further, improvements in education and skills are required to boost the human capital required to drive innovation in the country (World Economic Forum, 2019).

This composite index is part of the Global Competitiveness Report issued by the World Economic Forum and reflects several areas such as ICT adoption, human capital, innovation capability, macroeconomic stability, and business dynamism (World Economic Forum, 2019).

Lastly, Regarding the Human Development Index (HDI), the UAE rates pretty high with 35th place out of 189 participating countries encompassed in the report, and this sits UAE among very high human development class. However, UAE stills below the average of countries in the very high human development group. This index categories countries based on several indicators such as work, employment, education, usage of technology and communication, and trades and financial flows (UNDP, 2019).

Entrepreneurship ecosystem in the United Arab Emirates

According to GEI overall average score between 2012-2016, the UAE ranked 34th among the 95 listed countries with a GEI index of 44.6, with only one other Arab Gulf country Qatar (55.4), performing in the first-class group of countries, while Saudi Arabia in a latter class (40.2) (GEI, 2018). Also, the UAE's GEI score is far above the world average trend line. The 14 pillars in Table 2 offer a chance to realise how the

Emirates' entrepreneurial ecosystem interacts. Generally, the ecosystem shows unequal performance. Start-up Skills (0.29) and Technology Absorption (0.18) are the sole pillars with a value below 0.30. All the pillars of the entrepreneurial aspiration sub-index show that the UAE is among the top-performing category of countries. It reflects that the country provides an adequate supporting environment for entrepreneurs to introduce new products or processes, connect international markets, and finance their business with venture capitals, which are crucial for pioneering start-ups (Ács *et al.*,2018).

Table 2. UAE's entrepreneurial profile at sub-indexes and pillars level between 2012-2016

Sub-indexes	PILLARS	Score
Entrepreneurial Attitudes (ATT)	Opportunity Perception	0.35
	Start-up skills	0.29
	Risk Acceptance	0.32
	Networking	1.0
	Cultural Support	0.84
	ATT	**40.4**
Entrepreneurial Abilities (ABT)	Opportunity Startup	0.60
	Technology Absorption	0.18
	Human Capital	0.87
	Competition	0.47
	ABT	**35.1**
Entrepreneurial Aspirations (ASB)	Product Innovation	1.0
	Process Innovation	0.63
	High Growth	0.90
	Internationalization	0.90
	Risk Capital	0.98
	ASB	**58.5**
	GEI	**44.6**

Source: own established based on GEI Dataset, 2012-2016.

Technology Absorption is a vital issue with a score less than 0.20, it's evident to be the main bottleneck in the Emirates' entrepreneurial ecosystem, tailed by Startup Skills (0.29). Nevertheless, the UAE's overall performance is doing very well on the rest of pillars, and shortages in "Technology Absorption" and "Startup Skills" are probably to hinder the country's development in employing new opportunities, thus indicating that the country does not provide enough capacity for technology assimilation. Proposing that an investment in entrepreneurship practices and research competence might make additional developments in entrepreneurial achievement.

Table 3 displays additional analysis for the individual and institutional variables of GEI sub-indices. Generally, the Table presents unstable performance between individual and institutional variables in the Emirates' entrepreneurial ecosystem, where all institutional variables perform quite well, compared to individual variables that are witnessing major problems, mostly in the first two Sub-indexes. Overall institutional score (0.75) is mostly strong, with 7 out of 14 variables among the top 25% of the countries, and 4 variables among the third quartile of the countries. On the contrary, the least performing variables are Country Risk (0.61), Economic complexity (0.47), and education (0.41). However, Technology Transfer (1.0) ranks at best among the top 25% of countries, which indicates that the business setting in the UAE endorses the use of innovation for emerging new products (Ács *et al.*, 2018).

Among individual variables in all sub-indices, the UAE has global leading results in "Human Capital", "Risk Capital", and "High Growth". For these pillars, the UAE's performance is almost optimal, which indicates its financial prosperity and the top resources of Human Capital. The UAE's situation as a vital trading center certainly delivers to superior scores of High growth and Internationalisation in this country. Overall, The UAE reveals a high rate of "Entrepreneurial Aspirations" and medium rates of "Entrepreneurial Abilities and Attitudes". As a result of this, UAE has a lower GEI score than it should be compared with other innovation-driven countries.

Table 3. The Emirates' GEI Institutional and Individual Variables for 2020-1016

PILLARS		INSTITUTIONAL VARIABLES		INDIVIDUAL VARIABLES	
Opportunity Perception	0.35	Freedom	0.62	Opportunity Recognition	0.39
Start-up skills	0.29	Education	0.41	Skill Perception	0.67
Risk Acceptance	0.32	Country Risk	0.61	Risk Perception	0.34
Networking	1.0	Connectivity	0.98	Know Entrepreneurs	0.97
Cultural Support	0.84	Corruption	0.74	Career Status	0.86
ATT	**40.4**	–	–	–	–
Opportunity Startup	0.60	Governance	0.85	Opportunity Motivation	0.37
Technology Absorption	0.18	Technology Absorption	0.88	Technology Level	0.00
Human Capital	0.87	Labor Market	0.90	Educational Level	0.83
Competition	0.47	Competitiveness and Regulation	0.82	Competitors	0.34
ABT	**35.1**	–	–	–	–
Product Innovation	1.0	Technology Transfer	1.00	New Product	0.81
Process Innovation	0.63	Science	0.63	New Technology	0.91
High Growth	0.90	Finance and strategy	0.95	Gazelle	0.75
Internationalization	0.90	Economic complexity	0.47	Export	1.0
Risk Capital	0.98	Depth of Capital Market	0.70	Informal Investment	1.0
ASB	**58.5**	–(Lubbadeh, 2019)	–	–	–
GEI	**44.6**	**Institutional**	**0.75**	**Individual**	**0.66**

Note: white: best 25%; light grey: best 50%; dark grey: worst 50%; most shaded grey: worst 25%.
Source: own elaboration source: based on GEI data 2012-2016 averages.

Even though the UAE technological absorption, which refers to acquisition, development, assimilation, and utilisation of technological knowledge and capability, is high at institutional level, the technology level that indicates technological sophistication at the firm level is not yet remarkable. It indicates the presence of very few new businesses or less percentage of start-ups in the technology sector. Getting a very low score in this variable is mainly because Emirates are not sufficiently educated and trained on the latest technologies and skills to start their own business (Hamdan, 2019; OECD, 2013). It could also be attributed to the lack of innovative and risk-taking people (Minhas, 2019; Hameed *et al.*, 2016; OECD, 2013; Lubbadeh, 2019).

A high level of risk-aversion is not surprising; it may have deeper cultural reasons at a national level, if we look at the UAE's relatively high uncertainty avoidance score of 80, which – along with the other cultural dimensions shown in Figure 1 (power distance, individualism, masculinity) – go hand in hand with the characteristics of the "Emirati entrepreneur profile" described by Minhas (2019), El-Sokari *et al.* (2013) and (OECD, 2013).

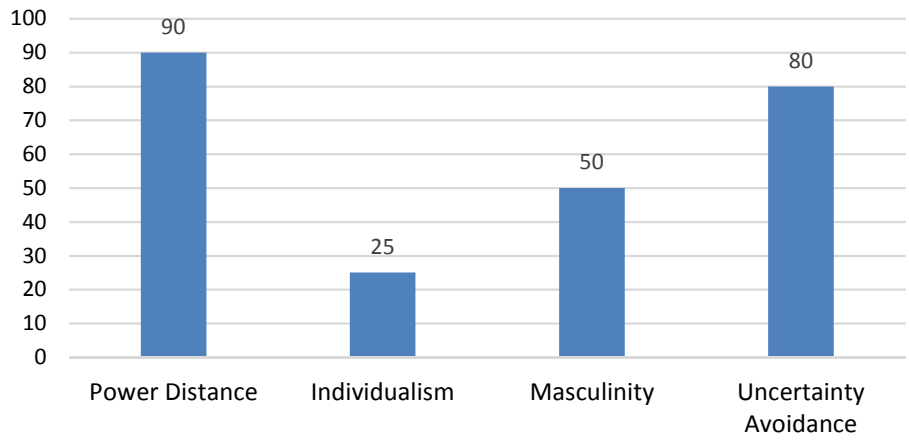

Figure 1. Hofstede's Cultural Dimensions in the UAE
Source: own elaboration based on Hofstede Insights (2020).

Minhas (2019) associates the problem of this variable with the necessity for the proper environment that focuses on entrepreneurship education for individuals as the requirement to implement their business. There is also a large gap, presently, between entrepreneurial intentions and implementation in UAE, which is due to the continuing changes in rules, economic situation, rivalry, globalisation, innovation, financial barriers, and practices that make it more challenging for people to execute their intentions (Minhas, 2019; OECD, 2013).

The lack of the other variables can be attributed to several reasons; one of them is that the UAE population cannot recognise opportunities to begin a new business, and the institutional atmosphere does not promote these opportunities. The second one is that Emirati people are risk-averse; they are not enthusiastic about establishing a business due to the risky environment in the UAE because of instability in oil prices, reduction in the tourism stream, and restricted flexibility of the financial policy – this could be associated to the poor performance in risk perception (Global Edge, 2019).

It is essential to note that "Opportunity perceptions" which is one of the components of "opportunity start-up" is considered weak, which interprets that entrepreneurs are driven by necessity entrepreneurship, where the government does not make adequate actions or regulations to motivate entrepreneurs to start businesses. Therefore, it is vital to recognise what future entrepreneurs need out of their businesses, specifically, the aspiration to raise and scale up to the global level (Ács *et al.*, 2018; Minhas, 2019).

Comparing Emirates' Entrepreneurial performance to Saudi Arabia and Qatar

Figure 2 compares the UAE to its neighbouring countries, Saudi Arabia, and Qatar. These countries also belong to the Arab States of the Persian Gulf, intending to enable and develop the economy between the Gulf members and across the globe. The major fields include the collaboration of policies and trade investment (UAE Portal, 2020). In the Gulf region, only the UAE and Qatar are categorised as innovation-driven countries, whereas Saudi Arabia is an efficiency-driven economy.

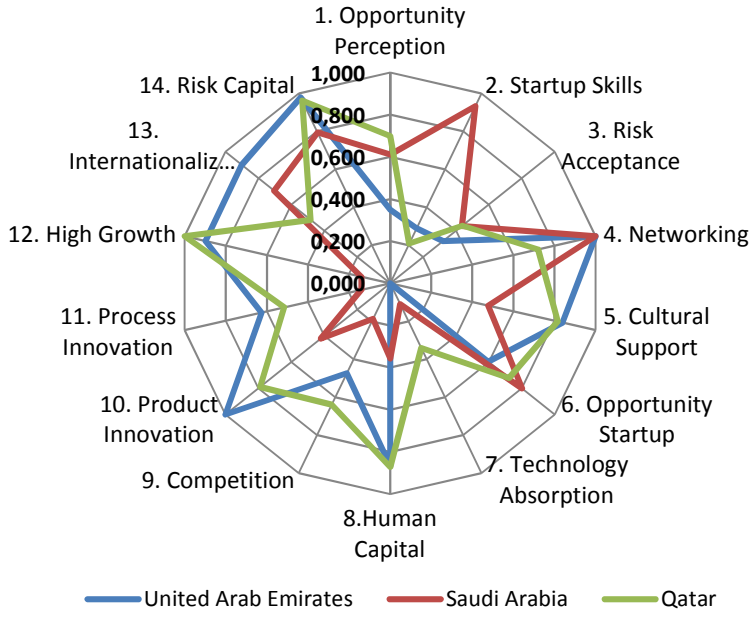

Figure 2. Pillar level compression of the UAE, Saudi Arabia, and Qatar for 2012-2016
Source: own elaboration based on GEI 2012-2016 dataset.

We can see in Figure 2 that the UAE and Qatar are the highest achievers in the Gulf region. They are also the top achievers internationally for several pillars, particularly Risk Capital, High Growth, and Human Capital. However, all three countries still face a significant bottleneck in Technology Absorption and Risk Acceptance, indicating that the technology sector in these countries does not have enough capacity for businesses to absorb new technologies rapidly, and the situation in these countries is relatively at high risk and individuals are not ready to take the risk for establishing businesses (Ács *et al.*, 2018).

Enhancing Entrepreneurship in the UAE: A Simulation

Analysis of this paper shows a specific bottleneck that requires intervention from the Emirates' government to make its entrepreneurial ecosystem conducive and enable entrepreneurs to achieve better performance in domestic and international markets.

Therefore, it is crucial to figure out the bottleneck pillars that hamper the government's endeavours in this area and make policy priorities. With the GEI penalty support for bottlenecks (PFB) methodology, the country can easily single out the bottleneck or the weakest pillars. Table 4 depicts the bottleneck variable of UAE and required efforts by the government to increase its GEI.

Table 4. reveals that policymakers need to dedicate their efforts to one pillar, "Technology Absorption", to boost the country's GEI score by 10%. It is the major persistent bottleneck that demands 100% of the effort. As pointed out by the World Bank (2011), a more excellent technology absorption could "raise a country's economic productivity and strengthen growth competitiveness to gain ground in the global market". Furthermore, Yi *et al.* (2019) stated that technology absorption could be driven by universities, scientific research institutions, governments, and technology service agencies. Moreover, the World Bank (2011) proposed public policies and policy actions to improve nurturing technology absorption within a country.

Table 4. Simulation of maximising UAE GEI index average by 10 points for 2012-2016

"Sub-indexes new score"	PILLARS		Required Increase in pillar	Percentage of the total new effort
Entrepreneurial Attitudes	Opportunity Perception		0.0	0%
	Start-up skills		0.0	0%
	Risk Acceptance		0.0	0%
	Networking		0.0	0%
	Cultural Support		0.0	0%
	ATT	**40.4**		
Entrepreneurial Abilities	Opportunity start-up		0.0	0%
	Technology Absorption		0.09	100%
	Human Capital		0.0	0%
	Competition		0.0	0%
	ABT	**35.1**		
Entrepreneurial Aspirations	Product Innovation		0.0	0%
	Process Innovation		0.0	0%
	High Growth		0.0	0%
	Internationalisation		0.0	0%
	Risk Capital		0.0	0%
	ASB	**58.2**		
	GEI	**44.6**		

Source: own calculations based on GEI index data 2012-2016 averages.

In general, public policy should first focus on getting the basics right – through fostering entrepreneurship, improving the investment climate, and strengthening competition. Since technology absorption and economic growth are strongly connected (Hamdan, 2019; Goldberg & Kuriakose, 2011), the public policy of the UAE should provide a framework to increase technology absorption that focuses on investment climate and technology absorption capacity through training and education by targeting post-secondary schools and the labour force. Therefore, to harness all benefits of bolstering technology absorption, the UAE government needs to engage universities, scientific research institutions, enterprises, and technology intermediary service agencies in the process.

CONCLUSIONS

This paper aimed to examine the entrepreneurship ecosystem of the UAE, Qatar, and Saudi Arabia by using the Global Entrepreneurship Index (GEI). The GEI proposes the multidimensional explanation of entrepreneurship by joining individual and institutional aspects to identify the ecosystem's weaknesses and strengths. The Penalty for Bottleneck (PFB) methodology helped us detect the country's worst-performing pillars (Technology Absorption) and recommend policy suggestions. Overall, the UAE ranked 34th, with 44.6 GEI scores, among 95 countries in the index. Among other Arab Gulf countries, the UAE's GEI index was relatively higher, except Qatar, which scored 55.4. The GEI score of the United Arab Emirates and its sub-indices are all above the global average trend, and it lets the country count to the world's innovation-driven economies. As for the analysis of the 14 pillars: The UAE performs strongest in 7 of the 14 GEI pillars, which places the country among the top countries in its category. However, its overall GEI performance is hampered by its weakest bottleneck pillar – "technology absorption" – under the entrepreneurial ability sub-index. Moreover, the level of GEI performance varies between institutional variables and individual variables. UAE performs much better in institutional variables than individual variables. Especially the individual variables within the Entrepreneurial Abilities sub-index, namely: opportunity motivation, technology level, and competitors, are the main problem areas that need the utmost attention from the government to strengthen the country's overall entrepreneurial abilities.

Moreover, the UAE's has a relatively higher GEI index in comparison with other Arab Gulf countries. Finally, we have used a particular feature of the GEI, the PFB bottleneck technique, to simulate the country position to boost its effectiveness by allocating more opportunities for advancing the entrepreneurship level in the UAE. The simulation indicates that the UAE should dedicate its resources on technology absorption to elevate its performance. UAE ranked 34th, with 44.6 GEI scores, among the total of 95 countries in the index. Hence, we were able to deliver a comprehensive and multidimensional picture regarding the entrepreneurial performance in the UAE. Further to that, creating policy recommendations can assist in escalating its entrepreneurship performance by directing the most susceptible connection in the system.

Comparing the UAE's performance to the other two countries (Qatar and Saudi Arabia) in the region showed noteworthy results. UAE is leading in Internationalisation and Product Innovation. Risk capital, high growth, and human capital are the best performing pillars in both the UAE and Qatar, whereas process innovation and high growth pillars are the worst in the Saudi Arabia, and start-up skill is the worst performing pillar in Qatar. However, all three countries are still facing a significant bottleneck in technology absorption and risk acceptance. Overall, the UAE is not performing well compared to other average performers in its category of innovation-driven economies. In conclusion, there is a necessity for policy involvement to handle the present bottlenecks, mainly to improve technology absorption. Lastly, the UAE government has to make more effort in technology absorption, as the country calls for 0.09 extra resources (100% new effort allocation) to enhance the GEI score by 10%, which implies that the UAE needs to apply a variety of improvements to boost the entrepreneurship ecosystem.

As a constraint, the GEI data used in the study only cover the 2012-2016 period. Hence further analyses are vital to cover a longer or more up-to-date timeframe than the period used in the trial, mainly if there are changes in government policies after that period. We contribute to recognizing the vulnerability in the entrepreneurial profile of UAE in the sub-indexes, pillars, and component variables. In particular, the study reveals observational evidence of a lack of entrepreneurship in the population as the basis for moderate success. Besides, we employed the PFB approach to underline the country's bottlenecks and offer estimated recommendations about how UAE could improve its bottleneck.

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Conflict of Interest

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Sustainable development start-ups as a new category of enterprises in Poland

Aleksandra Stanek-Kowalczyk

ABSTRACT

Objective: The objective of the article is to review entities operating in Poland on the basis of sustainable business models in order to determine the scale and development potential for this phenomenon and to define the profile of this type of enterprises operating in Poland.

Research Design & Methods: The study was based on a desk research analysis divided into two phases: Part one: creation of a picture of the positive impact start-up market, taking into account the following data: establishment year of the enterprise, the city, in which the business is registered, the industry, in which the company operates, type of activity. Part two: creation of a picture of the positive impact start-up market in terms of the use of new technologies. Source of data: the database of Positive Impact Start-ups, prepared and published by Koźmiński Business Hub, which is the only list of enterprises operating in Poland based on sustainable business models.

Findings: Based on the analysed data, a profile of a Positive Impact Start-up was created with the most typical characteristics of this type of enterprise. A profile is a set of features that are most frequent within each analysed category.

Implications & Recommendations: The study describes a new type of enterprises in Poland, including the scale of development of such type of enterprises and their characteristics. That can help the policy-makers in proper definition of business landscape in Poland – both today and in a near future – and defining the regulatory needs of such type of enterprises.

Contribution & Value Added: The study contributes to the literature on the sustainable business models, by analysing the development and characteristics of sustainable business model based enterprises operating in Poland, as well as defining the profile of such enterprise operating in Poland.

Article type: research article

Keywords: start-ups; sustainable business model; sustainability; entrepreneurship; innovation

JEL codes: M13, M14, Q56

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INTRODUCTION

The pace of changes in the economic environment forces organizations to constantly search for new solutions and implement business innovation models, considered to be a source of competitive advantage. These include innovations implemented as part of individual elements of the business models, but also interactions between them. Innovations allow to strategically integrate sustainable development into business models. Due to the growing importance of the subject of sustainable development and the more frequent incorporation of environmental and social aspects into business models, a new concept of sustainable business model (SBM) has emerged. Sustainable business models are considered as a form of innovative business models and involve the reduction of negative impact and generation of various benefits (Yip & Bocken, 2018). The value proposition includes measurable social, environmental

and economic values (Boons & Lüdeke-Freund, 2013), and is based on capitals other than just the financial one, that can affect enterprise's performance and its development (Le Trinh, 2019).

The functioning of enterprises based on sustainable business models in Poland had not been the subject of empirical research until 2019. There had been no analyses of the scale of this phenomenon and the characteristics of entities operating in Poland and based on business models that take into account social and environmental aspects. In 2019, Koźmiński Business Hub published the *Positive impact start-ups report. Radical social innovation* (Rok *et al.*, 2019) along with a database of enterprises using sustainable business models.

The purpose of the research is to review entities operating in Poland on the basis of sustainable business models in order to determine the scale and development potential for this phenomenon and to define the profile of this type of enterprises operating in Poland by searching for answers to the following questions:

RQ1: What is the average age of enterprises operating on the basis of sustainable business models?

RQ2: In which city enterprises operating on the basis of sustainable business models are most often established?

RQ3: In which industry enterprises operating on the basis of sustainable business models are most often established?

RQ4: Do enterprises operating on the basis of sustainable business models use new technologies?

The research was conducted based on the analysis of existing data from the database of Positive Impact Start-ups, prepared and published by Koźmiński Business Hub - the only list of enterprises operating in Poland based on sustainable business models. The data were analysed using descriptive statistics methods, and the results of the analyses were presented in the form of column charts.

The article begins with literature review containing review of the literature on sustainable business models as a new type of business models then the methodology applied to the study was presented, results of the study and conclusions as well as areas for further research.

LITERATURE REVIEW

Evolving Concept of Sustainable Development

The concept of sustainable development has been used in both academic and business discourse for several dozen year. According to some scientists, it has its roots in the environmental ideology (Balbinot & Borim-De-Souza, 2012; Lélé, 1991), while others see the origins of the concept in the 1987 report of the World Commission on Environment and Development (WCED), entitled *Our Common Future*, which defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 16). The proposed definition includes two main factors related to sustainable development: needs and restrictions. It stresses the need to meet people's basic needs, especially the weaker ones, while at the same time emphasizing the restrictions related to the limited availability of resources. Skowroński (2006) renders this definition more precise by adding that the mechanism of sustainable development comes down to the achievement of three basic goals: economic (related to satisfying the basic material needs, with the use of technologies that do not have a negative impact on the environment), ecological (related to preventing environmental degradation, as well as social and humanitarian (related to the provision of basic social needs of people).

Regardless of its origin and definition, sustainable development had initially been developed as a macroeconomic concept. Over time, however, it came to be used also in relation to business organizations (Stanek-Kowalczyk, 2012). In 1998, John Elkington introduced the concept of Triple Bottom Line, which assumes that organizations should focus on integrating their impact on the environment in terms of the social, environmental and economic aspects (Elkington, 1998). The suggested approach stands in opposition to the classical concepts and approach that views enterprises as organizations whose task is to focus on generating profit. It has added a new dimension to the understanding of sustainable development, on the basis of which the concept of corporate sustainability appeared in

the literature as a response to a number of challenges brought by the 20th century, such as: globalization, social injustice or environmental degradation (Christofi *et al.*, 2012).

Although the very concept of sustainable development and its scope have been the subject of discussions and scientific publications, there is no single understanding of this term, which, in addition, is constantly evolving (Kagawa, 2007). Numerous definitions and approaches to this subject differ also in terms of their subject matter (Sheehan *et al.*, 2014).

Sustainable Business Models

The concept of the business model has been discussed in the literature since the 1990s. Business models help to explain how a company creates and maintains value (Battistella *et al.*, 2017; Chesbrough, 2007; Foss & Saebi, 2017; Zott *et al.,* 2011). Teece (2010) defines it as a way in which organizations transform their resources and competences into economic value, while Boons and Lüdeke-Freund (2013) explain it is a link between a given enterprise and the wider production and consumption system, in which it operates. Osterwalder and Pigneur view business models as a set of specific elements (Osterwalder & Pigneur, 2010), while Zott and Amit (2011) present an action perspective, where the model includes a selection of actions ("what"), the structure of the system of actions ("how"), as well as information about who undertakes the actions ("who").

Each business model is specific to a given company due to the dependencies and relationships between the various elements of its value chain. Such an approach does not preclude the existence of a set of specific standard elements that can be adapted to a particular organization, according to its needs and nature. Examples of standard element sets include the Business Model Canvas, made up of 9 elements, on the basis of which one can build and adapt business models to any organization, and a simplified business model diagram with three main elements: value proposition, creation, delivery, and maintenance (Figure 1).

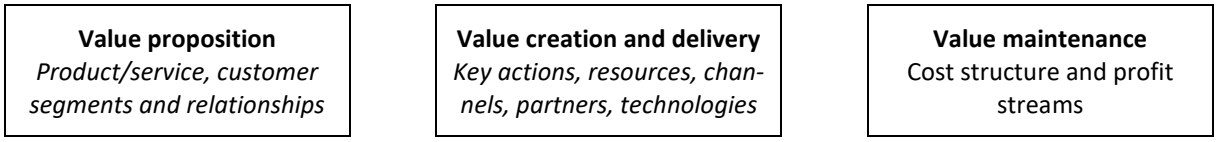


Figure 1. Simplified diagram of the business model
Source: Bocken *et al.* (2014, s. 143) based on Richardson (2008) and Osterwalder *et al.* (2005).

The pace of changes in the economic environment forces organizations to constantly search for new solutions and implement business innovation models, which are considered a source of competitive advantage. These include innovations implemented as part of individual elements of the business models, but also interactions between them. Innovations allow to strategically integrate sustainable development into business models. If enterprises are to fully contribute to sustainable development it is not enough to undertake non-strategic partial actions as part of selected business functions, but it is also necessary to redefine the concept of business models, incorporating into them social and environmental aspects (Reinhardt *et al.*, 2019). That will allow for a sustainable growth (Wach, 2020). Taking into account the changes in the socio-economic environment, including the challenges related to sustainable development, companies' approaches to value creation should best be analysed in the context of tri-profit value, namely social, environmental and business benefits, where the concept of value has a wider definition than mere profit (Bradley *et al.*, 2020; Press *et al.*, 2020).

Due to the growing importance of the subject of sustainable development and the more frequent incorporation of environmental and social aspects into business models, a new concept of sustainable business model (SBM) has emerged. The last ten years have seen the development of an approach based on sustainable business models (Reinhardt *et al.*, 2019) as well as research on how businesses incorporate such models into their operations (Press *et al.*, 2020).

Sustainable business models are considered as a form of innovative business models and involve the reduction of negative impact and generation of various benefits (Yip & Bocken, 2018). Social and environmental aspects make it possible to find new market niches, new markets for products and services,

and to support the brand or increase the company's market value (Galpin *et al.,* 2015). In a sustainable business model the value proposition includes measurable social, environmental and economic values (Boons & Lüdeke-Freund, 2013), which is why it can be a useful scheme for changing the system of an organization and is of key importance in terms of creating opportunities for enterprises to take up the global challenges related to sustainable development. It is also considered as a potent lever, capable of changing the global business system (Prendeville & Bocken, 2017). It focuses on conducting business activities in a new way that disrupts the existing rules of competitiveness and can be the foundation for creating new business models and a new approach to value creation (Yip & Bocken, 2018).

The lack of a single, consistent definition of sustainable development results in the lack of a standard approach to measuring and implementing this concept (Smith & Sharicz, 2011), and thus the lack of a single, standard sustainable business model. Press, Robert and Maillefert define such models as those that aim at operating in a more sustainable way and create more sustainable solutions. While based on business models, they also take into account possible negative social and environmental impact of the actions taken, opting for more sustainable solutions (Press *et al.*, 2020). Rafiei and Ricardez-Sandoval claim that sustainable enterprises should strive at protecting nature and people, without sacrificing economic efficiency and innovation (Rafiei & Ricardez-Sandoval, 2020). This view emphasizes that companies based on sustainable business models are still enterprises operating for profit. What is different is that in conventional business models, profit is the only goal of the business activity, while sustainable models add to the economic aspect also social and environmental dimensions.

In their suggested definition of a sustainable business model, Schaltegger *et al.* (2016) refer to a simplified scheme of a business model based on three elements related to value creation and maintenance (see Figure 2), stating that a sustainable business model helps to analyse, describe, manage and communicate the organization's business model, which – apart from creating economic values – serves to create and deliver social and environmental values as well.

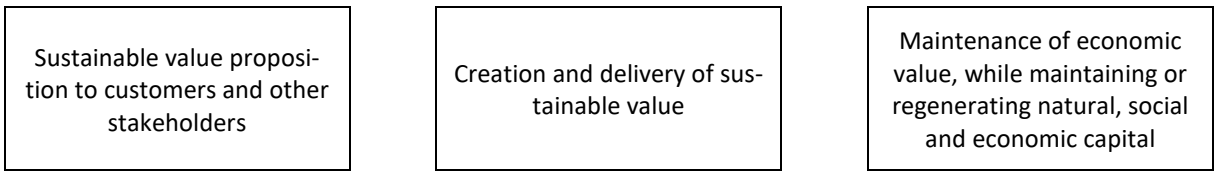


Figure 2. Simplified diagram of a sustainable business model
Source: adapted from Schaltegger, Hansen, and Ludeke-Freund (2016).

According to Reinhardt *et al.*, the concept of a sustainable business model reflects an approach that integrates the foundations of sustainable development with conventional business models and modifies them in order to create economic, social and environmental values *(Reinhardt et al.*, 2019), which is in line with the approach proposed by Schaltegger *et al.* (2016). Marioka, Evans and Carvalho, in turn, propose an approach based on the Schaltegger model, in which they indicate the dimensions that should be analysed in relation to the three elements of the sustainable business model. These include (Morioka *et al.*, 2016, p. 662):

- stakeholder satisfaction,
- strategic motivation,
- business processes,
- possibilities,
- stakeholders' contribution.

The suggested approach allows to determine whether the model is implemented – on the one hand – in line with the key elements of the business model, and – on the other – in line with the key processes.

According to Bocken (2013; 2014; 2016), the concept of a sustainable business model redefines the role of enterprises and their importance for the society and the environment. The definition proposed by the author goes a step further than the earlier definitions, which indicated the social

and environmental goals as equivalent to the economic one. Bocken argues that providing business and social benefits should be prioritized over economic profits (e.g. value for investors). These goals should be achieved through integration and cooperation with local communities, as well as other stakeholder groups, which, as the author indicates, represents a change in comparison to conventional business models, in which the customer was the main beneficiary of the company's business operations (Bocken *et al.*, 2014). Bocken proposes 8 subcategories for sustainable business models, called archetypes. These include (Bocken *et al.*, 2014, p. 48):

1. maximise material and energy efficiency,
2. create value from 'waste',
3. substitute with renewables and natural processes,
4. deliver functionality, rather than ownership,
5. adopt a stewardship role,
6. encourage sufficiency,
7. re-purpose the business for society/environment,
8. develop scale-up solutions.

The above-mentioned archetypes are diverse in terms of the scope and type of proposed actions and relate to both the entire business model of the organization as well as its selected elements or processes. For instance, "creating value from waste" focuses on how a product is made, "adopting a stewardship role" refers to an approach to business management, while "maximising material and energy efficiency" concerns the processes in the organization. Viciunaite and Alfne (2020) point out that most of the archetypes proposed by Bocken focus on the production system and little attention is paid to the consumption system.

Selected Economic Concepts as the Basis of Sustainable Business Models

The source and foundation for creating sustainable business models can be broader economic concepts based on the assumptions of sustainable development, such as, for example, circular economy.

Circular economy represents a transition from a linear model based on the production of a product, its use and disposal, to a circular model under which products are returned to use in various forms. This approach is aimed not only at extending the life cycle of products, but – above all – at reducing waste generation (*Euroactiv.pl*, 2018). Business models based on circular economy not only create sustainable value and support proactive multi-stakeholder management in the long run, but also slow down, reduce and close the resources gap (Bocken *et al.*, 2016).

Among the important economic concepts that are based on new technologies and are considered to be the basis of sustainable business models, there is also the concept of sharing economy. The sharing economy addresses the need for efficient access and use of resources. According to McKinsey's report, an average European car remains parked 92% of the time, average office space in Europe is used 35-50% of the time and 31% of food is wasted along the entire value chain (Ellen MacArthur Foundation & McKinsey Center for Business and Environment, 2015).

The concept of temporary access to services is not new. It had already been mentioned in literature 20 years ago as part of the servilization concept, where the sharing economy was diagnosed as a subsystem of this concept (Ciulli & Kolk, 2019). Oxford Dictionary defines it as sharing resources by individuals for free or for a specific fee, usually via the Internet. Thus, the concept of ownership, which underlies the conventional model of the economy, turns into the concept of experience, and the sharing economy is the umbrella model for any alternatives to traditional ownership-based solutions (Dabbous & Tarhini, 2019).

Among the positive aspects of business models based on the sharing economy, what is most commonly indicated is the efficient use of resources, which have so far been used in an ineffective manner. In the social dimension, the sharing economy has a positive impact on solidarity and forging social bonds between individuals, and creates added value by making products available to people who cannot afford them (Ciulli & Kolk, 2019). Models based on the sharing economy have been recognized as sustainable business models (Bocken *et al.*, 2014).

Challenges Related to the Implementation of Sustainable Business Models

Although there is an increasing number of literature sources on the subject of business models, their concepts and definitions, there is still little debate about what the transition to sustainable development looks like and how sustainable business models in organizations emerge and grow. Research shows that individual elements of business models are – to various extent – taken into account by companies, but that sustainable business models are not implemented as such at the conceptual level (Press *et al.*, 2020). This means that the undertaken actions are partial and related to selected processes, products or other areas of the company's business operation.

One of the challenges for the implementation of sustainable business models are the pre-existing unsustainable models, which may promote certain patterns, processes and structures or pressure for short-term profit (Yip & Bocken, 2018). For organizations that are in the process of transformation of their business model into a sustainable one, implementation of such an approach may therefore pose a greater challenge than for those that have been based on the principles of sustainable development from the start.

Another limitation related to the implementation of sustainable business models is the lack of uniform implementation tools. Even though their number is increasing, it is still insignificant and usually focuses on specific processes or process elements (Reinhardt *et al.*, 2019). Examples include the value mapping tool proposed by Bocken *et al.* (2013), the "flourishing canvas" model (Upward & Jones, 2016) or the Triple Layered Business Model Casnvas (Joyce & Paquin, 2016).

Another challenge indicated by the academic community is the fact that the suggested sustainable business models are often complex and complicated, which poses difficulties in terms of their application for both scientists and entrepreneurs (Sala *et al.*, 2015). Thus, models designed to facilitate understanding and implementation of sustainable development are often conceptual, have a limited scope and do not reflect organizational complexity (Kolk & Mauser, 2002).

There is no full agreement in the academic community regarding the benefits related to implementation of sustainable business models. In addition to a number of publications indicating sustainable models as an important and positive trend, there are also voices that treat this subject in a cautious manner, pointing out, for instance, transaction costs related to the implementation of such an approach, the costs of sustainable development or opportunism (Beckmann *et al.*, 2014; Sancha *et al.*, 2016). Some scholars also point to the fact that in the case of certain measures and solutions, only their positive aspects are emphasized, while disregarding the negative ones. For example, innovation and technology transfers can have a negative impact on the environment (Ferreira *et al.*, 2020).

Based on the literature review the following research questions were formulated:

- What is the average age of enterprises operating on the basis of sustainable business models in Poland?
- In which city enterprises operating on the basis of sustainable business models are most often established?
- In which industry enterprises operating on the basis of sustainable business models are most often established?
- Do enterprises operating on the basis of sustainable business models use new technologies?

in order to determine the scale and development potential for this phenomenon and to define the profile of this type of enterprises operating in Poland.

RESEARCH METHODOLOGY

Sustainable Development Start-Ups - Development of a New Category of Enterprises in Poland

The functioning of enterprises based on sustainable business models in Poland had not been the subject of empirical research until 2019. There had been no analyses of the scale of this phenomenon and the characteristics of entities operating in Poland and based on business models that take into account social and environmental aspects.

In 2019, Koźmiński Business Hub published the Positive impact start-ups report. Radical social innovation (Rok *et al.*, 2019) along with a database of enterprises using sustainable business models. The database of Positive Impact Start-ups included 356 entities.

Purpose of the Research

The purpose of this research is to review entities based on sustainable business models, in order to determine the scale and development potential for this phenomenon and to define the profile of this type of enterprises operating in Poland.

The database of Positive Impact Start-ups, prepared and published by Koźmiński Business Hub, is the only list of enterprises operating in Poland based on sustainable business models, and was, therefore, used as a source of analysis for the purposes of this publication.

The authors of the Report and the Database define Positive Impact Start-ups as "an economic activity, which – through innovations related to sustainable development, the use of technology and increasing the level of reliability and efficiency – allow people acting with passion for the common good to achieve a rapid increase in the value of the company/organization, as well as the quality of life and the environment within its scope of influence" (Rok *et al.*, 2019, p. 20).

According to the definition mentioned above, a Positive Impact Start-up should:

- undertake economic activity (though it does not necessarily have to be an enterprise),
- be innovative, so as to contribute to the achievement of the global Sustainable Development Goals,
- use new technologies,
- act ethically and efficiently,
- search for a scalable, repeatable business model and focus on a rapid development in the assumed direction,
- maximize the positive impact on the environment, within its capabilities and scope of activity.

In order to build a more comprehensive profile of the Database, the entities were analysed not only in relation to statistical data such as the age of the enterprise, the location in which the enterprise was established and the industry in which it operates, but also in relation to such aspects as the use of new technologies. It is an element of the proposed definition of the Positive Impact Start-ups. This paper did not analyse innovation understood as a contribution to the Sustainable Development Goals.

Initial Analysis

According to the definition, a Positive Impact Start-up should undertake economic activity, though it does not necessarily have to be an enterprise. For the purposes of this analysis, this criterion was disregarded. Social organizations (associations or foundations) were excluded, as the authors considered that their purpose was to solve specific social or environmental problems, and not to generate profit. Any economic activity carried out by non-governmental organizations is an additional activity. Thus, such organizations do not integrate social, environmental and economic aspects. The economic aspect is a tool that supports – to a specific, limited extent – the implementation of social and environmental goals. In addition, the legal form also entails a number of additional rights and obligations that make business and social organizations incomparable. These differences concern both the limitations related to the economic activity and generating profits, as well as the rights and benefits resulting from social activity. Social cooperatives – entities combining the features of enterprises and non-governmental organizations – were treated as an exception.

In order to ensure terminological and definitional consistency, the author of the paper chose to use the term Positive Impact Start-ups, proposed by the authors of the report and the Positive Impact Start-up database.

Before conducting the substantive analysis, the enterprises in the database were analysed in terms of four operational criteria:

1. *The existence of the enterprise on the market*: Enterprises which do not figure in the relevant registers (CEIDG or KRS), and/or for which information on the Internet could not be found (their official website either did not exist or was not working, and/or their profiles on social media networks have not been updated at least for the last six months).
2. *Country of business registration*: It was assumed that since the purpose of the analysis was to show the condition of the market of enterprises operating under the sustainable development model in Poland, enterprises registered in other countries should be excluded.
3. *Business owner*: Enterprises owned by a different, larger entity were excluded from the analysis.
4. *Legal form*: Social organizations (associations or foundations) were excluded, leaving in the database only enterprises operating in any form.

After applying the above-mentioned criteria, 213 entities remained in the database for analysis.

Concept and Research Plan

The analysis was divided into two parts, on the basis of which it was possible to review the Positive Impact Start-ups in Poland and construct a profile of this type of enterprise.

Part One: Features of Positive Impact Start-ups

The purpose of this part of the analysis was to create a profile of the positive impact start-up market, taking into account such basic data as:

- *establishment year of the enterprise*: For the sake of transparency of the presented data, all companies that were established before 2015 have been included.
- *the city, in which the business is registered*: For the sake of transparency, cities with at least 2 positive impact start-ups have been established. The other cities were considered altogether.
- *the industry, in which the company operates*: For the purposes of this article, the companies listed in the positive impact start-up database have been divided on the basis of the industries, in which they operate, with the use of the division adopted by the Warsaw Stock Exchange (WSE), and not the conventionally used Polish Classification of Activities (PKD). The classification suggested by the WSE takes into account the recipients of products and services, and not the method of production, which is the basis for the classification of the Polish Classification of Activities. Due to the innovative nature of the Positive Impact Start-ups, it was decided that the WSE classification will be more appropriate due to the analysis of recipients. As part of this classification, 8 macro-sectors have been distinguished:

1. financial,
2. fuels and energy,
3. chemistry and raw materials,
4. industrial and construction production,
5. consumption goods,
6. trade and services,
7. health,
8. technologies.

Within each macro-sector, sectors and subsectors have been distinguished. The results of the analyses were presented at the level of sectors, with references – in selected cases – to the level of macro-sectors or subsectors.

Type of activity: For the purposes of the research, the enterprises were divided into two categories: manufacturing enterprises and service enterprises.

Due to the specific nature of business activities conducted by Positive Impact Start-ups, which include sustainability aspects, a classification was also introduced according to theses aspects included. Eco-

nomic aspects were assumed in the business operation of each enterprise. The analysis took into account the incorporation of social or environmental aspects by companies, or – in some cases – both of them.

Part two: Positive Impact Start-ups in Terms of the Use of New Technologies

The purpose of the second part of the analysis was to create a profile of the positive impact start-up market in terms of the use of new technologies. The use of new technologies is an element of the definition of a positive impact start-up, proposed by the authors of the report *Positive Impact Start-up. Radical Social Innovation.*

The group of enterprises that make use of new technologies includes both enterprises that are creating products or providing services on the basis of new technological solutions developed by other entities or are based on solutions developed internally. Online shopping has been excluded due to the widespread use of this type of solutions.

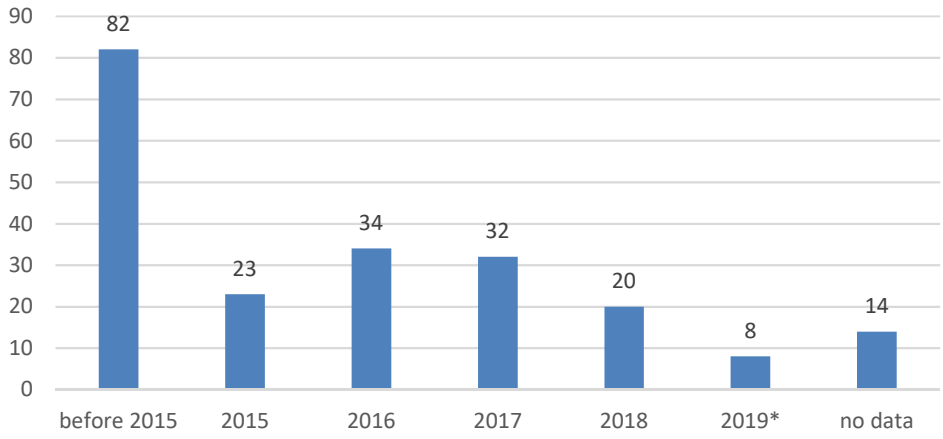
The purpose of this article was to review and describe the positive impact start-up market based on the available database with the use of descriptive statistics. The results were presented in the form of histograms.

RESULTS AND DISCUSSION

Part One: Features of Positive Impact Start-ups

Despite the fact that a sustainable business model is a relatively new concept, enterprises that integrate social and environmental aspects into their business operation have been present on the Polish market for a long time. The first enterprises included in the Positive Impact Start-ups database were established in the 1990s. In total, almost 40% of enterprises had been established 5 or more years ago. This proves that social and environmental issues were important to people who were establishing their own businesses long before related concepts were developed in the scientific and business discourse.

The year 2015, due to the announcement of the 2030 Agenda and the Sustainable Development Goals, was a breakthrough moment for the subject of sustainable development, which became an important topic not only in academic, but also in public and business discussions. This likely had an impact on the increasing number of Positive Impact Start-Ups established in Poland. Already since 2011, there had been over a dozen of new ones per year, but since 2015 that number has grown to over 20 per year (see Figure 3).



* Data for 2019 is incomplete. It includes firms listed in the Positive Impact Start-ups database, published in April 2019.

Figure 3. Number of Positive Impact Start-ups broken down by the years in which they were established[1]
Source: own elaboration (*n* = 213).

[1]

In total, more than half of the start-ups were established in 2015 and after that year. Based on the formula:

$$\bar{x} = \frac{x_1 + \cdots x_n}{n} \quad (1)$$

where:

x - in number of positive impact star-ups established in the given year;

n - number of analysed years.

The average age of Positive Impact Start-ups was calculated, which was 4 years and 8 month. The analysis shows that Positive Impact Start-ups are being established mostly in large cities. Most enterprises of this type were established in Warsaw (76), Kraków (24), Wrocław (15) and Poznań (11) (see Figure 4). This is probably due to greater awareness of the inhabitants of large cities regarding social and environmental issues, which translates both into the number of enterprises established and the number of potential consumers using products and services offered by them. Another reason may be the fact that these are cities, where large, also international corporations are operating that are potential clients for Positive Impact Start-ups. The third possible reason is the higher income of people living and working in large cities, especially in Warsaw. Good financial situation makes it possible to focus on other aspects of the products or services while making decisions related to purchases, not only the price criterion.

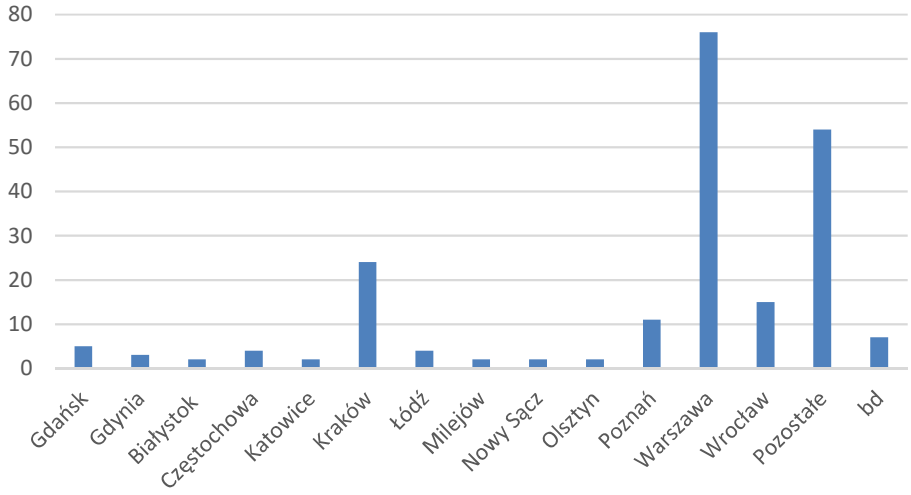


Figure 4. Number of Positive Impact Start-ups broken down by cities, in which they are registered
Source: own elaboration (*n* = 213).

The Positive Impact Start-ups analysed operate mainly in two macro sectors: consumer goods (100 entities) and trade and services (85 entities). In total, they operate in six out of eight macro-sectors.

It should be noted that a significant part of enterprises within particular sectors was assigned to the category “other” (almost every third enterprise, which makes for 79 enterprises). This shows that the existing classification systems of enterprises do not reflect the actual scope of their business activities. This is especially visible in the case of enterprises operating on the basis of innovative business models, including sustainable business models. As a result, it is impossible to create a reliable image of the scope of activities of Positive Impact Start-ups, since too many of them remain outside the defined categories of activities.

Positive Impact Start-ups are mainly manufacturing companies (129 offer products, 79 offer services and 5 offer both products and services), which stands in opposition to what is commonly observed in the economy, where employment in services is almost twice as high as in industry (GUS, 2019).

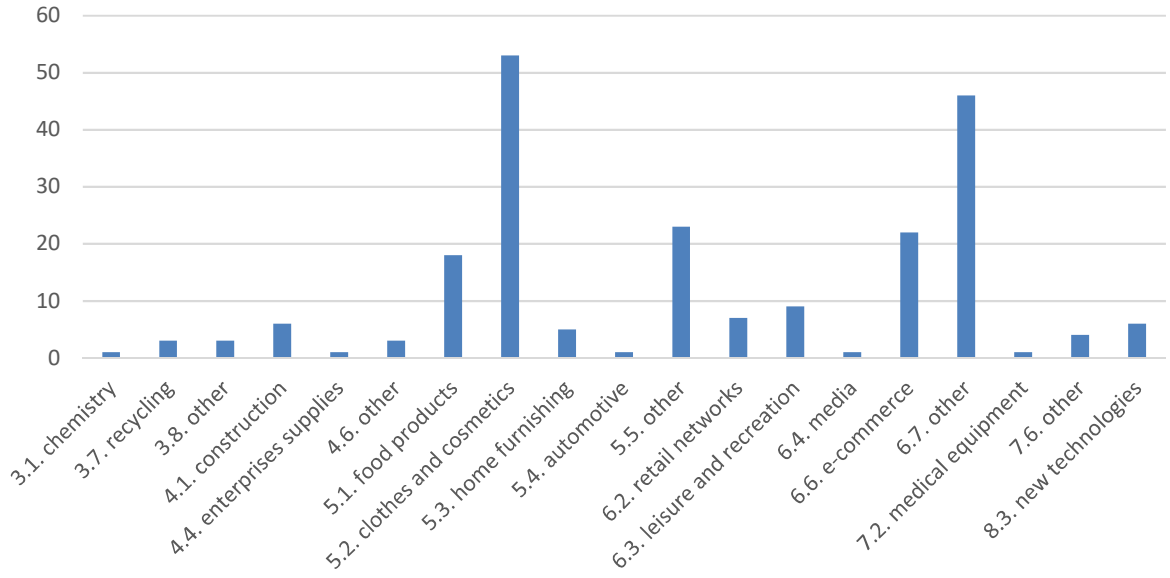


Figure 5. Number of Positive Impact Start-ups broken down by industries
Source: own elaboration (*n* = 213).

Viciunaite and Alfnesa (2020) argue that consumers are interested in the aspects of sustainable development that are at the beginning of the value chain. What is important is the origin of raw materials or the manufacturing methods of a given product. Positive Impact Start-ups offering a sustainable product respond to the need defined in such a way, so a larger number of manufacturing companies may be a response to market demand.

The most common products offered by Positive Impact Start-Ups include clothing and cosmetics (53 companies), products that do not fit into any category (23 companies) and food products (18 companies). Most companies offering services operate in the trade and services sector (39 companies), but their business activities have not been assigned to any of the subsectors. 22 companies[2] operate in online sales of products that meet specific environmental and social criteria (see Figure 6). The predominance of services in enterprises operating in the trade (including online trade), as well as recreation and leisure sectors, reflects the specificity of these enterprises and the nature of their business.

It is worth to point out that the largest number of Positive Impact Start-ups offer clothing and cosmetic products. Although it is the most numerous group among Positive Impact Start-ups, at the same time – in the scale of the whole industry, in which there were over 22,000 companies employing almost 188,000 people in 2016 alone (KPMG, 2018) – it is insignificant, which means that regardless of the numerical distribution within the analysed group, taking into account its current size, it is not possible to draw conclusions based on the results obtained, neither for the entire market nor for individual industries. The number of such entities is too small.

Environmental aspects underlie the business operation of Positive Impact Start-ups much more often than social aspects. The environmental aspects were incorporated by 96 organizations, while the social aspects – by 32, which means that a significant part of enterprises (85) take into account both of them. More frequent incorporation of environmental aspects into business models, as compared to social aspects, may be the result of a growing environmental awareness in Poland, with a simultaneous sense of security in terms of social and economic aspects, reflected, for instance, in in the low unemployment rate or universal access to education and health care.

[2] This figure does not include manufacturers who not only manufacture but also sell their products via the Internet

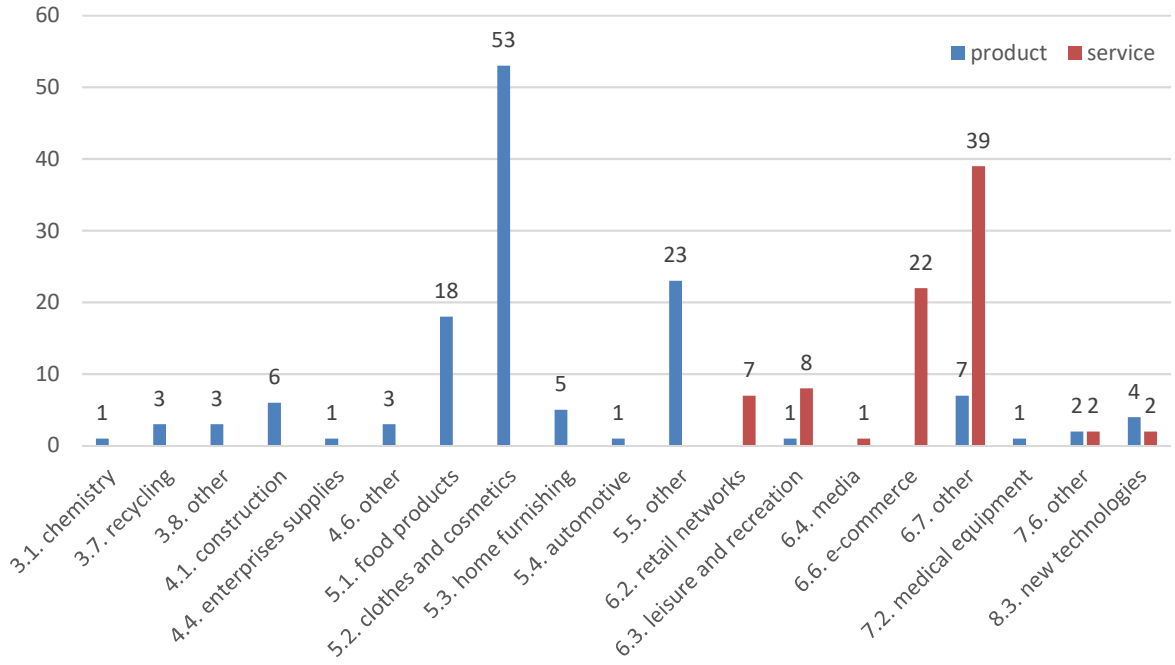


Figure 6. Number of enterprises in particular industries by product or service
Source: own elaboration (*n* = 213).

Part Two: Sustainable Development Start-ups in Terms of the Definition

Among the analysed enterprises, slightly over 10% use new technologies. Almost half of this group (10 entities) are enterprises operating in the macro-sector of trade and services, out of which 80% have been classified as "other", which means that their business activities were not assigned to any category suggested in the classification. Another 5 entities are enterprises operating in the sector of new technologies.

The results confirm that the classification of enterprises used does not include innovative enterprises operating on the basis of various technological solutions, and the distinguished sector of new technologies is too narrow and does not include the possibilities and solutions available on the market.

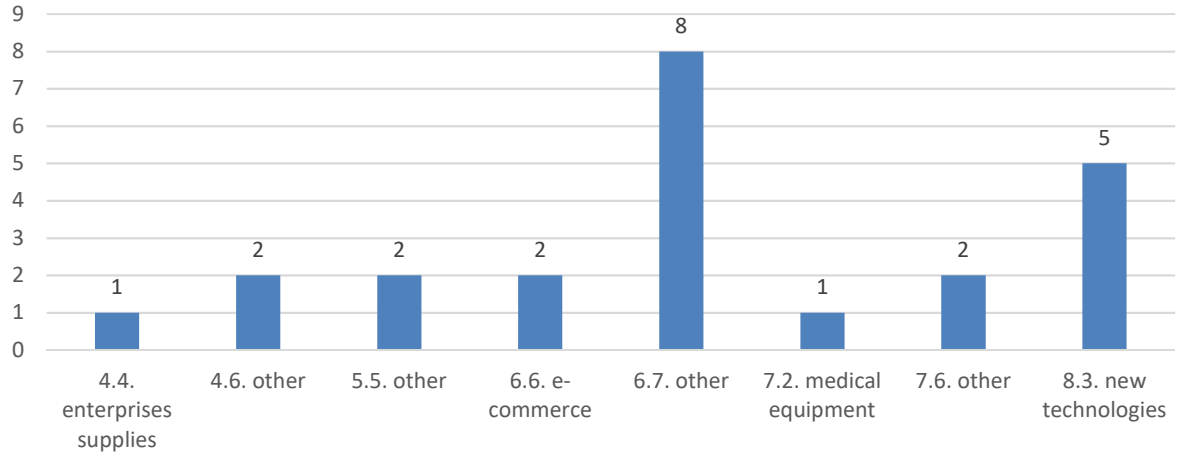


Figure 7. Number of enterprises in particular industries using new technologies
Source: own elaboration (*n* = 213).

It should be noted that among the remaining enterprises which do not use new technologies, there is a trend of not only refraining from searching for new solutions, but also returning to solutions that had been known and used for many years, such as production based on natural raw materials or services offering renovation of items of different categories.

CONCLUSIONS

The purpose of this research was to review entities operating on the basis of sustainable business models – the so-called Positive Impact Start-ups – in order to determine their scale and development potential and define a profile of such enterprises operating in Poland. The analysis was conducted on the basis of the Positive Impact Start-ups database. The entities listed in the database represent only an insignificant fraction of all enterprises operating in Poland. The results and formulated conclusions should be applied to the specific category of Positive Impact Start-ups and should not be used for making generalizations regarding enterprises in general.

On the basis of the analysis, it can be concluded that the number of Positive Impact Start-ups is constantly growing, by about 20-30 entities year on year. Although from the perspective of the analysed group, it represents a significant increase, in relation to the total number of enterprises operating in individual industries it is insignificant, and over the last four years there has been no significant change in the trend. Without additional factors motivating entrepreneurs to integrate social and environmental aspects into their business models, such as consumer awareness and pressure or regulations, no significant, large-scale changes are likely to emerge in business models of enterprises.

Based on the analysed data, a profile of a Positive Impact Start-up was created with the most typical characteristics of this type of enterprise. A profile is a set of features that are most frequent within each analysed category.

Positive Impact Start-up Profile:

- *establishment year:* established within the last 5 years (in 2015-2019),
- *location:* established in a large city,
- *industry:* operates in the manufacturing industry, producing clothing, cosmetics or food products, or in the clothing industry, but its business operation cannot be clearly classified into a specific category,
- *the use of new technologies:* does not use new technologies. The only technological solution used are websites and online stores, often created on the basis of ready-made templates.

In many cases, the analysed Positive Impact Start-ups are small manufacturing companies, online shops or other enterprises that take a competitive advantage of their small-scale, which is clearly reflected in their missions or visions. These are not so much scalable as replicable businesses, while these are the characteristics of start-ups (Sekliuckiene *et al.*, 2018; Maciejewski & Wach, 2019). It is possible to open many similar enterprises. In light of the above, there are doubts regarding the compliance of the enterprises listed in the database with the definition of a Positive Impact Start-up, proposed by the authors of the database, according to which such enterprises not only "contribute to a rapid increase in the quality of life and the environment within the sphere of their influence", but also achieve a "rapid growth of the value of the company/organization".

Regardless of the current scale and the scope of their business activity, it can be concluded that the number of enterprises in Poland based on sustainable business models that take into account specific social and environmental aspects is growing. In order to understand the potential of this phenomenon, further research with more precise criteria and more careful analysis.

Possible areas of further research include:

1. *Extension of the subject scope of the analysis. Including large enterprises:* Due to the scale of operations, the impact of solutions introduced by large enterprises is much greater. Such solutions can serve as an example and inspiration for new enterprises.
2. *Extension of the subject scope of the analysis*: Including a larger number of enterprises operating in the B2B model. In the Positive Impact Start-ups database, enterprises operating in the B2C model are dominating. This does not reflect the structure of the market. The market of start-ups offering solutions for enterprises, which is an extremely important element in building the business ecosystem of sustainable development, was largely disregarded. Analysing the phenomenon of Positive Impact Start-ups against the market as a whole will allow to fully diagnose its scale and significance, and to propose adequate recommendations regarding its development.

3. *Clarification of the definition and criteria characterizing sustainable development enterprises:* Both the analysis of the literature on the subject, as well as the review of the Positive Impact Start-ups database, indicates the need for the clarification of the definition of a sustainable development enterprise, including the purpose of its operation and scope of business activities, and thus to determine whether enterprises from such sectors as medicine, pharmacy or education should always be considered as sustainable development enterprises due to their goal, which is improving health and quality of life or offering equal access to education, or whether they should undertake additional measures in order to be qualified in this category.

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Conflict of Interest

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