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Comparative Research of Central and Eastern European Startup Researches Based on Artificial Intelligence-Based Natural Language Processing

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ABSTRACT

Objective: In our study, we analyze Central and Eastern European (CEE) scientific papers published in peer-reviewed scientific journals between 2015 and 2021. We examine what category systems and methods are used in Central and Eastern European start-up researches in the recent years.

Methodology: Our used methodology was structured literature review analysis and artificial intelligence-based natural language processing which is one of the most evolving methodological directions in economics and social sciences at present but it is very rarely used in review analysis of startup research.

Value Added: The NLP method has not been widely used for the analysis of the startup literature. Furthermore, our study is the first which analyzes CEE startups research with NLP technique.

Findings: Based on our results, it can be stated that CEE startup researches follow the big global startup research narratives. However, a specific conceptual network is also emerging which contains several shifts of emphasis compared to the directions of global research.

Key words: startup research, natural language processing, text mining, artificial intelligence, Central and Eastern Europe

JEL codes: M13, C45, M20, I23

Concept of startups

The startup form is one of the manifestations of entrepreneurship (Wennekers & Thurik, 1999; Zacharakis, Reynolds, & Bygrave, 1999) which contributes greatly to the innovative and competitive advantages and economic growth of

a given economy (Praag & Versloot, 2007). As a result, it is no coincidence that the topic is accompanied by strong academic interest, as huge research has been done over the past 80 years on the matter. In the field of startup research, even though knowledge production has been accelerating at a tremendous rate recently, it remains fragmented and interdisciplinary to this day. Therefore, a review of this literature as a research method, which can be described as a systematic way of gathering and synthesizing previous research, is more relevant than ever (Baumeister & Leary, 1997; Tranfield, Denyer, & Smart, 2003). In this sense, a structured literature review (SLR) can be explained as a research method and process for identifying and critically evaluating relevant researches and for collecting and analysing data from such research (Liberati et al., 2009). Ongoing analyses on the startup topic give little attention to the literature of startup researches of Central and Eastern Europe (CEE) with semi-peripheral economies. Consequently, our study provides a comprehensive summary and analysis of CEE research on startup research as a gap-filling article by identifying the key topics and trends.

The definition of the concept of startup itself can be approached from a number of theoretical foundations. Due to this, its definition is spread over a wide spectrum in the literature, highlighting its different mechanisms of action. The concept appeared in the late 60s and early 70s under the collective concept of ‘fast-growing businesses’. At that time, theorists focused on the differences in the accumulation of investment and start-up starting costs in their definitions (Aschmann, 1970; Ray, Villeneuve, & Roberge, 1974) as well as the limited funding opportunities that any fast-growing firm would face (Schmidt & Lippitt, 1967). By the 1980s, the concept of a startup was narrowed down to companies operating in a particular industry and so, it mostly referred to companies operating in the semiconductor sector (Angel, 1989; Shoenberger, 1986) which were otherwise known as ‘fast-growing electronic startups’ (Florida, 2005, p. 256). In parallel with the turbulent growth of the startup sector in the 1990s and 2000s, the definition space expanded, and rapid growth came to the fore in the definition (Saxenian, 1994) in an extremely unstable economic environment (Markusen, 2003). Moreover, new types of financing entities appeared in the definition such as the role of venture capital (Bussgang, 2010).

The role of idea-based operation, informality, and hard work leading to exponential growth in firms (Feld & Mendelson, 2016; Barringer, Jones, & Neubaum, 2005) also played a significant role in the definition of a startup at that time. By the 2000s, startups created new industries and were at the forefront of developing innovative products and services (Fesser & Willard, 1990). Thus, the concept of relevant industry experience and creation was also included in the definition (Hwang & Horowitz, 2012). By 2010, based on feminist economic geography and post-structuralist theories, process – and context-based definitions also prevailed in the definition of startups (Yeung, 2019). Thus, raising the definition of a startup as a narrative (Cockayne, 2019) which is a form of enterprise shows how both corporate action and the way employees work within these are recontextualized. Therefore, the definition on startups started being defined as a kind of working method that promises a better and more modern type of work based on its self-narrative (Marwick, 2013): a love of work (Markusen, 2003; Gill, 2002), a passionate attachment to work (McRobbie, 2002), and a concept of a new urban environment and lifestyle (Florida, 2005). The contextual definition of a startup has also been supplemented with the function of an economic marker, as they mostly appear in countries that are making promising global or regional economic developments driven by technological and knowledge-based forms of enterprise. The concept of a startup has thus also become an economic status symbol of a country, symbolizing the economic sphere populated by highly educated young people at the forefront of business and cultural trends (Marwick, 2013).

The scientific interest of the European semi-peripheral countries turned to startups in the 2000s and then the researches intensified from 2015 albeit with some delays. This coincided with the economic process that the startup ecosystem began to strengthen in the respective countries with it becoming one of the strengthening and sought-after forms of operation of enterprises.

Text mining and artificial intelligence: data and analysis methods

One of the most evolving methodological directions in economics and social sciences at present is the interpretation of texts as data and quantitative text analysis (Sebők, Ring, & Máté, 2021).¹

Natural language processing (NLP) became one of the leading methodological trends with the Big Data revolution when diverse, non-linear, large-scale, heterogeneous databases appeared (Gosztonyi, 2021). As in the case of the complex methodologies brought to life by Big Data, inductive cognition direction plays a key role in automated text analysis, as opposed to the deductive theoretical directions, so it is especially suitable for exploratory research. However, there are several limitations to the method as Grimmer and Steward (2013) stated in their study. The hermeneutical and phenomenological interpretation of human language cannot currently be part of NLP but with this method, a huge amount of textual data can be analysed and processed. Thus, quantitative text analysis is not intended to replace the analysis of the scientific cognitive in causal analysis but rather to embed the process in an interaction with it.

The use of text mining and NLP is currently in its infancy with regard to the study of startups. However, several very promising studies have been conducted in recent years, such as the research of Glupker et al. (2019) who extended and improved the traditional econometric approaches and used the NLP methodology to analyse how the network position of an investor determines the success of investment in startups. Antretter et al. (2019) identified which startup companies could predict economic failure with the help of the text mining methodology. Santana et al. (2017) used NLP techniques to identify potential, high-value investments in the Crunchbase system. This research was complemented by Xu, Chen, & Zhao (2017) who also analysed the Crunchbase database using the NLP method with the aim of narrowing

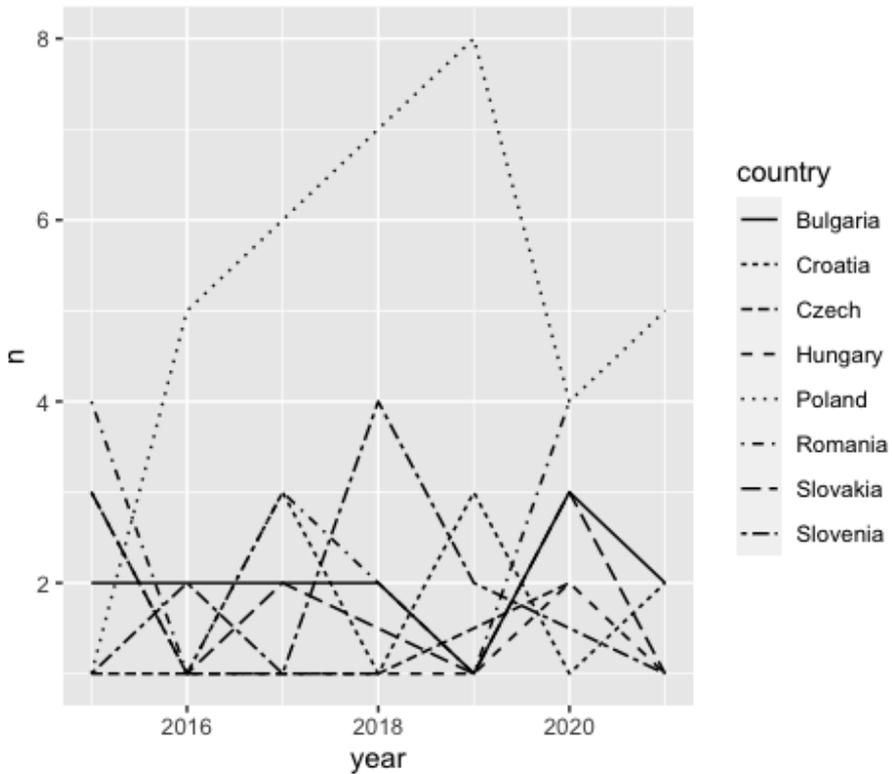
1 This methodological direction can be found under number of names in the literature; text mining, automated content analysis, automated text analysis, natural language processing (NLP).

the list of portfolio companies that venture capitalists can take into account. Dellermann et al. (2017) combined machine learning with traditional qualitative analysis techniques to create a method of the so-called hybrid intelligence for the analysis of a startup's success.

From all this, however, it can be seen that in startup researches, the papers using NLP techniques mostly focus on certain industries, firms, activities, or regions which greatly limits the generalizability of NLP research (Demil et al., 2015; Hermes, Böhm, & Krcmar, 2019). The method has not been widely used for the analysis of the startup literature as well. Furthermore, NLP research on CEE startups is not known either which is why we believe that our research can shed new light on the scientific discourse on these startups.

To identify relevant scientific publications on startups, we used a structured literature review (SLR) following the suggestions of Webster and Watson (2002) in which we (i) searched the leading scientific journal databases based on the given keywords, (ii) selected publications with the appropriate criteria, (iii) did a quick review of the identified publications by reading their titles, abstracts, and the full text and finally (iv) used an NLP analysis to complete the analysis of the selected texts. Our corpus thus consists of scientific texts from eight CEE member states of the European Union (Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Romania, Slovakia, and Slovenia). In our study, we examined scientific works published in English in a peer-reviewed scientific journals between 2015 and 2021. We compiled our database using three databases: Web of Science, EBSCO, and Google Scholar. These databases allowed us to include not only articles published in highly indexed journals but also articles published in journals with smaller global scientific impact. As a result, our entire corpus consisted of 157 articles. However, due to copyright issues, we were only able to analyse 104 articles with text mining. In this regard, our analysis was not based on the entire corpus; it can be interpreted as a quasi-sample study. The distribution of the corpus by country and time interval is summarized in figure 1.

Figure 1. Distribution of corpus documents by country and year (N = 104)



Source: own elaboration.

Figure 1 shows that even though startup articles have a very different number of items per country, their number of appearances is fairly balanced each year. The average number of papers per year is 14.85 (std. \pm 2.85). Most of the papers were published in 2018 and 2020 (18 pieces). However, this does not differ significantly from the regional annual average. The proportion of appearances related to the topic varies greatly from country to country. The largest number of published papers are from Poland (28.8%), followed by Romania (14.4%) and

Croatia (13.4%) while the smallest number of scientific publications on the topic is in the Czech Republic (5.8%), and Hungary (5.8%).²

The next methodological step was the detailed reading of the full text of the selected publications and their categorization according to their purpose and content in order to produce descriptive statistics from the corpus. After categorizing the sample by author, year, methodology, focus, and topic, the documents were tokenized and lemmatized. In our analysis, we used stopwords filtering; on one hand, we used the English stopwords lexicon of the Quanteda R program package (Benoit et al., 2018) while on the other hand, we built a specific stopwords lexicon on the corpus. After the stopwords normalisation, our corpus consisted of 118,882 lemmas.

The first NLP methodology that we used was the term frequency-inverse document frequency (TF-IDF) analysis which calculates the inverse value of the word-document frequency (Aizawa, 2003). Based on this, it can be concluded that if a given word is associated with a high TF-IDF score, it occurs frequently in the document while in the whole corpus it is rare. The inverse value of TF-IDF, therefore, shows how significant the given expression is in general in its topic. In our study, the TF-IDF index was calculated and normalized according to the following formula:

$$f_{\text{term}} = \sum_i^n \text{sentence_occurrences}_i$$

where F_{term} represents the frequency of the expression, i covers the number of documents, and $\text{sentence_occurrences}_i$ is the number of sentences in the i document in which the expression is found. Normalized TF-IDF values were calculated using the following formula:

$$Z_{\text{term}} = \frac{f_{\text{term}} - \min(F)}{\max(F) - \min(F)} * 99 + 1$$

where Z_{term} is the frequency index of an expression, $\min(F)$ is the minimum value of the frequency of the expression while $\max(F)$ is the maximum value of the frequency of the expression (Kuzminov et al., 2018). With descriptive

2 We have created a user-friendly online application for descriptive statistics, which is available at the following link: <https://startupbge.shinyapps.io/Startuppapers>.

statistics such as term frequency (TF) and TF-IDF the corpus elements were examined to reveal what defining terms appear in the text. However, we performed several additional NLP analyses on the startup corpus in order to run our results and models through multi-segment validation.

By performing sentiment analysis, our goal was to explore the latent dimensions of the texts (Laver, Benoit, & Garry, 2003), i.e., to extract information from the content of individual texts that express evaluation and then examine their change over time (Liu, 2010). In our research, we performed an emotion analysis as well in which we placed the lemmas not only on a positive-negative-neutral scale but also on an emotional scale. Thus, in the sentiment analysis, we used an n-point scale into which words were entered using a lexicon-based, automatic classification (Sebastiani, 2002; Prabowo & Thelwall, 2009). For this, we used Saif and Turney's (2013) National Research Council of Canada Emotion Lexicon (NRC) which is an emotional scale-based dictionary of 10 elements (positive, negative, anger, expectation, disgust, fear, joy, sadness, surprise, and trust). Thus, in our emotion analysis, we performed a predefined dictionary-based analysis based on the frequency of keywords within a given category (Young & Soroka, 2012; Grimmer & Stewart, 2013). The method has also made it possible to capture the emotions of texts (Hatzivassiloglou & McKeown, 1997; Watanabe, 2021; Rudkowsky et al., 2018) and to analyse subjective emotion associations (Kim & Hovy, 2004; Wilson, Wiebe, & Hoffmann, 2005).

Recently, much attention has also been paid to the generative probabilistic models of text corpus which aim to identify data representations that reduce the length of the description and reveal statistical structures between or within documents. Thus, in the further analysis of the corpus, we used the method of word embedding based on artificial intelligence and unsupervised machine learning. The method of word embedding is constructed through neural networks, where the network produces a vector representation of each word during the learning process. For our word embedding analysis, we used a 300-dimensional vector which is common in the literature (Sebők, Ring, & Máté, 2021). The distance can be used to determine the semantic relationship between each lemma. Expressions with semantically similar content are close to each other while different ones are located far apart in the multidimensional space. Thus, word embedding

is basically a technique of a dense vector representation of words in a corpus where the dimension of the word vector is smaller than the size of the corpus itself. The vectors created during the analysis, in contrast to the results of co-occurrence analysis for example, capture semantic relationships between the linguistic elements examined, as the distribution hypothesis suggests that semantically similar words generally have a similar contextual distribution (Harris, 1954).

Finally, the corpus was also analysed using text scaling to examine how well the thematic concepts defined the documents. In text scaling, we used the wordfish method which can be classified as an unsupervised machine learning methodology (Slapin & Proksch, 2008). Text scaling approaches are primarily used to directly identify the latent positions of political actors (Laver, Benoit, & Garry, 2003; Proksch & Slapin, 2010). However, they have also proved to be an important method of analysis in our literature review as well. Unlike dictionary methods, wordfish does not work with pre-recorded reference points but explores expressions that distinguish texts from each other. The method based on IRT (item response theory) which, in turn, is based on the fact that the concepts move in a small dimensional space can be described by the parameter θ_i of the concept i . The position of a text in this space influences the use of words in the same (Hjorth et al., 2015; Grimmer & Stewart, 2013). Wordfish assumes that the words in the documents follow a Poisson distribution. More specifically, wordfish is a version of an ideal point model of Poisson where, based on a collection of documents and the frequency of the j th word in the i th document, W_{ij} is derived from a Poisson distribution of λ_{ij} , which can be modelled by taking into account the document length (α_i), the lemma frequency (ψ_j), the level to which the lemma identifies the direction of the underlying ideological space (β_j), and the underlying position of the document (θ_i) (Slapin & Proksch, 2008; Sebastiani, 2002). According to Slapin and Proksch (2008), the method can be summarized in the equation below:

$$\lambda_{ij} = \exp(\alpha_i + \psi_j + \beta_j \times \theta_i)$$

In summary, our structured literature review is based on hybrid classification NLP techniques which we followed to increase the accuracy of classifications as well as to deepen the multi-segment understanding of the corpus.

Research questions and hypotheses

Our study analyses Central and Eastern European startup researches published in English in scientific journals between 2015 and 2021. Consequently, in our exploratory research, we looked for the answer pertaining to what extent the research in different countries shows similarity or to what extent the concept directions of research have changed during the seven-year examined time interval. Consequently, our main research hypotheses can be summarized as follows:

H1: Scientifically based startup research in semi-peripheral CEE countries is themed along with similar topics.

H2: Scientifically based startup research in semi-peripheral CEE countries analyses startups in a neutral emotional context.

H3: In the case of startup research in CEEU, which has not developed any separate conceptual or analytical specificity, startup research is interpreted in this region through global scientific concepts and interpretations.

NLP analysis of startup studies

To firstly analyse the descriptive statistics of our corpus, we classified the studies according to several factors so we analyzed the research focus of the articles³, the main topic, and the methodology used in the researches.

The vast majority of studies (72.4%) focus on a given state, and only a small proportion (27.6%) include comparative research between countries. The distribution of texts by topic (table 1) shows that the texts can be divided into six topic groups, of which about $\frac{1}{4}$ – $\frac{1}{4}$ are texts analysing startup ecosystems (28.6%) and texts presenting startup ideas and business models (24.8%). The share of articles that focus on the topic of finance and management is also outstanding (20.0%).

3 Focus on research within a country or internationally comparative focus.

Table 1. Distribution of corpus documents as topics (N = 104)

	Frequency	Percent
Ecosystem	30	28.6
Idea generation and Model	26	24.8
Finance and Management	21	20.0
Survival and growth	14	13.3
Sustainability	9	8.6
Gender and Culture	5	4.8

Source: own elaboration.

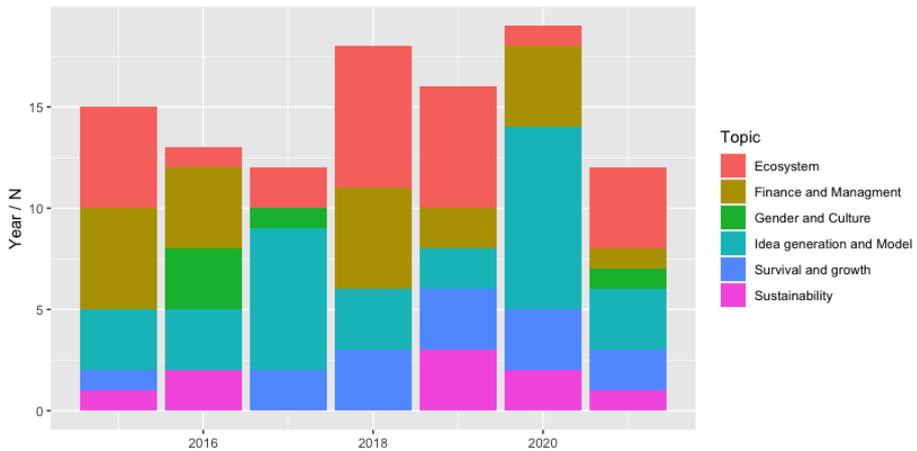
The distribution of research topics by country is presented in table 2. The table shows that there is a very large variance between research topics within countries. Ecosystem and Startup idea and model research topics are those topics we encounter in all countries. The ecosystem has a similar percentage distribution (average percentage: 24.06%, standard deviation: 8.8%) throughout the countries, although idea generation and models show a large variance, as nearly half of Bulgarian (41.67%) and Romanian (46.67%) research belongs to this topic. In the case of any other topic, we always see a country that completely lacks any research on that topic. In other words, it appears in a very primitive manner. Financial and management research, for example, appears largely in Croatia (35.71%), Poland (26.6%), and Romania (26.6%), while in Slovakia and Slovenia, we do not find any research on this topic.

Table 2. Distribution of research topics by country (% , N = 104)

	Bulgaria	Croatia	Czech	Hungary	Poland	Romania	Slovakia	Slovenia
Ecosystem	0.25	0.21	0.17	0.17	0.27	0.13	0.36	0.36
Finance and Management	0.17	0.36	0.17	0.17	0.27	0.27	0	0
Gender and Culture	0	0.07	0	0	0.07	0	0.09	0.09
Idea generation and Model	0.42	0.35	0.33	0.17	0.13	0.47	0.18	0.36
Survival and Growth	0.17	0	0.33	0.17	0.13	0.07	0.18	0.18
Sustainability	0	0	0	0.33	0.13	0.07	0.18	0

Source: own elaboration.

If we look at the yearly breakdown (figure 2), it can be seen that research on a larger proportion of topics (ecosystem, finance and management, survival and growth, idea and model) is written every year (with a different number of papers, of course). However, we can only observe the short-term emergence and disappearance of other topics. Such is the case with sustainability which will disappear completely in 2017 and 2018, or studies in the field of gender and culture which were carried out only in 2016 and 2017 by researchers in the region.

Figure 2. Distribution of corpus text topics by country and year (N = 104)

Source: own elaboration.

From a methodological point of view, only a fraction of the research can be classified as longitudinal research (16.2%). Quantitative analyses accounted for 50.5% of the studies while qualitative methodologies accounted for 47.6% of the research. Therefore, mixed-methodology texts appear only in a relatively small proportion (1.9%). However, within the qualitative and quantitative methodological categories, the methods used in specific studies spread over a very wide spectrum which are summarized in table 3.

Table 3. Distribution of the corpus by research methodology (N = 104)

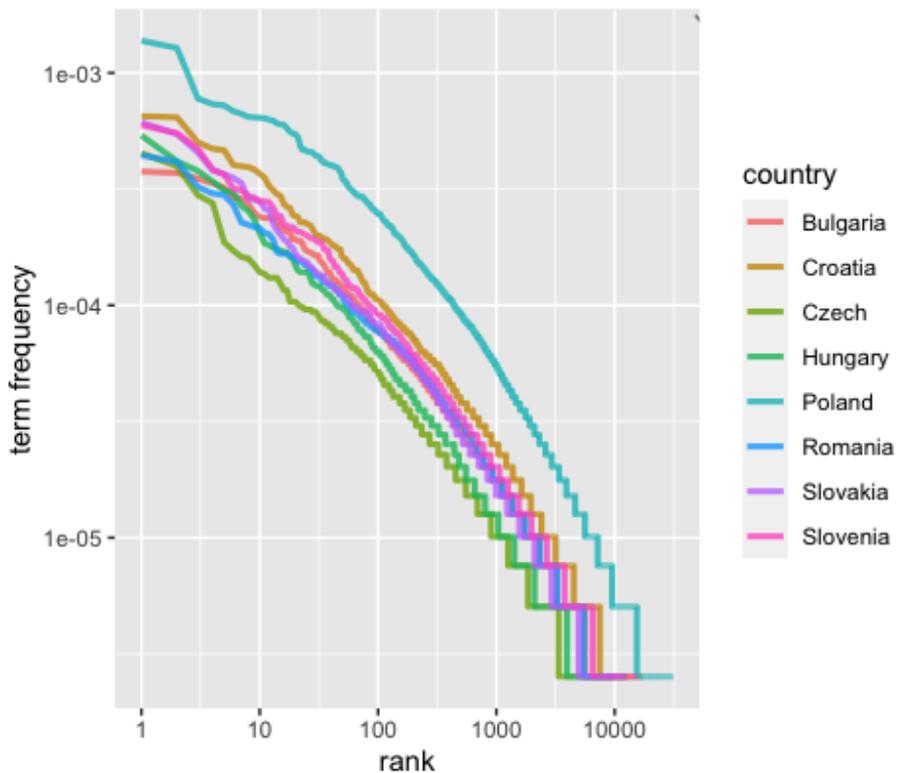
	Frequency	Percent
Survey	51	48.6
Text analysis	24	22.9
Literature review	15	14.3
Case study	12	11.4
Simulation	3	2.9

Source: own elaboration.

Papers using the survey method accounted for almost half of the articles (48.6%) but the proportion of texts using interview methods and focus group methods (22.9%) and texts containing literature reviews (14.3%) were also high. Researchers work with complex system-level analysis methodologies only in a few cases (neural networks, spatial-agent dynamic model, simulation methodology, etc.) due to which, these analyses accounted for only 2.9% of the texts.

Moving from descriptive statistics to text mining methods, one of the most commonly used indicators in our study was the weighed TF-IDF index. Based on the TF-IDF indexes, after a log-log normalization, it became comparable to what extent the texts differ from the average text corpus by country (figure 3).

Figure 3. TF-IDF indexes of documents classified by country in a log-log system (N = 104)

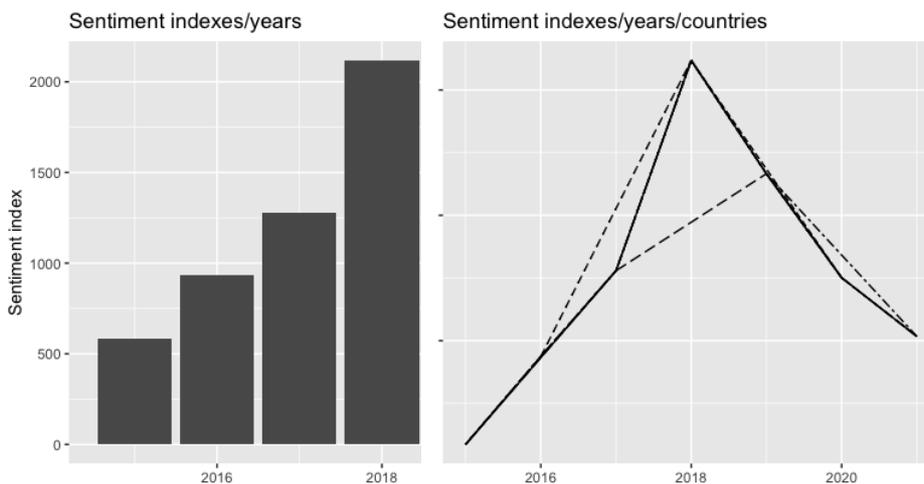


Source: own elaboration.

It can be seen from the figure that, not surprisingly, the TF-IDF indexes of documents follow Zipf's law (Zipf, 1949). At the same time, a more important result is that the TF-IDF values of the countries are strongly correlated with each other. Although the difference based on the largest lemma is found in the case of Poland, the Czech Republic, and Hungary, the wording of the texts shows a high degree of consistency in each country. Based on the lemmas, a strong congruence can be observed for the entrepreneur/enterprise lemma ("entrepreneurship", "entrepreneur", "business"), for the "startup" lemma, for the "innovation" lemma, in the forms of investment ("venture capital", "funds") lemma, and for the "accelerator" lemma. In the case of differentiation in Poland, the "biomass" and "fintech" lemmas cause a large difference, while in the case of Hungary and the Czech Republic, the mention of a specific national startup by name causes the differentiation.

Therefore, in the case of texts, we see a difference in certain topics, but at the same time, a high degree of consistence in terms of lemmas. To delve deeper into the analysis of these narratives and to grasp the emotional attitudes of the research about the topic, we conducted a sentiment analysis. To do this, we first constructed a sentiment index based on negative and positive sentiment values which were aggregated by year and country (figure 4).

Figure 4. Sentiment index of texts by year and country

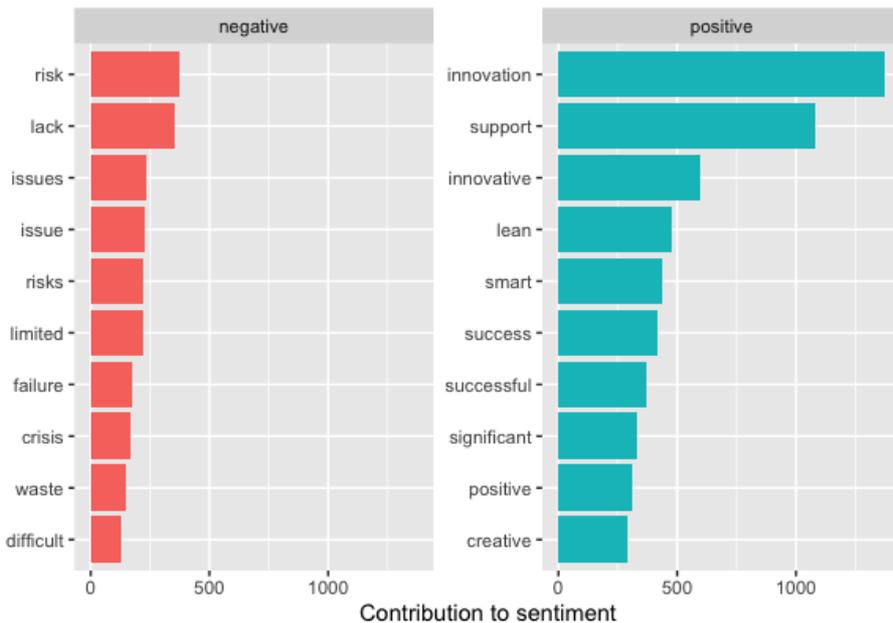


Source: own elaboration.

Figure 4 shows that the texts reflect positive emotional attitudes towards startups every year without any exception. We can also see a strong increase in this non-neutral emotional relationship until 2018 after which, there is a slow decline. This positive attitude increasing and then decreasing is true for the papers that are written in any country, although in the case of the Czech Republic, we can observe a faster increase in the positive sentiment index. In the case of Hungary, the highest index score related to the topic is still lower than the regional average.

The most common words with positive and negative sentiment indices in the corpus are shown in figure 5. These sentiment words describe a linguistic context in which the authors place their analyses. Based on these, startups are placed in a narrative space by researchers that is positively associated with “innovation”, “support”, “successes”, and “creativity: while from a negative direction it also has “high risk”, “scarcity”, “problems”, “failure”, and “difficulty”.⁴

Figure 5. Lemmas with the highest positive and negative sentiment indexes

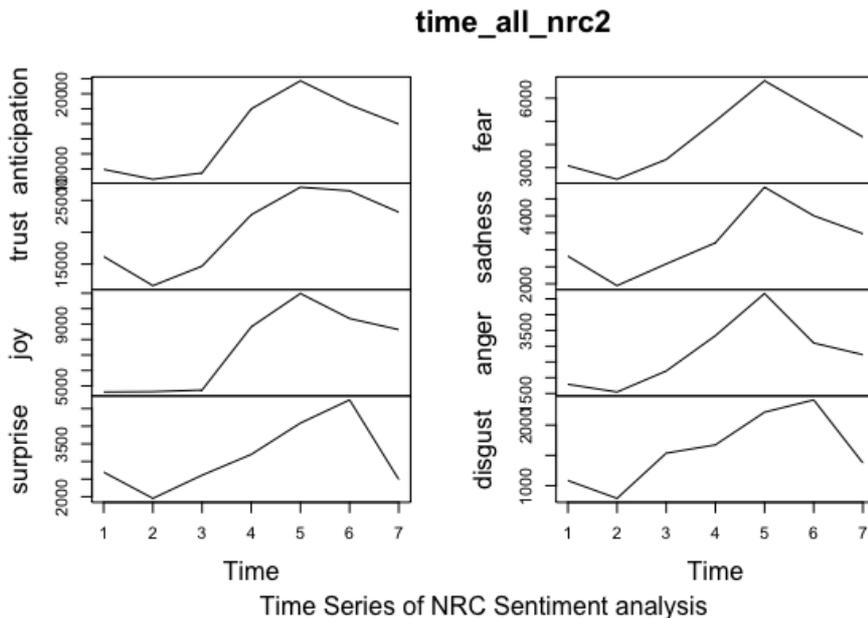


Source: own elaboration.

⁴ Positive and negative sentiment analysis was also performed by country as well, but we obtained a highly correlated result with the aggregate level analysis.

We captured the positive and negative narrative space by country and year with the emotion analysis as well. The results of the eight-value NRC emotional analysis are summarized in figure 6. The lines show that the clear rise and subsequent decline of each emotion can be observed throughout the text corpus. Based on the emotion analysis, the texts published in 2019 show a peak in both positive (“expectation”, “trust”, “joy”) and negative (“fear”, “sadness”, “anger”) emotions. The year 2020 shows outstanding index numbers for “surprise” and “disgust”. Although the year 2019 marks a turning point in emotions, the texts also show that we can be aware of a much steeper rise in negative emotions than in positive emotions.

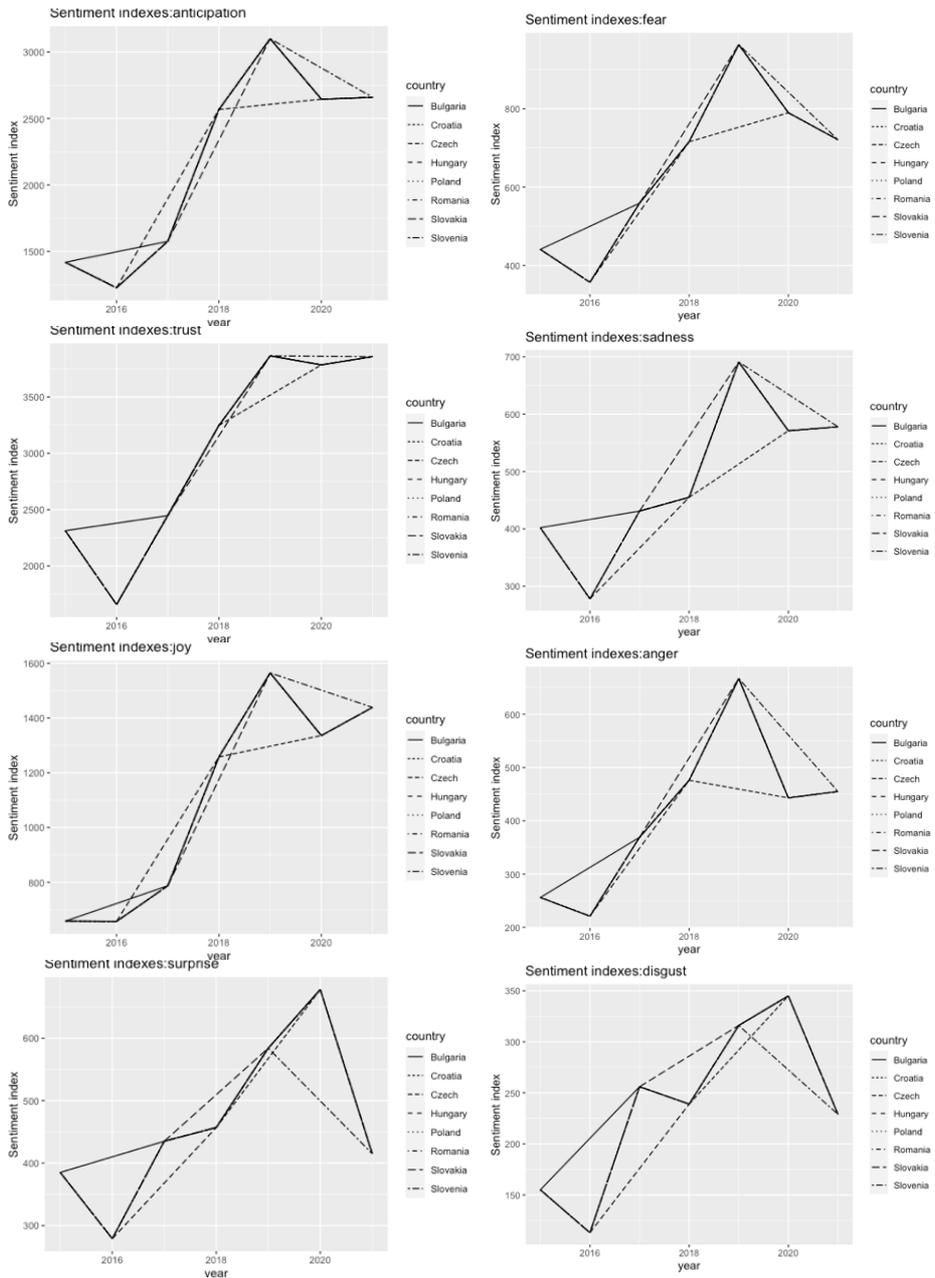
Figure 6. NRC sentiment analysis 2015–2021



Source: own elaboration.

If we break down the emotion indices by country (figure 7), we can see that a fairly high match emerges between the countries in the time in both positive and negative emotions. Exceptions to this are Hungary, where the NRC indices have a later peak and a less high index number, and the Czech Republic and Romania, where steeper increases can be observed in the indices.

Figure 7. NRC sentiment analysis 2015–2021 and broken down by country



Source: own elaboration.

In summary, it can be seen that the “golden year” of the topic in CEE was the year 2018, as the researchers in this year across the region have placed startup studies in a very positive interpretive framework. But this positive attitude seems to be declining throughout the following years. We do not see any major differences from this trend in any countries in the case of positive emotions although in the case of negative emotional words, we see those papers written in Hungary, the Czech Republic, and Romania differ slightly from the trend lines.

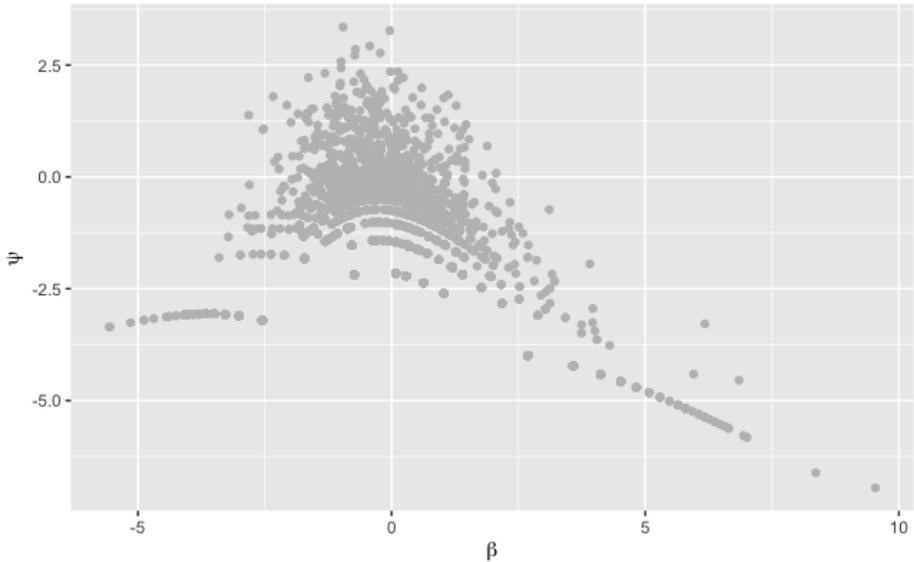
Leaving aside the analysis of sentiment analysis, it is worth seeing what interpretive space the corpus spreads out along concepts, words, and lemmas. Thus, to understand what the web of interpretation is, we need to look at the conceptual and terminology narrative that is used in CEE research. To do this, we analysed the corpus by text scaling firstly. In our analysis, we used β^5 and ψ^6 values⁷. We published our results in the classical “Eiffel Tower” figure which illustrates the frequency of words and their influence on the scale (figure 8). In the “Eiffel Tower” figure, three major categories of word usage can be distinguished: (i) frequently used but neutral words (high ψ , low β), (ii) less frequently used but more determinative words (high β , low ψ), and (iii) moderately used and moderately determinative words (medium β , medium ψ). In the first category, we find words (“visegrad”, “eastern”, “survey”) that characterize the articles mainly territorially and methodologically. In the second category, it is much more difficult to find a common set of interpretations; we find words such as “stakeholders”, “events”, “experiences”, “top down”, “collaboration”, “model”. All of these words appear infrequently and yet, they are significant to the corpus of text. These words and concepts mainly summarize business cooperation models and directions. Finally, in the middle, we find the most commonly used neutral words such as “business”, “entrepreneurship”, “development”, “project”, “growth”, “financial”, “investment”, “capital”, and “startup”.

5 The weight associated with the words which shows the relative importance of the word.

6 Word fixed effects, which corrects a different word frequency.

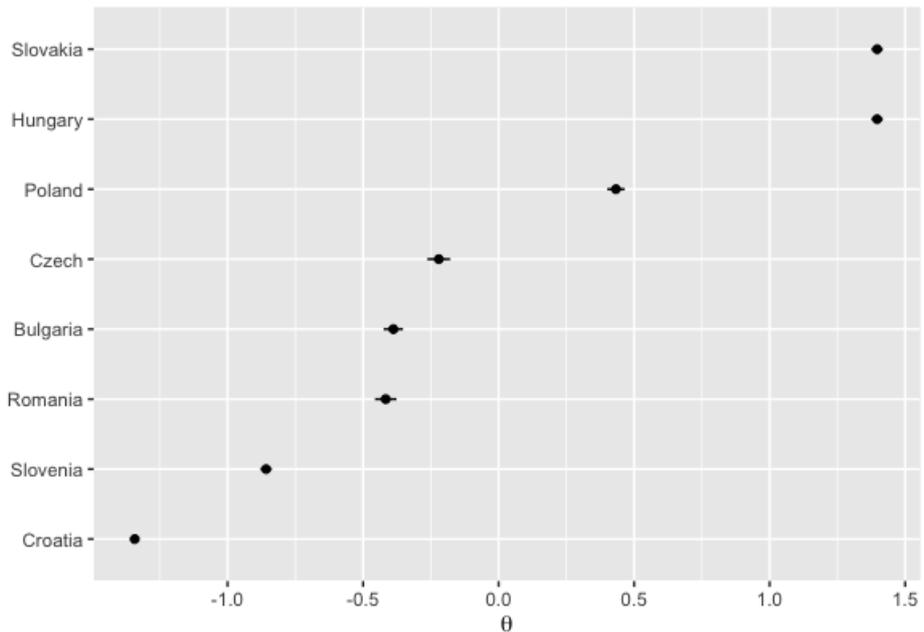
7 Considering the length of the documents and the word frequency, words with a negative β value are more often used by texts with a negative θ coefficient.

Figure 8. Eiffel Tower illustration of the text scaling



Source: own elaboration.

Comparing the country metadata, the aggregate values of the θ positions for a word are obtained as shown in figure 9. It can be seen that Slovakian and Hungarian documents use term occupies a high relevance, while the other end of the relevance scale is marked by the lemmas of the Slovenian and Croatian studies.

Figure 9. Level of documents based on θ positions

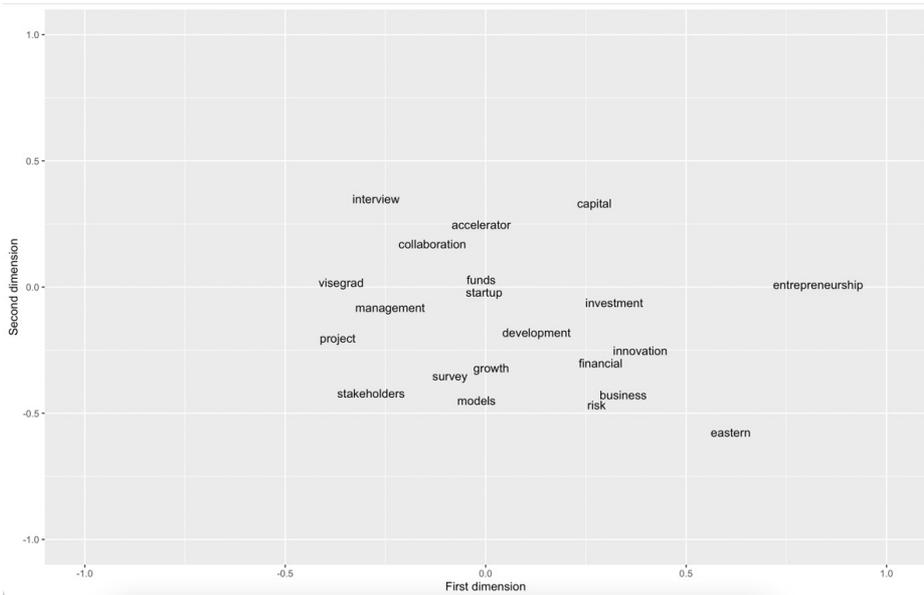
Source: own elaboration.

All this means that the texts strongly represent a regional conceptual network. The role of investors, investments, startup models, and the issue of collaborations appear very strongly in this conceptual regional network. The core elements of the conceptual network focus on entrepreneurship, development, growth, and financial investment. However, it can be seen that this network of interpretation is not uniform across the region. For example, studies in Hungary and Slovakia focus mainly on investments and startup models while research in Slovenia and Croatia focuses more on regional specificities.

The unification and synthesis of the conceptual network were performed by the method of word embedding based on unsupervised artificial intelligence learning. In the semantic analysis of relations, we used the previously explored topics, clusters, and results, so that the stretched narrative space consists of twenty-one lemmas (figure 10). In the multidimensional narrative space, the lemma denoting the twenty-one corpus is separated. Obviously, we do not

aim to sharply delimit the boundaries between relations but it is important to highlight the conceptual attributes of different corpus clusters.

Figure 10. Word embedding-based narrative space of the startup research corpus



Source: own elaboration.

As a result of the analysis, a very interesting circular narrative space emerges, in which, however, clear cluster boundaries are difficult to identify. It can be seen that the center of the conceptual space is occupied by the startup lemma which is naturally a central organizing element of the studies and the other concepts of the corpus emerge around this organizing point in concentric circles. The role of investments (“funds”) can be linked the closest to the concept. In the next circle, we find a diverse set of concepts that can still be linked to investments (“financial”, “investment”, “capital”) but they are also closely related to the examination of development directions (“development”) and growth (“growth”). The most positive and negative combinations of sentiment analysis (“innovation”, “risk”) are also in this circle. In this conceptual space, we also find the concepts of collaboration and management (“accelerator”, “collaboration”)

which are as closely related to the central startup concept as well as the concept of funds, but they apparently represent a completely different approach from that of the growth and model direction. From a methodological point of view, a particularly interesting result is that the quantitative research direction (survey) is more related to the words of business, finance, and development, while the interview methodology is more related to the accelerators and directions examining collaboration. It is important to point out that the two concepts are sharply detached from the narrative center: “entrepreneurship” on the one hand and “eastern” on the other are markedly distinct in the conceptual narrative. All this may mean that in the texts, startups are identified differently from the classical enterprises as well as the use of regional analytical aspects is extremely typical of startup studies in CEE.

As a summary of our research results, we publish the verification of our hypotheses (table 3). We rejected our hypotheses in all cases which means that based on the NLP analysis of the CCE startup research, the differences in the topic choices can be detected and the researches largely frame the topic not neutrally but with positive emotions while the CCE research uses a region-specific conceptual network in their research.

Table 3. Verification of hypotheses

Hypothesis	Verification	Method
H1	Not supported	TF-IDF
H2	Not supported	Sentiment and emotion analysis
H3	Not supported	Text scaling, Word embedding

Source: own elaboration.

Conclusion

In our study, we examined the scientific studies of the semi-peripheral CEE countries, with EU membership published on the topic of startups between 2015 and 2021, using text mining and unsupervised machine learning based on artificial intelligence. In our study, we looked at what descriptive statistics can be used to characterize these papers as well as our capture of the different thematization, emotion, and use of concepts trends in these studies.

Based on our results, it can be concluded that there is little research on startups in CCE in the international discourse. Countries can be characterized with low-average publications in English-language peer-reviewed journals. Researchers carry out researches based on qualitative and quantitative methods in almost the same proportion but very little research is conducted that includes longitudinal and international comparisons. The topics of the researches can be brought into line with the topics appearing in the global research narrative. However, it can also be seen that these topics appear in different proportions along the countries. of the region. The startup ecosystem is a topic that we encounter in almost all countries with a similar publication rate but for other topics, we can observe strong differences across countries. In a global comparison, it is also striking that some important topics (sustainability, gender, culture) are on the periphery of regional research. Based on the NLP study, it can be concluded that the studies work with strongly similar concepts across countries. There is an outstanding match for the entrepreneur/enterprise lemmas, the “startup” lemma, the “innovation” lemma, the lemmas of investment forms, and the development lemma. It follows from all this that we can see differences in the research focuses across countries in terms of topics but we find a high degree of matching in terms of vocabulary as well.

Researches follow a similar trend line in the emotional relationship to the startup topic. The “golden year” of the topic in CEE was the year 2018. In this year, researchers across the region placed startup studies in a very positive interpretive framework. However, this positive attitude seems to be steadily declining thereafter.

Scientific writings in the region also stretch a narrative space around the interpretation of the topic, described in a positive direction by innovation, support, success, and creativity and in a negative direction by high risk, scarcity, problems, failure, and difficulty. All this narrative space also affects the use of the concept which consequently forms a peculiar conceptual network in CCE. Unsurprisingly, the regional focus is very strong in the conceptual web as well as the role of investors, investments, the role of business models, and the issue of cooperation. The core elements of the conceptual network focus on development, growth, and financial investment.

In summary, this means that startup researches in CCE countries with a semi-peripheral economy follow global research directions with a focus on a much less turbulent economic environment. This has created a specific narrative space in research, characterized by a very positive attitude towards the topic as well as a specific CCE conceptual network which follows the global perspectives of interpretation but also includes a number of emphasis shifts.

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Internal Corporate Social Responsibility Preferences of Young Job Seekers with Regard to Sustainable HRM: Are These CSR Preferences Related to Their Personal Value Orientations?

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ABSTRACT

Objectives: In order to increase corporate social responsibility (CSR) activities with organizations, the support of employees in times of climate change is crucial: employees with CSR awareness of sustainability and their subsequent extra-role work behavior are an asset to an organization. Sustainable HRM promotes sustainable employee behavior. The purpose of this paper is to investigate the relationship between personal values orientations and internal CSR preferences which increase subsequent sustainable employee behavior fostered by sustainable HRM practices. Specifically, our central research question here examines the extent to which personal value orientations predicts internal CSR preferences towards sustainable employee behavior. In this paper, we look at this issue from the perspective of young, highly qualified job seekers who have to face issues of sustainability.

Methodology: We conducted an integrative literature review of empirical studies on internal CSR and sustainable HRM. In addition, we reviewed the application and relationship of Schwartz's personal values framework and employees' internal CSR preferences.

Findings: The findings conclude that the relationship between personal value orientations of employees and their preferences in the focus of the company's internal CSR is heterogeneous, as positive vs. negative paths between personal values and internal CSR preferences were identified. Further, different scales for internal CSR dimensions were applied.

Value Added: Based on previous studies we develop an integrative internal CSR framework (with employee vs. organizational dimensions) that could be applied in organizations to measure their internal CSR maturity level and be supported by the specific, sustainable HRM practices discussed.

In addition, we dealt with the question of how the connection between the personal value orientations of potential candidates or employees and their internal CSR preferences can be proven in field research.



Recommendations: Based on recent heterogeneous study results, we identify five research gaps and propose research design ideas for future research. Practical implications are also discussed.

Key words: internal CSR, personal value orientations, sustainable HRM

JEL codes: M12, M14, M50, J17

Introduction

In the 21st century, the United Nations' sustainable development goals (SDG, United Nations, 2021) form the foundation for corporate social responsibility (CSR). As a result of these goals, CSR is likely to play a central role in the strategy and business model of organizations as they rely on ever-changing, even shrinking resources and help to alleviate the increasing pressures of growing economic, social and environmental issues affecting the world. CSR as a strategy and framework has been discussed for many years and continues to persist in the extant literature (Allen & Craig, 2016; Pisani et al., 2017; Turner et al., 2019). In particular, a growing body of literature recognizes the importance of CSR and its contribution towards the triple bottom line (i.e., people, planet and profit) "for a more sustainable biosphere" (Renwick, 2018, p. 8), to achieve the SDGs (UN, 2021), and to address the "grand challenges" of our planet. CSR strategy could impact economic success, but goes beyond that as a common good approach with a higher purpose for our society and our planet rather than being a green-washing campaign (Aust, Matthews, & Müller-Camen, 2020).

CSR as a multi-dimensional concept is based on the stakeholder approach to sustainable business, fulfils an obligation of welfare to internal vs. external stakeholders, and impacts our society, our environment and economy (Carroll, 1979; Kolk, 2016). Glavas (2016, p. 2) defines CSR in general as "context specific organizational actions and policies that take into account the stakeholders' expectations and the triple bottom line of economic, social and environmental performance."

This CSR definition forms the basis for our review whereby CSR is differentiated into internal vs. external CSR. The internal stakeholder approach (i.e. internal CSR) includes an emphasis on employees, while the external stakeholder view (i.e. external CSR) focuses mainly on the marketplace, customers and community (Brammer, Millington, & Rayton, 2007; Brammer, Pavelin, & Porter, 2009).

External CSR benefits both society as well as the environment and can consequently promote awareness and perception of CSR among employees, leading to increased organizational commitment, work engagement and ultimately higher employee performance (Wang, Xu, & Wang, 2020 and Turner et al., 2019). Further, this external perspective could be supplemented by the community, supplier, customer, natural environment and shareholder orientation to a multi-dimensional CSR perspective, leading to increased work engagement and commitment (El Akremi et al., 2015). El Akremi et al. (2015) validated those specific dimensions to a CSR scale, whereas internal CSR was only defined by employee-oriented CSR.

Internal CSR, however, includes ethical and transparent action that contributes to the health and welfare of employees by regarding them as citizens of society (ISO 26000, 2010). Mory, Wirtz, & Göttel (2015, 2016, 2017) and Bustamante et al. (2020) identified a number of social preferences covered by internal CSR in relation to the employee vs. organizational dimension: these include work-life balance, social benefits, health & safety, training & development opportunities, diversity/equal opportunities, job security, and labor relations. Internal CSR benefits organizations by attracting future highly qualified candidates, and by developing and retaining employees (Rank & Contreras, 2021). For example, Kim et al. (2010) identified that active CSR participation directly influenced employee identification, which in turn impacted employee commitment in contrast to mere CSR perceptions. Ferreira & de Oliveira (2014) found that employees who were only exposed to internal CSR scenarios were more engaged than those who were only exposed to external CSR scenarios.

Here we focus on internal CSR to examine what CSR preferences employees have in a modern workplace. In order to strengthen and increase the internal CSR activities of organizations, the support and engagement of employees is crucial, especially of young, highly qualified job seekers who have to face the sustainability issues of the 21st century. This allows us to look from the perspective



of young, highly qualified job seekers. Due to demographic changes in Europe, young professionals with university degrees are rare and the war for talent (Chambers et al., 1998) is forcing employers to find, recruit, integrate and retain this talent. According to Aust, Matthews, & Müller-Camen (2020), Ehnert (2009) and Ehnert et al. (2016), sustainable human resource management with its strategies, policies and practices may increase the extra-role behavior of employees, i.e., recruiting candidates with a preference and attitude towards CSR, CSR training and sustainability awareness, and then further rewarding behavior which may ultimately contribute to the sustainable performance of the organization (“common good approach”). Since Green HRM is part of sustainable HRM (Wagner, 2013; Renwick, 2018; Paulet, Holland, & Morgan, 2021), which aims to improve the green behavior of employees, we believe that the overarching pillars of internal CSR, i.e., the environmental and social pillars, are worth considering as a way of contributing towards overall sustainability. Thus, the employee could contribute to both pillars of internal CSR with their pro-active behavior.

In particular, by defining internal CSR actions embedded in a sustainable HRM framework the organization could recruit CSR-motivated job seekers to encourage employee behavior to contribute to sustainable business strategies. Consistent with the person-organization (PO) fit approach (Kristof, 1996; Schneider, 1987; Schneider, Goldstein, & Smith, 1995), we recognize that personal values are fundamental to every hiring candidate. Personal values predict attitudes, preferences and behavior of individuals as underlying foundations and guide “what is good and worthy” (Sagiv et al., 2017, p. 1). Drawing together the three research strands mentioned above (i.e., internal CSR, personal values, sustainable HRM), our central research question examines the extent to which personal value orientations predicts internal CSR preferences towards sustainable employee behavior.

The remaining part of the paper proceeds as follows: firstly, we define internal CSR with regards to sustainable HRM as a key contributor to internal CSR; we argue that sustainable HRM practices could help to develop these altruistically motivated young professionals into CSR ambassadors within the organization in order to increase the overall sustainability of the organization to a higher level of maturity (Aust, Matthews, & Müller-Camen, 2020). Secondly, we review

the operationalization of the internal CSR construct and its preferences, and note how the construct with subscales has been applied differentially in studies and identify the need for further validation of the internal CSR preferences (Mory, Wirtz, & Göttel, 2015, 2016, 2017; Bustamante et al., 2020; El Akremi et al., 2015). Third, we examine whether the personal values orientations (Schwartz, 1992, 2014) of young job seekers predicts internal CSR preferences by reviewing existing literature. Finally, we conclude with an examination of the main directions for future research along with practical implications, responding to the call of Aust, Matthews, & Müller-Camen (2020) to make HRM more sustainable and to contribute to the growing theoretical base of sustainable HRM.

Internal CSR dimensions and sustainable HRM

Internal CSR includes ethical and transparent action that contributes to the health and welfare of employees as well as to society (ISO 26000, 2010). Employees can add value to organizational performance through their sustainable behavior (e.g., Ferreira & de Oliveira, 2014; Radwan, 2015; Obeidat, 2016; Low, Ong, & Tan, 2017; Soni & Mehta, 2020; Turker, 2009; Wang, Xu, & Wang, 2020). According to Aust, Matthews, & Müller-Camen (2020), internal CSR is an integrated part of a sustainable HRM approach by contributing to the overall sustainability of the organization in the current times of climate change. Through a high level of organizational engagement and sensitive actions towards the environmental and social pillars of internal CSR, all members of an organization can contribute to human transformation, e.g., by enhancing social work standards and achieving an awareness of and support for pro-environmental behavior (Aust, Matthews, & Müller-Camen, 2020; Rank & Contreras, 2021). This extra-role behavior beyond their day-to-day work is commonly referred to as organizational citizenship behavior (OCB) and has a strong impact on the implementation of sustainable business strategies (e.g., Dumont, Shen, & Deng, 2017; Paillé et al., 2014).



Sustainable HRM practices can support social and environmental goals. For example, sustainable HRM practices can support the recruitment of CSR-motivated job seekers, the setting of sustainable employee performance goals, and green awareness training to encourage managerial and employee behavior that contributes to sustainable business strategies (Amrutha & Geetha, 2020; Yong, Yusliza, & Fawehinmi, 2019). Hence, sustainable HRM is “the adoption of HRM strategies and practices that enable the achievement for financial, social and environment goals, with an impact inside and outside of the organization and over a long-term time horizon while controlling for unintended side effects and negative feedback” (Ehnert et al., 2016, p. 20). Aust, Matthews, & Müller-Camen (2020) argue that the goal of sustainable HRM is to develop an integrative framework with the pillars of internal CSR so that the organization can monitor its level of maturity. In short, sustainable HRM can foster an attractive, sustainable, greener and more socially minded employer than before by creating a positive candidate and employee experience for the social cause (Deloitte, 2017). Thus, internal CSR should be an integrated part of a sustainable HRM approach as suggested by Aust, Matthews, & Müller-Camen (2020) and Turner et al. (2019).

As the theoretical foundation of our research question, we now discuss six different, integrative approaches to show the importance of the fit between individual personal values and internal CSR preferences with regard to sustainable HRM of a company. The first three of the six approaches deal with sustainable HRM, while the fourth through to sixth approaches examine the value congruence (fit) of employee and employer concerning internal CSR which is fostered by sustainable HRM practices.

First, in their multi-stakeholder perspective Stahl et al. (2019) favored an active contribution of sustainable HRM practices to the organization’s CSR strategy by applying two sides of the same coin: (1) by doing good and (2) avoiding harm for the organization. On the one hand, sustainable HRM practices ‘by doing good’ could focus on recruiting candidates with a high sensitivity to personal values or providing green training fostering sustainable innovation for the organization. On the other hand, Stahl et al. (2019) argue that unethical acts that harm the sustainable organizational strategy should be punished by the top management team (e.g., past gasoline scandal in the automotive sector).

Second, in line with the 'doing good' approach of Stahl et al. (2019), Piwowar-Sulej (2021) provided a review of the HRM practices that influence the environmentally-friendly behavior of employees and therefore act as enablers of sustainable HRM. These practices included recruitment and selection, performance appraisal, compensation, training and development and HR staffing. Piwowar-Sulej (2021) notes the impact of these practices and argued that they should be implemented in order to strengthen internal CSR awareness and the pro-active behavior of employees.

Third, various studies have examined how employee behavior can contribute towards the environmental goals of CSR (Renwick, Redman, & Maguire, 2012; Renwick, 2018). Renwick (2018), for example, linked Green HRM processes with the ability, motivation, and opportunity (AMO) theory (Appelbaum et al., 2000) since Green HRM is understood as a subset of sustainable HRM (Wagner, 2013; Renwick, 2018; Paulet, 2021).¹ By applying the AMO model employees should increase their green skills (abilities) through green training, employee motivation should be promoted through targeted performance reviews and rewards, and employees should gain opportunities for green behavior through active participation and engagement in voluntary green projects. An integrative Green HRM framework was elaborated by Ren, Tang, & Jackson (2018) with antecedents, mediators, and outcomes on organizational and individual levels respectively. Paulet, Holland, & Morgan (2021) provide a comprehensive overview of Green HR practices within their review which includes Green recruitment and selection (e.g. Adjei-Bamfo et al., 2019), Green training (e.g. Stefanelli et al., 2019), and Green employee empowerment (Tariq, Jan, & Ahmad 2016). Furthermore, Malik et al. (2020) showed in China that Green HRM activities (perceived Green recruitment, selection performance appraisal and rewards, training) contribute to OCB, which is ultimately a mediator for sustainable

1 Cheema & Javed (2017) defined Green as follows: first, protecting the environment against negative change, loss and harm; second, safeguarding for the future cohorts on earth by minimal usage and conservation of the natural environment; third, avoidance of environmental pollution; and finally, avoidance of contamination of the atmosphere, water and air, and decrease of waste.



performance. Amrutha & Geetha (2020) and Yong, Yusliza, & Fawehinmi (2019) confirmed the linkage between Green HRM and organizational performance. Thus, we support the view that Green HRM could be integrated as a valuable component in a sustainable HRM approach.

Fourth, Jones, Willness, & Glavas (2017) elaborated on the interdependencies of three CSR levels in organizations (macro vs. meso vs. micro level). At the macro level the societal impact of CSR is in focus, while at the meso level the firm-level CSR practices and corporate performance is considered. We focus, however, on the third level of Jones, Willness, & Glavas (2017), the micro level, which deals with individual beliefs, values and behavior in the workplace, to explore the relationship between personal values and the internal CSR preferences of employees with regard to sustainable HRM.

Fifth, Haski-Leventhal, Pournader, & McKinnon (2017) in a recent evidence-based review suggest that the identity of the employer as an organization and the employee should be in congruence. They described this congruence as a dynamic continuum from “low” to “intertwined” CSR. Haski-Leventhal, Pournader, & McKinnon (2017) differentiated CSR into two perspectives of corporate vs. employee social responsibility. The latter covers our definition of internal CSR preferences from the employee perception, but is not consistent with the previous definitions such as ISO 26000 or Brammer, Millington, & Rayton (2007). Furthermore, when there is complete perceived congruence on corporate vs. employee focus, i.e. PO fit intertwined in their model, this leads to engagement and retention of current employees. Haski-Leventhal, Pournader, & McKinnon (2017) further elaborated this model in the form of a mediator model. The congruence of corporate and employee social responsibility is the mediator between engagement and organizational outcome like environmental, social and economic performance. Organizations can influence the level of congruence through sustainable HRM (i.e., recruitment, selection, etc.) resulting in long-term employee engagement. The distinction between corporate vs. employee focus sheds some light on the overall structure of internal CSR, which helps to separate the focus at an organizational vs. individual level (Mory, Wirtz, & Göttel, 2015, 2016, 2017). Consistent with the PO-fit approach (Kristof, 1996; Schneider, 1987; Schneider, Goldstein, & Smith,

1995), this proposed congruence of internal CSR fit of employer vs. employee (Haski-Leventhal, Pournader, & McKinnon, 2017) could be a key factor for sustainable HRM, e.g., by recruiting candidates with high values fit with employer's values, or existing staff with a high fit for internal green projects, or transforming the workplace culture into transparency and ethical values. However, which specific personal values of the employees could increase the congruence with the CSR values of the organization remains open and should be specified.

Sixth, Aguinis, & Glavas (2019) developed a mediator model with an underlying mechanism of "sensemaking" based on employee perception, in a similar way to Haski-Leventhal, Pournader, & McKinnon (2017). Derived from empirical findings, sensemaking is defined by the perceived meaningful work of the employees.² Aguinis & Glavas (2019) found that CSR operates on three levels: (1) intra-individual level: which concerns work orientation, ecological and community values, moral identity; at the (2) intra-organizational level: in terms of top-down vs. bottom-up CSR measures; and (3) extra-organizational level: culture, external stakeholders. When CSR measures are implemented in companies, then employees assess the meaningfulness of their work and their extra-role behavior, e.g., by getting involved in green organizational projects at these different levels. In line with our focus, Aguinis & Glavas (2019, p. 17) confirmed the importance of our central research question at levels 1 and 2: "Will the positive effect of environmental values on meaningfulness depend on work orientation such that the relationship will be stronger for individuals with a stronger calling orientation" (i.e., belong to meaning of work and altruistic value) "compared to those with a weaker calling orientation?"

2 Meaningful work (MOW) is a multi-dimensional concept about one's experience of the self-concept, personal growth and with a focus on being other-oriented (e.g., helping others and contributing to the greater good, Allan et al., 2019; Bailey et al., 2019). In their meta-analysis, Allan et al. (2019) reported that MOW strongly correlates with work engagement, commitment and job satisfaction; moderate with life satisfaction, meaning in life, general health and withdrawal intentions. Thus, MOW might be considered as a potential moderator for internal CSR preferences on organizational commitment.

In summary, the theoretical approaches show how the interplay of organizational vs. individual levels might contribute to an ethical work culture as part of internal CSR, sensemaking organizational purpose, sustainable HRM practices and meaningful work. Further, internal CSR with its subscales might clarify how maturity on the organizational vs. individual level could be enhanced.

Comparison of different internal CSR constructs

In seven studies, El Akremi et al. (2015) validated a general CSR scale including an external vs. internal focus which impacted the organizational commitment mediated by organizational support. From an internal CSR perspective, only the employee-oriented CSR dimension was considered. This has to be viewed critically because the external dimensions focused on five subdimensions (e.g., community-oriented, natural environment-oriented, supplier-oriented, customer-oriented and shareholder-oriented CSR).

According to ISO 26000 mentioned earlier, the social pillar of internal CSR includes the following internal HR practices such as (1) work-life balance; (2) health and safety; (3) training and development opportunities; (4) diversity and equal opportunities; (5) job security and labor relations, but these are each operationalized differently in studies as preferences (Glavas, 2016; Mory, Wirtz, & Göttel, 2015, 2016, 2017; Wang, Xu, & Wang, 2020). Due to the Green HRM research (Renwick, 2018; Ren, Tang, & Jackson, 2018), the environmental pillar should be integrated into the internal CSR framework. The next issue in our review is therefore an overview of existing internal CSR constructs and their sub-scales. In our further discussion we focus on the main studies by Bustamante et al. (2020) and Mory, Wirtz, & Göttel (2015, 2016, 2017) who elaborated different internal CSR constructs, and subscales (i.e. preferences), examining in particular what they have in common and where they differ.

Bustamante et al. (2020), for example, showed that some preferences belong to the workplace category of internal CSR, while the others are linked

to the employee responsibility category of internal CSR (see figure 1). They also differentiated between non-CSR and CSR preferences, which, however, corresponds neither to ISO 26000 nor EU definition (2008, 2011) cited earlier for internal CSR. They argue that some preferences directly affect employees' self-concept and enhance individual self-enhancement values (e.g., workplace attractiveness, employee responsibility), whereas other dimensions (like responsibility towards society and environment) rely on the doing good perspective such as self-transcendence values. This distinction of personal values derives from Schwartz's value approach (Schwartz, 1992, 2003; Schwartz et al., 2012).

In contrast, Mory, Wirtz, & Göttel (2015, 2016, 2017) identified two independent factors (employee vs. organizational CSR dimension) in several studies that form a latent construct of internal CSR (an orthogonal factor with these two dimensions). In addition, the employees' perception of the overall internal CSR factor impacted their assessed affective commitment, which supports sustainable HRM research (e.g., El Akremi et al., 2015). However, the environmental pillar was less represented within internal CSR dimensions, see figure 1.

Overall, the internal CSR dimension of Mory, Wirtz, & Göttel (2015, 2016, 2017) differs from that of Bustamante et al. (2020); however, we have sorted these internal CSR dimensions according to similarity in content (see figure 1). Further empirical validation will be necessary in future studies to determine which of the internal CSR dimensions contribute to the internal latent CSR construct.

Figure 1. Comparisons of internal CSR dimensions

Bustamante et al. (2020):	Mory, Wirtz, & Göttel (2015, 2016, 2017):		
Workplace attractiveness <ul style="list-style-type: none"> Salary and material wealth Career opportunities Work atmosphere Challenges at work and task variety Participating in decisions Independence & ownership Continuing staff education & training 	<ul style="list-style-type: none"> Work environment Capabilities & competencies Job security Diversity Work life balance Employee involvement Responsibility in the job 	Employee CSR	Internal CSR
Responsibility towards employees <ul style="list-style-type: none"> Services to advance security & health Work life balance / family friendly policies Job security / social services Fairness and anti-discrimination policies 			
Responsible corporate management <ul style="list-style-type: none"> Corporate transparency Ethical principles Stakeholders' concerns Fairness towards partner, suppliers & competitors 	<ul style="list-style-type: none"> Transparency Ethical values Fairness Engagement / Corp. Mission 	Organizational CSR	
Responsibility towards society and environment (i.e., external CSR) <ul style="list-style-type: none"> Social engagement Volunteer programs Energy & resource efficiency Reducing emissions Eco-friendliness of products Green and social issues in supply chain Commitment to sustainability standards 	(Missing the environmental pillar with sustainable and Green HRM, e.g., HR concepts supporting employee green behavior)		

Following the PO fit approach (Kristof, 1996; Schneider, 1987; Schneider, Goldstein, & Smith 1995) we can learn from internal CSR evidence which aspects of a potential employer can attract highly skilled job seekers as potential candidates so that they increase their intention to apply (Aguinis & Glavas, 2019;

Haski-Leventhal, Pournader, & McKinnon, 2017). From a sustainable HRM perspective, these target groups could fit the CSR values of the employees vs. the organization (Mory, Wirtz, & Göttel, 2015, 2016, 2017) and could act as CSR ambassadors for the organization's sustainability projects in the future.

As mentioned earlier, previous research on the impact of CSR on organizational attractiveness operationalized internal CSR heterogeneously (as well as external CSR, Gond et al., 2010; see Glavas, 2016 for a complete review). To show how internal CSR is perceived by young job seekers and impacts their job decision or organizational attractiveness rating, we summarize the most important studies below (for a recent overview see Rank & Contreras, 2021).

Ng & Burke's (2005) study of MBA job seekers focused on whether internal diversity management programs influence job selection decisions. Women and ethnic minorities rated diversity management as important when accepting job offers. Jones Willness, Madey (2014) tested the signal-based mechanisms of CSR on job seekers' interest and found that the value congruence between the candidate and the organization is another facet related to CSR. Gully et al. (2013) examined job seekers as to whether CSR activities in the area of social and environmental responsibility of organizations had an impact on their job choice. The findings suggested that the impact on job choice depended on the intentions of the job seeker and their own desire to have a significant impact on their work. Montgomery & Ramus (2011) showed that MBA students (Millennials) in the US and Europe gave intellectual challenge (internal CSR) the highest priority when asked about job factor preferences. In addition, the organization's reputation for internal care for employees and ethics for products and services played a key role in the choice of employer. Catano & Morrow Hines (2016) conducted an experiment with Canadian students and showed that the effect of CSR activities and psychologically healthy workplaces increased the employer attractiveness; in addition, they found that personal values such as openness moderated this relationship. Finally, Zhang et al. (2020) found that the influence of social CSR on organizational attractiveness is mediated by the cognitive and affective perceptions of employees in China.

In summary, these studies have operationalized dimensions of internal CSR in various ways, but revealed that internal CSR preferences might play a role



when choosing a job in an organization. In particular, as operationalized in the studies discussed above, some preferences of internal CSR (i.e., intellectual challenge, caring about employees, personal development, flexible work time, diversity / equal treatment) significantly influenced the attractiveness of the employers as well as employee's organizational commitment. These preferences can be assigned to the dimensions of employee responsibility and workplace by Bustamante et al. (2020) and on employee CSR and ethical behavior on the organizational CSR dimension by Mory, Wirtz, & Göttel (2015, 2016, 2017). This is consistent with the ISO 26000 standard for internal CSR at an individual micro level (see Jones, Willness, & Glavas, 2019).

Having presented evidence for internal CSR and the importance of these preferences in establishing modern workplace attractiveness and culture, we now move closer to our central research question of whether the personal values of potential candidates or current employees could predict their internal CSR preferences.

Personal values as a predictor for internal CSR preferences

Schwartz (1992, 2014) developed a theory of basic values from intercultural research, which comprises 57 values items, and grouped them into ten different types of values that are important for human life: universalism, benevolence, tradition, conformity, security, power, achievement, hedonism, stimulation, self-direction; and divided them into four clusters: self-transcendence, conservation, self-enhancement and openness to change. Sagiv et al. (2017, p. 1) argued that these values predict attitudes, preferences and behavior of individuals as underlying foundations and give direction as to "what is good and worthy", are trans-situational goals, and act as guiding principles.

The connection between these values and sustainable behavior in companies has been tested in a number of studies (see a review by Rickaby, Glass, & Fernie, 2020). We base our research questions on Schwartz's value orientations

model and ask to what extent personal values orientations predict internal CSR preferences towards sustainability; in particular, which personal values are predictors for the different internal CSR preferences (compared to figure 1)?

Evidence of the interplay between Schwartz's values and CSR preferences (i.e. mix of general vs. internal vs. external CSR) is primarily provided by studies with students. The evidence is based in particular on the student sample and their willingness to engage in community initiatives. Since the (internal vs. external) CSR preferences were operationalized differently in these studies drawing comparisons are problematic. Thus, after discussing this evidence, we will transfer these findings to the internal CSR perspective as there may be a research gap for internal CSR and its presumed link to personal values which we will address within our conclusion. In keeping with the focus of our research question, the universalism and benevolence of Schwartz's value model might be important predictors for internal CSR belonging to the 'self-transcendence' cluster, as the following studies may support this notion.

Evans & Davis (2011, p. 1), for example, carried out an experiment with students in the USA which showed that "perceived corporate citizenship impacted the job applicants' attraction for those individuals who received prior education regarding CSR and for those who were higher in other-regarding value orientations."

In a further experiment in the USA, Kim & Park (2011) operationalized CSR as a communal program sticking to the social pillar of CSR only and a fictitious PO fit was presented and rated by the students as job seekers. The degree of PO fit mediated between (good vs. poor) CSR reputation and organizational attractiveness or intent to apply.

Among Taiwanese students in the study by Lin et al. (2012), they perceived that corporate citizenship of real and successful Taiwanese companies impacted the job seekers' perceived firm attractiveness and, interestingly, potential career success expectations of the students' job applications. These findings contradict the argumentation of Bustamante et al. (2020) that doing good like citizenship is based on self-transcendence and not on self-enhancement values. But corporate citizenship was operationalized based on the CSR concept of Carroll (1979, economic, legal, ethical and philanthropic citizenship), i.e., specified as the external and not the internal view of CSR.

Wang & Juslin (2011) examined the relationship between value patterns and CSR perceptions of Chinese university students. The results showed that the altruistic values of the Chinese students are negatively associated with their perceptions of CSR performance, whereas the egoistic values are positively associated with CSR. Further, the well-known gender effect on CSR attitudes was shown based on earlier studies that women are more in favour of CSR than men (e.g. Ng & Burke, 2005). For these Chinese students, social and economic responsibility was overall more important than environmental responsibility. Wang & Juslin (2011) conclude that CSR education is culture-specific and needs to be tailored to the target group, as they had less knowledge about CSR at the time of the study.

In a cross-cultural study involving 17 countries, Mueller et al. (2012) found that certain cultural dimensions increased the influence of CSR preferences on affective commitment (Mory, Wirtz, & Göttel, 2015, 2016, 2017): human orientation was the strongest moderator followed by institutional vs. in-group collectivism, future orientation and low power distance on affective commitment (see House et al., 2004). The CSR construct was a general scale of some internal vs. external CSR characteristics (i.e., a mixture of CSR characteristics by Bustamante et al., 2020).

González-Rodríguez, Díaz-Fernández, & Simonetti (2015) showed that Spanish social sciences' students with higher ethical values (universalism and benevolence) displayed positive perception of social initiatives; the typical gender effect accompanied this pattern (higher for women).

In two experiments with young job applicants, Rupp et al. (2013) revealed that the impact of CSR (communal and environmental pillar) on organizational citizenship behavior was mediated by distributive justice. Furthermore, the desired moral identity of job seekers e.g., "caring, compassionate, fair, friendly, generous, helpful, hardworking, honest, and kind" (Rupp et al., 2013, p. 907) interacted with the CSR preferences in relation to the intentions of the job search.

Pereira, Duarte, & Trindade (2015) examined the relationship between Schwartz's values, CSR preferences and work engagement of Portuguese students. The path of CSR's preferences and work engagement was confirmed for the specific CSR dimension workplace and marketplace, but the relationship between personal values and the different CSR dimensions was surprisingly

negative; however, specific employee characteristics (age and seniority) positively predict CSR preferences and work engagement in general.

Hameed et al. (2016) examined dual mediating paths (via internal respect vs. external prestige) of internal vs. external CSR on employee identification. In line with Aguinis & Glavas (2019), the calling orientation (part of the meaning of work) moderates both pathways of mediation, giving us some clues to personal values and motivation. However, the interplay of work meaning (Steger, Dick, & Duffy, 2012) with Schwartz's personal values is another avenue of research (see Ros, Schwartz, & Surkiss, 1999).

In an international study in 21 countries, Haski-Leventhal, Pournader, & Leigh (2020) examined the effects of responsible management education on CSR. These effects related to the students' values in self-transcendence, the development of conservation values and a positive attitude towards CSR. CSR attitudes served as mediators for students' CSR behavioral intentions (willingness to sacrifice salary in order to work for a responsible employer). Thus, the values and attitudes of the students played an important, mediating role between the countries. The typical gender effects were shown, but none of age and work experience on the dependent variables.

For young job seekers, Bustamante et al. (2020) argued that the choice of employer depends heavily on the applicant's own well-being, choosing preferences like flexible work time models, development opportunities, as opposed to the other CSR preferences like employer's environmental or social well-being. Based on their results, the preferences such as workplace attractiveness (see figure 1: highest values for employee responsibility or work environment) are shown as drivers for the choice of employer. In Bustamante et al.'s (2020) study one of Schwartz's self-transcendence values (i.e. universalism) had an effect on internal CSR preferences. The first part of an assumed mediation model was tested in this study, and doing good values (i.e., self-transcendence in contrast to self enhancement values) influenced certain CSR preferences (workplace, socio-ecological responsibility and governance & ethics, see figure 1). However, a confirmatory factor analysis should be conducted to examine the proposed latent CSR subscales shown in figure 1. Bustamante et al. (2020) differentiated between non-CSR vs. CSR preferences without reporting evidence as



this distinction is inconsistent with previous terminology (Brammer, Millington, & Rayton, 2007; EU, 2008, 2011; ISO 26000; Mory, Wirtz, & Göttel, 2015, 2016, 2017). Furthermore, the influence of the mediators on the intention to apply or the attractiveness of the employer should be tested as dependent variables.

In our discussion, samples of students in different regions (USA, Europe and Asia) were examined on the central research question we outlined earlier. We have briefly summarized specific research results on the relationship between personal value orientations and CSR preferences, mostly operationalized heterogeneously with internal vs. external CSR. Thus, different results of positive vs. negative pathways were identified. For this reason, there is a need for further research to examine the relationship between personal values orientations and internal CSR preferences of young job seekers. Moreover, in the focus of the reviewed studies, the following personal values appear to be relevant: self-transcendence vs. self-enhancement of Schwartz's approach (e.g., Bustamante et al., 2020; Haski-Leventhal, Pournader, & Leigh, 2020; Hameed et al., 2016).

Conclusions and directions for future research

In order to precisely determine the relationship between personal value orientations and internal CSR preferences of potential candidates and employees, the following suggestions should be further researched. First, the operationalization and validation of the internal CSR construct differs. Future research could test the internal, latent CSR construct based on employee vs. organizational factors (Mory, Wirtz, & Göttel, 2015, 2016, 2017; Bustamante et al., 2020). After the validation phase, this internal CSR scale can be a solid analytical tool for companies to assess their degree of maturity of internal CSR. Sustainable HRM practices (see Piwowar-Sulej, 2021) could be integrated to foster organizational values for CSR (Mory, Wirtz, & Göttel, 2015, 2016, 2017) and increase the internal CSR maturity level. Further, across seven countries Sargisson, de Groot, & Steg (2020) showed that socio-demographics had less influence on personal

values (i.e., altruistic vs. egoistic values); only gender was a strong influencing factor. It is therefore important to examine the influence of personal values, for example, on behavioral climate change campaigns by choosing ambassadors with strong personal values (e.g., self-transcendence). Good advice is to follow the congruence model of Haski-Leventhal, Pournader, & McKinnon (2017). For example, a scale could be developed to examine the internal CSR construct assessing the sustainable level of HRM in order to improve the sustainable behavior of employees. In addition, this PO value fit tool could support the search for potential employees for initiatives such as Green campaigns. Should this personal value-internal CSR-path be confirmed by validation in future studies, this value analysis tool could be designed as a cultural matching tool for potential candidates on the organization's website in order to check the degree of the candidate's organizational value fit.

Second, a mediation study design should be conducted for proofing the power of values prediction on CSR preferences as mediators on employee outcomes. The mediation model could be extended by mediators such as meaningful work or sustainable psychological empowerment resulting in outcomes such as employee social and ecological performance or work engagement or intention to stay. However, Purc & Laguna (2019) showed that the values of self-enhancement and openness to change (as opposed to conservation and self-transcendence values) are related to perceived job autonomy in the workplace, acting as mediators between these personal values and their innovative behavior. They conclude that the specific personal value set is of importance based on the specific work situation in which employee behavior is required. An experimental research design with various fictitious employer descriptions could be a further step to test the influence of the independent variable personal values on internal CSR vs. non-CSR preferences of a fictitious employer.

Third, the cross-cultural perspective should be included, which focuses on samples from different nationalities and cultures (Mueller et al., 2012). Due to this cultural perspective, specific cultural dimensions, i.e. collectivism and human orientation, might be drivers for CSR activities in the same vein as we argued for the impact of personal values (Schwartz, 2014) on internal CSR. However, self-enhancing values could weaken this path. Witte, Stanciu, &

Boehnke (2020), however, criticized Schwartz (2014) for comparing cultural values within (across) cultures, sticking to the distribution instead of the averaging approach. Based on their results on the intercultural comparison of Schwartz's value preferences, they postulated a two-dimensional structure: a) alteration vs. preservation and b) amenability vs. dominance. Schwartz & Rubel (2005) found that the typical gender differences in personal values was moderated by cultural dimensions in an unexpected pattern. Schwartz & Rubel (2005, p. 1023) argued that for countries with less gender equality "increased independence and equality of women in the labor force may encourage them to express distinctive values rather than to accommodate their values to those of their husbands". Whether there is a significant relationship between Schwartz's personal value orientations and the cultural dimensions of House et al. (2004) should be tested in future cross-national studies as Mueller et al. (2012) have applied. Across seven European countries, Sargisson, de Groot, & Steg (2020) identified the typical gender effect rather than an age or country effect on Schwartz's value orientations (i.e., altruistic, biospheric, and egoistic values). Therefore, further research is needed to assess both personal and cultural values and to test how they interact with each other to answer our open question: Who are the future potential talents in society and organizations pushing the activities against the climate change?

Fourth, in addition to student surveys, international organizational samples should be used in different sectors in order to test the mediation path on affective commitment in a field study such as Mory, Wirtz, & Göttel (2015, 2016, 2017). Then it might be possible to expand the perspective from the job seekers to the employees and to develop sensemaking internal CSR measures for organizations. This could therefore serve as a guide on how a cultural shift towards sustainability should be addressed and implemented, along with a change in people's mindsets and behavior. Finally, based on the different CSR concepts from Aguinis & Glavas (2019), Haski-Leventhal, Pournader, & McKinnon (2017) and Stahl et al. (2019), sustainable HRM should be integrated into an overall framework that includes the individual, team, and department level as well as organization and community. What we could learn from these concepts for the implementation of internal CSR measures in organizations is to consider

the interaction of different levels for a trustworthy and sustainable success instead of a greenwashing campaign. For example, Li et al. (2020) showed that transformational leadership increases environmentally conscious behavior in employees, which was mediated by employees' environmental passion and autonomous motivation.

As the clock ticks fast for climate action to enable our next generations to survive on our planet Earth, as early adopters, those committed to sustainable action can mobilize the other organizational population (i.e., the early and late majority) to implement the SDGs in companies and our society.

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Resources, Intangible Assets, Competencies, Capabilities and Algerian SMEs' Performance: Strategy as Mediator

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ABSTRACT

Objective: The object of this study is to empirically examine Small and Medium Enterprise (SME) performance through the prism of strategic management theory.

Methodology: We apply Resource-Based-View into our research to explain the relationship of a firm's performance with Resource factors and firm strategy. Fifty Algerian SMEs from the northwest region are targeted and PLS statistical analysis is applied to produce valid results.

Findings: Results show a direct positive relationship between firm strategy and resource factors with a firm's performance. A direct positive relationship of resource factors with firm strategy is also recorded. However, the mediator role of the strategy is rejected.

Value Added: Research on Algerian SMEs' performance has intensified in recent years, but few empirical studies have explored the influence of environmental, resource, and strategy factors related to performance.

Recommendations: The study makes a compelling case for strengthening government intervention alongside national Algerian SMEs, particularly those belonging to the industrial sector. It is an intervention that will specifically target the improvement, or even the simplification of the tax or quasi-tax system, banks' credit standards flexibility (financial resources), and above all, substantive managerial support that could allow our SMEs to manage their resources better and acquire and develop new ones to provide higher performance.

Key words: strategy, SME Algerian, performance, resource-based view, PLS-SEM technique

JEL codes: L1, L19, L26, M19

Introduction

In Algeria, the SME sector, which has today become of critical importance to industrial growth and development, remains the only solution to steer the

country out of the current economic crisis due to the fall in oil prices. In the first half of 2019, the Ministry of Mines and Industries indicated that 1,171,945 SMEs exist – of which 1,136,787 are VSCs, 30,471 are SCs, and only 4,688 are MSCs – which contribute over 99(%) of employment in terms of employer-employee (Statistical information bulletin, Ministry of Mines and Industries, November edition, 2019), and about 77(%) of value-added targets for 2015 (Benhamed & Lohous, 2017, p. 14). Algerian SMEs that remain concentrated in trading, service, construction, and agro-food activities are known not only for their “weak financial structure, lack of technical, professional and managerial skills, lack of reliable and up-to-date information, lack of structural flexibility and specialization, poor engagement in R&D, and subcontracting activities” (Si Lekhal, 2013, p. 47) but also for their unique entrepreneurial characteristics, and their lack of marketing competencies (Benzazoua, Ardjouman, & Abada, 2015, p. 109). Furthermore, Algerian SMEs are subject to numerous constraints in the ordinary course of business, particularly the bureaucratic public administration (Mebtoul, 2017, 2016); the informal market dominance (Benhabib & Attalah, 2014; Mebtoul, 2009, 2017), as well as the financial system deficiency (Bounoua, 2011; Si Lekhal, 2013, 2012), as signs of an economic environment where business cannot thrive, remain the main operative events of such a situation.

From this bitter observation and following notably the lack of empirical research on Algerian SMEs, we offer the present paper as a contribution to analyzing Algerian SMEs’ performance in the broader framework of strategic management theory, a theory that is now dominated by two main principles and leading paradigms that remain contradictory even though they are complementary (Amit & Schoemaker, 1993; Henderson & Mitchell, 1997; Pribadi & Kanai, 2011; Spanos & Lioukas, 2001). If the SCP paradigm, or Porter’s (1980, 1985) five forces Model, explains performance variation of firms by industry factors, the Resource-based-view (RBV) focused more on their idiosyncratic resources (Barney, 1991).

Besides the multiple research efforts (Galbreath & Gavin, 2008; Garson, 2016; Hansen & Wernerfelt, 1989; Mauri & Micheals, 1998; O’Cass & Ngo, 2007; Subroto, Alhabsji, & Djumahir, 2014; Sylvie & Huang, 2010) that have prompted

a wide-ranging debate about the industry factors versus resources for firms performance, our contribution focuses per the available literature on the empirical validation of the RBV approach, in SMEs, particularly in developing countries. Unlike past research, dealing with a single category of resources, we propose investigating SMEs' performance in Algeria with a broader spectrum, which integrates the triptych Resources-Competencies-Capacities. Our objective is to address the algerian SME's performance issue as close as possible, for which perfection is required, in a business environment that is both hostile and uncertain.

The central hypothesis of our research is, therefore, based on the following observation:

- A relationship exists between the Resources and competencies heritage, strategic behavior, and the Algerian SMEs' performance.

Literature Review

Foundations of the Resource-Based-View (RBV)

It was a result of the very apparent increase in the complexity of the business environment in the early 1990s – due in particular to increased hyper-competitiveness, the development of a knowledge-based economy, and the prominent rise of Japanese firms that combined conflicting competitive advantages (time, cost, quality) – that strategic management theory would see the emergence of the resource and competence movement (RCM) (Barney, 1986; Wernerfelt, 1984, Grant, 1991; Hamel & Prahalad, 1990, 1994). The movement, whose hypotheses were in total contradiction with those formulated by the adaptation and positioning then current (first movement), dominated the arena of the strategic discipline by refocusing on the external factors of the environment, with reference to the competitive forces of Porter (1980, 1985). These factors would have to be better understood by companies, allowing them to choose

a favourable competitive position by choosing a particular value creation configuration (cost leadership/differentiation) and thus achieving a unique and sustainable competitive advantage.

The RBV's perspective states that the difference between firms is more often perceived exclusively in terms of resources provided, following its own exploitation model (Amit & Schoemaker, 1993; Grant, 1991), and which can allow it to derive a best effective service (Penrose, 1959). A mode whose originality lies in the existence of a set of complex organizational routines, of a tacit nature, stemming from a long organizational learning process (Grant, 1991), which is rooted in the history and culture of the company, thus giving the benefit of a strategic asymmetry (Hafsi & Martinet, 2007, p. 91), where innovation (product/process) prevails over the simple imitation of acts and facts.

"It is the environment that adopts the ex-post, the organizations surviving depending on the level of competition and the frequency of technological discontinuities" (Teece et al., 1994, as cited in Tywoniak, 1998, p. 4).

Under the assumption that the company is a set of resources and competencies, the founders of the RBV movement (Barney, 1986, 1991; Dierickx & Cool, 1989; Grant, 1991; Wernerfelt, 1984) linked competitiveness to the detention of some strategic resources described as valuable, rare, imperfectly imitable and not substitutable – as defined by Barney (1991) – and heterogeneous and imperfectly mobile with ex-ante limits (better information compared to the competition) and ex-post limits (isolation mechanisms) as stated by Peteraf (1993).

Theoretically, the term 'Resources' has received particular attention as it is widely used meaning (Huang, 2012, p. 16) bears witness to this. Specifically, Barney (1991) conceptualizes resources as "all assets, capabilities, organizational processes, firm attributes, information, knowledge, and so on controlled by a firm that enables the firm to conceive of and implement strategies that improve its efficiency and effectiveness" (Barney, 1991, p. 101). Wernerfelt (1984) instead categorized resources into two types, the tangible type which corresponds to physical resources, and the intangible type which refers not only to "culture, human capital, knowledge, but also databases, intellectual property rights, and personal and organizational networks" (Tournois, 2002, p. 07). In line with Hall (1992), it is the intangible resources owned by firms which

give them a differential capacity compared to the competition. The author indicated that there are two main types of intangible resources: "(i) assets that include contracts, licenses, intellectual property rights, trade secrets, reputation, networks, and databases, and which are the origin of differential regulatory capacity and position" (Hall, 1992, p. 144), and (ii) competencies of both "know-how (employees, suppliers, and distributors, etc.), and organizational culture (perception of quality, ability to manage change, perception of service, etc.) from which functional, and cultural capacities are derived, respectively" (Hall, 1992, p. 144). In furtherance of these views, other authors distinguish clearly capacity from resources. It was at that point that Grant (1991) indicated that "while resources are the source of a firm's capabilities, capabilities are the main source of its competitive advantage" (Grant, 1991, p. 119). In other words, it concerns "the capacity for a team of resources to work together synergistically" (Grant, 1991, p. 120). In this respect, it is considered a set of processes capable of allowing a better organization of resources.

Firm Resources and Firm Performance Strategy

Several empirical studies have examined the relationship between resources-strategy, and resources-firm performance over the past few years. In a study examining local authorities' performance in Israel, Carmeli & Tishler (2004) focused on intangible organizational elements and their interactions. The results confirmed a positive impact, including the link between perceived culture and reputation. An impact whose importance is relatively linked to the existence of synergy effects between these elements (Carmeli & Tishler, 2004, p. 1259). Alimin Ismadi et al. (2012) for their part tested the value of organizational resources, capacities, and systems to achieve a competitive advantage. Simultaneously, the three variables revealed a strong positive significance concerning the competitive advantage. In isolation, however, systems and capabilities are considered critical elements in gaining a competitive advantage at the expense of organizational resources. The dynamic capacities' value for strategic orientation (cost/differentiation) and the competitive advantage/performance of Portuguese SMEs firms were mentioned

by Barbosa Ferreira, Coelho, & Amorim Weersma (2019). The results demonstrate a positive-indirect link between exploration and exploitation capabilities and performance via managerial / innovation capacities and strategic orientation, an orientation whose positive impact on competitive advantage/performance was also recognized (Barbosa Ferreira, Coelho, & Amorim Weersma, 2019, p. 1). It can also be seen as a strong confirmation of intangible assets and capabilities – depending on tangible resources – as a critical source of performance provided by Galbreath & Galvin (2008) in their study of Australian firms. Al Mamun, Fazal & Muniady (2019) examine the relationship between entrepreneurial skills–market orientation, sales orientation and networking, and entrepreneurial competencies and Microenterprises' Performance in Malaysia. The authors have found a mediator effect, stressing the link of the entrepreneurial competencies to the market orientation and network-performance (Al Mamun, Fazal, & Muniady, 2019, p. 29). Furthermore, the intervention of Laosirihongthong, Prajogo, and Adebanjo (2013) uncovered a relationship between the differentiation strategy and (internal/network) resources, and between these same resources and innovation performance of Thai manufacturing. The authors reveal that the differentiation strategy leads to the development of internal/network resources, that internal ones are in a positive–direct link to innovation performance and mediate the link between resources network–performance (Laosirihongthong, Prajogo, & Adebanjo, 2013, p. 1231). Roostika (2019), for his part, tested SMEs' craft industry application of resource-based-view (RBV) in Indonesia. The author then explored the role of capabilities in their versions: innovation, marketing, and learning concerning performance. These three types of capacities positively influence the firms' performance under study (Roostika, 2019, p. 423). Barbosa de Almeida et al. (2013) analyzed, on the other hand, the organizational capabilities in their strategic, managerial, technological, and marketing configurations concerning strategy types, strategy formulation quality, and strategy implementation capability and organizational performance in Brazilian textiles companies. The results indicate a significant relationship between marketing capabilities and concentration strategy, managerial capabilities and cost strategy, managerial capabilities and financial performance, and strategy

implementation capabilities and strategy formulation quality. Despite this, so far, there is no link despite technological capabilities and differentiation strategies. With this in mind, a Chinese study revealed that marketing capabilities, in particular, seem to have a moderating effect on the relationship between entrepreneurial strategy and performance (Li, Zhang & Chan, 2005). A re-focusing on social capital and managerial links, which may form a link between owners/managers and community leaders, government owners/managerial, and political leaders, was undertaken by Acquaaah (2011). The findings therefore revealed significant positive moderating effects of community leaders and bureaucratic officials' relationships on business strategy and firms' performance in Ghana, as a source of resources, information, and knowledge. On the other hand, the negative moderating effects of political leaders are associated with tremendous mutual interests that may limit the advantage of new opportunities for these firms. Pribadi & Kanai (2011) noted a dual resource effect on SMEs' business performance in Indonesia. Thus, the resources turned out to be positively and directly linked to the performance, which has, in turn, a positive indirect relationship via strategy where the firms' resources affect not only the way but also the decision (Pribadi & Kanai, 2011, p. 104).

Business Strategy–Firm Performance Relationship

In strategic management, improving firm performance is associated with adopting a coherent strategic approach in business, which involves setting a “system consistent of goals and determining functional policies; aligning a business's strengths, weaknesses, environmental threats, and opportunities, focusing on developing and exploiting distinctive competences, driving forces for competitive success” (Gibcus & Kemp, 2003, p. 23). In developing countries, where emerging companies, being small businesses with a low level of resources (Hafsi & Gauthier, 2003, p. 6), a great interest was paid, in recent strategic management studies, to the concept of strategy. From an evolutionary point of view, the strategic principles have a significant impact on these companies' performance so that they “try to avoid competition by discovery; a sign of the strong development of the informal sector in these

countries” (Hafsi & Gauthier, 2003, p. 6). For this purpose, numerous empirical studies have been given. Jaoua (2014) had tested the level of adoption of strategic management practices in Tunisian SMEs under the upgrading program. The author, having taken note of the existence of the main functional strategies, and the genuine participation of middle managers in strategic decision-making, confirms real strategic management. Muogbo (2013) associated manufacturing companies’ performance in Nigeria with the existence of a structured planning mechanism, formulated policies, written vision/ asserted mission, and with the team who allocates and controls resources. For Kenya’s economic context, Otieno, Namusonge, and Mugambi (2017) demonstrate a positive-significant effect between the strategic management process (environmental analysis, formulation, implementation, and strategic control) and SMEs’ performance in Kenya. Moreover, a study by Gomera, Chinyamurindi, & Mishi (2018) aimed to endorse this view, which revealed a positive link between the strategic planning process and the financial performance of SMEs in South Africa, acknowledging the mentioned process as a *sine qua non* organizational capacity leading to a competitive advantage realization (Gomera, Chinyamurindi, & Mishi, 2018, p. 1). According to the study of Sirajuddin, Ridwan, & Jayadi (2017), in Indonesian SMEs, strategic planning, strategic execution, and strategic evaluation have a positive and significant impact on sales volume, BEP (break even point) achievement, and profits of SMEs. In opposite to that, the mission determination, and the strategic formulation do not have any link. Other scholars have proposed that strategic orientation represented by entrepreneurial orientation (innovation, proactivity, risk-taking) is perceived as a key resource, and source of competitive advantage/performance of SMEs in Nigeria (Abiodun & Isa Kida, 2016, pp. 206–210). Furthermore, it is a strategic entrepreneurship discussed in terms of entrepreneurial orientation (EO), entrepreneurial values (EV), knowledge creation process (KCP), which has been tested in relation to the performance of SMEs in Malaysia (Chai, 2014). This study has regarded entrepreneurial orientation (EO), among the three studied variables, as of paramount importance for the performance of SMEs (Chai, 2014, p. 5). Sidi Bello, Haim Hilman, & Manaf Bohari (2018) studied the relationship between business

strategy and firm performance of SMEs in Nigeria. Hence, the differentiation strategy as proven to mediate the relationship: strategic growth (Product/Market Expansion) – performance of manufacturing-based SMEs (Sidi Bello, Haim Hilman, & Manaf Bohari, 2018, pp. 133–135). Additionally, Aldehayyat & Twaissi (2011) examined the characteristics of the strategic planning system in small industrial firms in Jordan in relation to their performance. The findings were clearly combined strategic planning with superior financial performance. They reveal, among others, the existence of a plan for most business functions, a refocusing on financial and external analysis techniques (PEST analysis, Porter's five forces analysis, and Key Factors of Success (KFS)) – depending on internal analyses and other strategic analysis techniques – and line managers' involvement in the strategic planning process.

All of the above research deeply confirmed the importance of resources and strategy as determinants of a business's success. As for the Algerian SMEs, if most researchers agree to explain their fragility by the negative impact of external business environment factors (Abdi, 2009; Benhabib & Attalah, 2014; Si Lekhal, Korichi, & Gaboussa, 2013), the capital resources was also raised to be a success factor for minority businesses in excellent situations. Capital relations (Melbouci, 2006), financial ease, and modern management techniques usage (Tabet Aoul, 2012) are the most cited by the authors. Concerning strategy, even though the existence of a strategic consciousness, even hidden, has been confirmed by some authors (Melbouci, 2006), few studies have been devoted to analyzing Algerian SMEs' relationship strategy–performance. Based on these findings and all the results of the empirical literature review presented above, we will attempt to verify the impact of resources on the construct of strategy and then on performance, according to a setup of four main sub-hypotheses:

H1: There is a positive relationship between resources and performance of SMEs in Algeria.

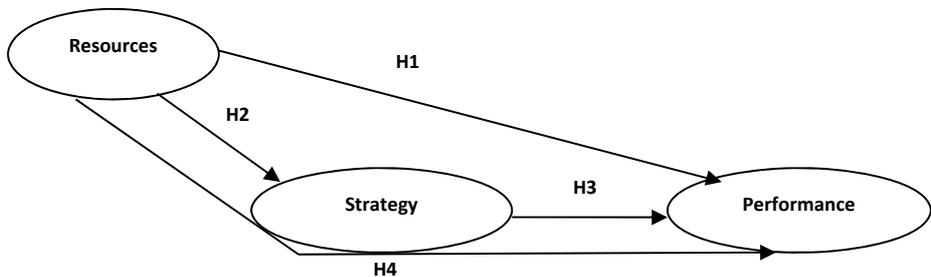
H2: There is a positive relationship between resources and a strategic mastermind within Algerian SMEs.

H3: There is a positive relationship between strategy and performance of SMEs in Algeria.

H4: There is an indirect relationship between Algerian SMEs' resources and performance via strategic practice.

The conceptual framework adopted in this research is presented in figure 1.

Figure 1. Conceptual framework



Source: own elaboration.

Operationalization of Resources, Strategy, and Performance

The construct of “Strategy” is operationalized in a single dimension, namely the degree of strategy adoption in business practices (S.A) (Jaoua, 2014; Muogbo, 2013), and the variable “Resources” is measured concerning the Galbreath & Galvin (2008) scale, which was inspired from Hall’s (1992) contribution. The capital “Resources” will then be represented in four sequences: tangible resources (T.R.), intangible resources (I.R) [intangible assets (I.A.), Competencies (C), and capacities (C.P)]. Finally, performance is also considered in two sub-dimensions: Market performance (M.P.) (Galbreath & Galvin, 2008), and profitability (P) (Spanos & Lioukas, 2001).



Research Methodology

To test the four sub-hypotheses and thus verify the research question (central hypothesis), a quantitative research method was adopted. To collect data, a questionnaire was distributed to a sample of 50 Algerian SMEs randomly chosen from three industrial zones throughout the western region. Data collection was performed via a five-point Likert scale, as follows: 1 = Strongly Disagree / 5 = Strongly Agree with the concept "Degree of Strategy Adoption in Business Practices", 1 = Much weaker than the competitor / 5 = Much more substantial than the competitor for the concept "Resources", and 1 = Much below average / 5 = Much above average for "Performance." Concerning statistical techniques used for data analysis, Partial Least Squares Structural Equation Modelling (PLS-SEM) Techniques were adopted to apply to smaller samples, allowing flexibility in terms of data distribution, and handling missing data. The questionnaire data were treated with SmartPLS 2.0 software for statistical analysis.

Results Analysis

This research aims to explore the relationship between Resources–Strategy–Performance at the sample of Algerian SMEs. The PLS-SEM Technique has two main stages: outer model assessment and inner model assessment/testing hypotheses.

Measurement Model Evaluation

The measurement model's evaluation process in its first step assessed by the PLS-SEM technique, and carried out under SmartPLS 2.0 software has proven to be significant. The reliability and validity of all measurement scales have been confirmed. Indeed, the results of Composite Reliability (C.R.) > 0.7 (Hair, Ringle, & Sarstedt, 2011), citing the recommendations of Nunnally & Bernstein (1994), is a proof of the constructs' reliability. The indicators' reliability was measured in terms of factor loadings. All factor loadings at threshold ≥ 0.7 (Garson, 2016, p.

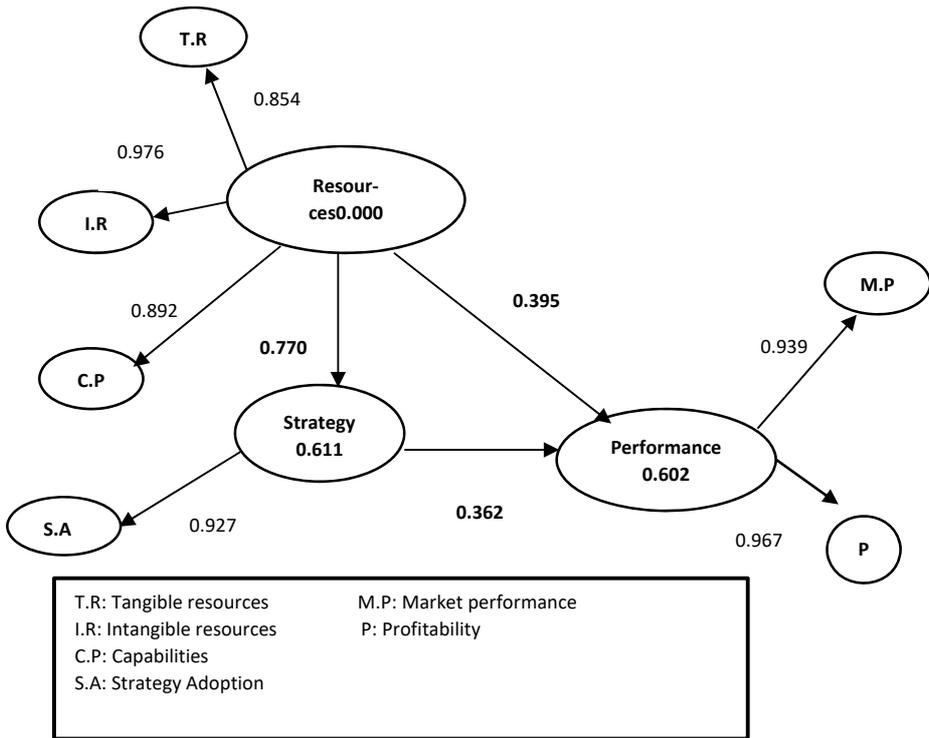
60), including the Student's t-test ($t \geq 1.96$) (Bäumli, 2014, p. 57), were accepted. However, thresholds greater than or equal to 0.6 (≥ 0.6) were retained because they were significant. Overall, three measurement items have been eliminated (see table 1 in Appendix B).

The convergent validity is examined since the set of AVEs (Average Variance Extracted) > 0.5 (Fornell & Larcker, 1981, p. 46). Regarding Discriminant Validity, Fornell & Larcker (1981) criteria were applied; i.e., each AVE value's square-roots were calculated. These should significantly be higher than correlation coefficients, linking them up with other constructs. Discriminant validity was also accepted (see details in table 1, Appendix B).

Structural Model Assessment

The structural model's quality of fit is estimated via two main indexes: *Coefficient of Determination (R²)* and *Goodness-of-Fit (GoF index)*. The values of *R²* of the two endogenous variables, "Strategy" and "Performance", are 0.611 and 0.602, respectively (figure 2). The *R²* Values > 0.1 , which can be considered satisfactory (Duarte & Raposo, 2010, p. 468), indicate a useful contribution of the independent variables in predicting the dependent variables. Regarding the *GoF index*, and for lack of any consensus, we will adopt the criterion that it is to be statistically significant; for this reason, we retain the opinion of Akter, D'Ambra & Ray (2011), according to which *GoF* is between 0 and 1 (Akter, D'Ambra & Ray, 2011, p. 4). The closer the *GoF* values are to 1, the more this indicates the model's quality of fit. Therefore, it should be noted that the *GoF* index is 0.62 (*GoF* = 0.62), and thus the evaluation of the structural model displays a good fit.

Figure 2. Measurement and structural model after applying PLS-SEM algorithm



Source: own elaboration.

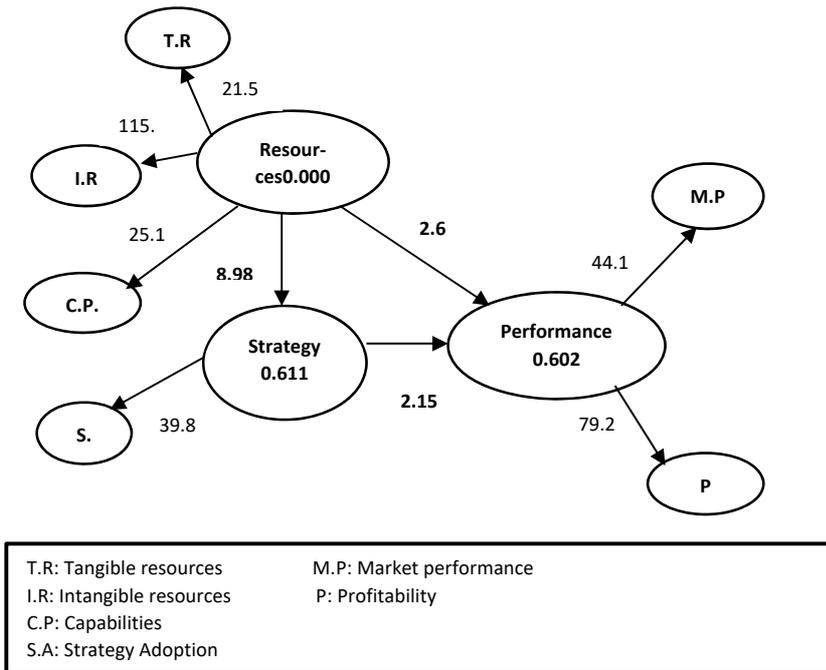
Testing Hypotheses' Results

According to the regression coefficients that describe the relationship between the independent variables and the dependent variables, and the *Student t-test* estimation by applying the Bootstrap method (figure 3), the following reports are observed:

- A positive / significant relationship is recorded between the constructs; Resource and performance ($\beta = .395$, $t = 2.67 > 1.96$), which confirms H1.
- A positive / significant relationship is noted between the constructs; Resource and strategy ($\beta = .770$, $t = 8.983 > 1.96$). Thus, H2 is retained.

- A positive / significant relationship is also admitted between strategy and performance ($\beta = .362, t = 2.159 > 1.96$). H3 is therefore accepted.

Figure 3. Measurement and structural model after the Bootstrap method application



Source: own elaboration.

Mediation Test Results: (Hypothesis H4)

To determine the mediator link in the relationship between *Resources–Strategy–Performance*, we performed a regression analysis by applying a Bootstrap method between the variable resources taken in isolation and performance, and subsequently inserting the construct “strategy” that is supposed to mediate the relationship, and lastly compared coefficients and their significance. The results clearly demonstrate a significant positive relationship between *resources* and *performance* ($\beta = .006; p = .005$), which is increased with the insertion of

the variable *strategy* ($\beta = .009$; $p = .005$). The *strategy-performance* relationship turns out to be negative – non-significant – ($\beta = -.02$; $p = .254$). We, therefore, conclude that there is no mediation at all.

Results Discussion

The present research implies the existence of a relationship between Resources–Strategy–Performance of Algerian SMEs. All the connections have been proved positive. Our results confirm several empirical research topic connections and invalidate others. Thus, the importance of tangible resources as a critical source of performance will appear clearly in the Ichrakie (2014) study conducted on Australian business service firms. Physical and financial assets have been positively correlated with market performance and financial performance; respectively. In contrast, Galbreath & Galvin (2008), and Pribadi & Kanai (2011) conclude that the firm's performance has a mediocre interest on tangible resources. A conclusion strongly approved by Kapelko (2006), has affirmed that the intangible category among resources and relatively young firms, with evidence from Polish and Spanish textile and clothing sectors, outweighs the disposal of tangible assets, in terms of achieving superior performance (Kapelko, 2006, p. 24). Our results relating to intangible resources in both forms: intangible assets/competencies, receive more support as a source of superior performance than has been highly acknowledged by many scholars. In the case of Nigerian firms, management, knowledge, reputation, and culture are confirmed (Okpara, 2015, pp. 15–17); while in the case of Israel's local authorities, culture and perceived reputation are validated (Carmeli & Tishler, 2004), and intellectual capital with its three dimensions – human, structural, and relational capital – is shown in the case of Thai firms (Ingpochai & Digman, 2009). In terms of the competencies axis that has been drawn with its forms (managerial/entrepreneurial, and marketing), our results share the view of Li, Zhang, and Chan (2005) and Al Mamun, Fazal, and Muniady (2019) on marketing competence and entrepreneurial knowledge and skills. Also, Md Daud, Ahmad Khairy, and Azwardi (2014) find

strong support for Managerial competence, having revealed its importance in both relationships' quality and competitive advantage in Export Performance of SMEs in Indonesia (Md Daud, Ahmad Khairy, & Azwardi, 2014, p. 138). Regarding the construct "capacity", the findings of Alimin Ismadi et al. (2012), Barbosa Ferreira, Coelho, & Amorim Weersma (2019), and Roostika (2019) are indeed in line with our results. Interest is also being shown respectively for business systems and organizational capabilities, exploitation and exploration capabilities, managerial capabilities, innovation capability, marketing capability, and learning capability. Though opposed to semantic use, an empirical study carried out by Sajilan & Tehseen (2019) also values the role of network competencies (*Building the Supplier-Distributor Partnership's Capacity, and Managing the Supplier-Distributor Networks' Capacity*, examined in the course of our research) for Chinese wholesales performance in Malaysia through entrepreneurial innovation. Finally, our findings concerning the Resources–Performance relationship's validity were consistent with two empirical pieces of evidence in the Algerian context. Relational capital (friendly-social relations developed by Algerian owner-managers) (Melbouci, 2008) and marketing capacities, managerial resources and internal relational resources (Haddoud et al., 2019), as the main determinants of Export Performance in Algerian SMEs, as well as external relations, were found to be significant precursors for firms' export regularity (Haddoud et al., 2019, p. 50).

Our results regarding the Resources–Strategy relationship were consistent with the existing literature. Nevertheless, the emphasis is placed principally on intangible resources as the best suited to support or even to apply strategic thinking in business. It was at that point that Rajasekar (2014) demonstrated that leadership (intangible resources–competencies) is of paramount importance for strategy implementation processes in a service industry in the Sultanate of Oman (Rajasekar, 2014, p. 169). Brenes, Mena, & Molina (2008), and Ahmadi et al. (2012), validate our results, on the firm culture side (as cited in Rajasekar, 2014, pp. 171–172). According to those authors, firm culture is vital to the successful implementation of a company's strategy. Additionally, 86% of the companies studied by Brenes, Mena, & Molina (2008) attribute their superior performance to the coherence between the firm's strategies and its culture (Rajasekar, 2014, pp. 171–172). Studying factors influencing strategy implementation among flower firms in Kenya, Alfaxard (2013) admitted

the significance of organizational capabilities, and the adoption of key performance indicators related to the strategy (Alfaxard, 2013, p. 28).

Finally, the business strategy, which also showed a positive direction in its relationship with the performance of the SMEs in our sample, is fully confirmed by the empirical literature. Sirajuddin, Ridwan, and Jayadi (2017) have indicated, in a research study measuring the effect of strategic management practices on SME Performances in Makassar (Indonesia), that strategic planning, strategic execution, and strategic evaluation have a positive and significant impact on sales volume and profits of SMEs (Sirajuddin, Ridwan, & Jyadi, 2017, p. 71). In the same line, Skokan, Pawliczek, & Piszczur (2013) have concluded a "positive impact of a full strategic document (written) on the performance of the micro, small and medium-sized enterprises in Czech republic and Slovakia" (Skokan, Pawliczek, & Piszczur, 2013, p. 57). Jaoua (2014), in his contribution, has demonstrated that strategic management practices turn out to be a fundamental tool for upgrading SMEs in Tunisia. It should be noted that the main functional strategies and the genuine participation of managers, junior staff, and subordinates in strategic decision-making are the main aspects retained. Moreover, our findings' confirmation can also be drawn from Muogbo (2013), who associated the performance of manufacturing companies in Nigeria with the existence of a structured planning mechanism, formulated policies, a written vision / asserted mission, and a team that allocates and controls resources. This research paper's results complement another study carried out by Aldehayyat and Twaissi (2011) that focuses on operational plans, financial and external analysis techniques, and line managers' involvement as a financial performance source.

Concerning the *strategy* mediator role between Resources and firm performance, our results that reject any indirect association between internal factors (resources) and performance via *strategy* are opposed to those revealed by Pribadi and Kanai (2011). They confirmed this association for the economic context of Indonesia. This clearly shows that strategic thinking is therefore taking second place in most leaders' managerial thinking of SMEs under study, and the resort to strategic management tools, in our sample of firms (from our results which confirm the direct link between strategy and performance) remains an orientation that is still scarcely developed.

Conclusions

The strong Resource / Strategy constructs' impact on Algerian SMEs performance, which we have confirmed in this research, reveals the interest aroused by strategic management – notably in its internal version – for the development of our national SMEs, in a business environment which is both hostile and uncertain.

The detention of a certain level of resources and competencies and the development of a business strategic mind would thus be a source of SMEs' superior performance in our sample. A result that strongly supports Tabet Aoul's (2012) findings justified the competitiveness of 5% of the SMEs studied by financial ease, and adoption of modern management techniques.

This research's theoretical implications consist of supporting the RBV approach principles by illustrating the value of resources and competencies and their management for firm performance. In the case of our Algerian SMEs, our study makes a compelling case for strengthening government intervention alongside national Algerian SMEs, particularly those belonging to the industrial sector. It is an intervention that will specifically target companies' improvement, tax or quasi-tax system simplification, banks' credit standards flexibility (financial resources), and above all, substantive managerial support that could allow our SMEs to manage their resources better, and acquire and develop new ones to provide higher performance.

However, as with any research paper, there are several limitations associated with this research. The sampling method, the data collection methods, and the used source type limit our research interest. Due to the unavailability of a specific SME database at the local SMEs department level in the province of Sidi-bel-Abbes, and the expressed resistance of most SMEs owner-managers to Academic studies, we used a random sampling method to prospect a sample of 50 companies directly. We were also obliged to accept data sets provided by the respondents of various statuses, from a simple Office Worker to Human Resources Director and Accounting and Finance Manager.

In general, our approach and results contribute significantly to the literature related to the subject discussed herein and are among the most critical initiatives in Algeria's academic field.

Based on the promising findings presented in this paper, work on the remaining issues is continuing and will be presented in future papers.

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APPENDIX A

Tangible Resource Items

Much weaker than the competitor ←————→ Much stronger than the competitor

T.R.V1: Buildings and other physical structures (i.e. factories, offices, warehouses, stores, showrooms)	1	2	3	4	5
T.R.V2: Financial Capital [financial capital availability, accessibility (bank credit), liquidity]	1	2	3	4	5
T.R.V3: Land	1	2	3	4	5
T.R.V4: Cash money (cash and / or bank) earned from various operations	1	2	3	4	5
T.R.V5: Technological investments (high-tech production equipment, facilities to improve customer service)	1	2	3	4	5
T.R.V6: Human resources (employees' number and loyalty)	1	2	3	4	5

Intangible Assets Items

Much weaker than the competitor ←————→ Much stronger than the competitor

I.A.V7 : Patent	1	2	3	4	5
I.A.V8: Trademarks	1	2	3	4	5
I.A.V9: Links with top managers from other firms	1	2	3	4	5
I.A.V10: Links with government officials	1	2	3	4	5
I.A.V11: Links with community leaders	1	2	3	4	5
I.A.V12: Company reputation	1	2	3	4	5
I.A.V13: Organizational structure (firm's operating and reporting structure)	1	2	3	4	5
I.A.V14: ICT organizational infrastructure (ICT system provision for timely reporting of firm performance)	1	2	3	4	5

Competencies Items

Much weaker than the competitor	←—————→	Much stronger than the competitor
C.V15: Managers' know-how, qualifications, expertise, and creativity	1	2 3 4 5
C.V16: employees' know-how, qualifications, expertise, and creativity	1	2 3 4 5
C.V17: Individuals knowledge bases development	1	2 3 4 5
C.V18: Employee self-development	1	2 3 4 5
C.V19: Organizational culture (i.e., shared organizational values, beliefs, attitudes, and behaviours)	1	2 3 4 5
C.V20 : Continuous technological infrastructure improvement	1	2 3 4 5
C.V21: Focus on company's research and development department	1	2 3 4 5
C.V22: Focus on cooperation with universities, research institutes and / or other companies to acquire knowledge)	1	2 3 4 5
C.V23: Strong brand name	1	2 3 4 5
C.V24: Focus on a strong sales force and / or strong external communication	1	2 3 4 5
C.V25: Well organized marketing department	1	2 3 4 5
C.V26: Routines regularly measuring changes in customer / competitor behaviour	1	2 3 4 5
C.V27: Customer management (customer loyalty, response time to customer requirements)	1	2 3 4 5



Capabilities Items

Much weaker than the competitor \longleftrightarrow Much stronger than the competitor

C.P.V28: Learning capacity (mechanisms creation and knowledge sharing, teamwork efficiency, continuous improvement process (CIP))	1	2	3	4	5
C.P.V29: Logistics and supply efficiency	1	2	3	4	5
C.P.V30: Supplier / distributor network management	1	2	3	4	5
C.P.V31: Key performance indicators (KPIs) adoption	1	2	3	4	5
C.P.V32: Building suppliers / distributors relationships' capacity	1	2	3	4	5
C.P.V33: Formalised working procedures for each firm function	1	2	3	4	5

Items of Degree of Strategy Adoption in Business Practices

Strongly Disagree \longleftrightarrow Strongly Agree

S.A.V1: Written vision and affirmed mission existence	1	2	3	4	5
S.A.V2: Global strategy and functional strategies existence	1	2	3	4	5
S.A.V3: Environmental (internal / external) analysis	1	2	3	4	5
S.A.V4: Strategy techniques usage [M. Porter's 05 force analysis, portfolio strategies (BCG, Mackinsey, ADL) analysis, resource and competencies analysis, PEST analysis, etc.]	1	2	3	4	5
S.A.V5: Organizational actors (Tops and Line managers) participation in strategy formulation	1	2	3	4	5
S.A.V6: Commitment to implement the strategy	1	2	3	4	5
S.A.V7: Strategy evaluation and control	1	2	3	4	5

Market Performance Items

Much below average	←—————→	Much above average
M.P.V1: Increase in sales volume (Business Turnover) compared to competition.		1 2 3 4 5
M.P.V2: Increase in market share compared to competition.		1 2 3 4 5

Profitability Items

Much below average	←—————→	Much above average
P.V3: Company's net profit compared to competition.		1 2 3 4 5
P.V4: Company's return on sales (ROS) compared to competition.		1 2 3 4 5
P.V5: Company's return on investment (ROI) compared to competition.		1 2 3 4 5
P.V6: Company's liquidity compared to competition.		1 2 3 4 5

APPENDIX B

Table 1. Parameters for evaluating the measurement model

Constructs	Items	Loading	Student	C.R	AVE	1	2	3	4	5	6	7
Tangible Resources	T.R V1	0.82	13.54									
	T.R V2	0.88	14.98									
	T.R V3	0.75	8.87	0.90	0.59	0.77	-	-	-	-	-	-
	T.R V4	0.81	11.43									
	T.R V5	0.67	7.30									
	T.R V6	0.66	6.47									
Intangibles Assets	I.A V7	Eliminated										
	I.A V8	0.65	8.10									
	I.A V9	0.64	6.21									
	I.A V10	0.66	8.26	0.89	0.57	0.78	0.75	-	-	-	-	-
	I.A V11	Eliminated										
	I.A V12	0.82	19.82									
	I.A V13	0.83	15.80									
	I.A V14	0.88	24.36									
Competences	C.V15	0.75	8.01									
	C.V16	0.68	6.52									
	C.V17	0.68	6.46									
	C.V18	0.68	5.41									
	C.V19	0.73	6.95									
	C.V20	0.86	12.51									
	C.V21	Eliminated		0.93	0.53	0.70	0.84	0.73	-	-	-	-
	C.V22	0.67	7.82									
	C.V23	0.80	14.88									
	C.V24	0.77	10.81									
	C.V25	0.69	9.13									
	C.V26	0.64	5.95									
	C.V27	0.77	10.46									

Constructs	Items	Loading	Student	C.R	AVE	1	2	3	4	5	6	7
Capabilities	C.P.V28	0.81	15.14									
	C.P.V29	0.78	11.49							-	-	-
	C.P.V30	0.72	6.05	0.90	0.59	0.71	0.78	0.78	0.77			
	C.P.V31	0.82	10.88									
	C.P.V32	0.74	10.18							-	-	-
	C.P.V33	0.72	13.12									
Strategy Adoption Practices	S.A.V1	0.84	13.90									
	S.A.V2	0.90	29.29									
	S.A.V3	0.91	33.60									
	S.A.V4	0.70	12.18	0.95	0.72	0.40	0.65	0.77	0.51	0.85	-	-
	S.A.V5	0.81	14.87									
	S.A.V6	0.87	20.65									
	S.A.V7	0.90	24.94									
Market Performance	M.P.V1	0.98	140.61	0.98	0.97	0.70	0.61	0.62	0.53	0.56	0.98	-
	M.P.V2	0.98	143.60									
Profitability	P.V3	0.89	20.47									
	P.V4	0.73	5.25	0.91	0.73	0.74	0.64	0.55	0.56	0.46	0.82	0.85
	P.V5	0.86	17.99									
	P.V6	0.92	36.38									

Source: Developed by the author based on results of PLS-SEM analysis. Bold values on the diagonal are square roots of AVE.



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The Business Process of Small and Medium Portuguese Family Businesses: A Reindustrialization Case Study

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ABSTRACT

Objective: To understand, through a concrete case study, the management process of small and medium-sized Portuguese family businesses in the face of the phenomenon of reindustrialization in Europe. In this case study we show how

a company can react to the process by adopting a new management model, despite the factory being almost inactive for several years. The final idea is to demonstrate that this is a new reindustrialization movement, which does not perform in the same way as in the past.

Methodology: Considering that we want an innovative and continuously learning organization, we intend to develop from a theoretical point of view the European Foundation for Quality model (EFQM) and then apply the improvement and management actions in each one of its aspects in order to promote and evaluate permanent and continuous improvement. For this proposal we use the change and organizational development method.

Findings: Leadership is a topic with particular importance in this process of transformation, and in this case in particular, through changes in the shareholder body, generational changes and especially by the inclusion of the professional management team, for the improvement of the key performance indicators, including the EFQM score.

Value Added: The implementation of a management model will lead management to a leadership style conducive to value creation and results in terms of quality, and human and financial capital based on effective organizational performance.

Recommendations: Phased implementation, with the creation and development of pilot areas, is particularly beneficial to an organization's culture, and also for engaging people via the cascading communication process.

Key words: organizational change, organizational culture, leadership, Lean management, application model

JEL codes: L11, L21, G31

Introduction

In our introduction we will analyse the macro message of the Portuguese minister of foreign affairs (Santos Silva, 2020).

Pandemic Showed Need for Reindustrialization of Europe

The economic crisis provoked by the response to the Covid-19 pandemic forced us “to learn some lessons that could be an opportunity for Portugal and Europe”, said the Minister of State and Foreign Affairs, Augusto Santos Silva (2020), at a parliamentary hearing of the Economy commission, Innovation, Public Works and Housing.

One of the lessons is that the European economy needs to reintroduce industries that have been lost to other continents, and this reindustrialization could be an opportunity for Portugal, said the Minister, who is responsible for the internationalization of the Portuguese economy (Santos Silva, 2020).

Portugal has important assets that it can and should use: “the qualification of human resources, the plurilingual domain, technology, the quality of service and the quality of the knowledge and innovation ecosystem, as well as the areas in which it is dominant today, starting with renewable energy” (Santos Silva, 2020).

Europe, Africa and Latin America

At the same time, it must have a dual-direction strategy that addresses the European domestic market – the destination of three quarters of Portuguese exports – and also the foreign market, with particular interest in Africa and Latin America (Santos Silva, 2020).

“Portugal wants to be at the forefront of Europe’s reindustrialization and wants to put its enormous industrial capabilities at the service of Europe”, said Augusto Santos Silva, pointing to textiles, clothing, footwear, engineering, pharmaceuticals and agri-food.

“Portugal wants to be a factor of industrialization, a powerful industrial cluster in the Europe of re-industrialisation”, he said, pointing to the “huge

advantages from the point of view of human security, improving the quality of its health systems, public safety and the conditions of life and well-being”, which are also “an essential asset for the tourism sector”.

Portugal Image

The Minister, Santos Silva (2020), also stated that “the country’s image is reinforced in this crisis in different dimensions”, referring to “political unity and institutional concertation”, while maintaining “all the constituent elements of a living democracy with a multi-party parliamentary base [...] This idea of political unity is one of the most important points for the country’s image.”

However, “the most important element” was the responsiveness that Portugal showed, with “the resilience of the National Health Service being one of the most highlighted elements in the circles that count in Europe: political, economic, business, union and naturally, public opinion too” (Santos Silva, 2020).

The case study was performed on a Portuguese industrial company founded in 1920, whose shareholder body has remained within the same family to this day. Since 2014 it has been managed by the third and fourth generation, assisted by a group of professional managers, one of whom is a member of the Board of Directors, together with the family elements (Speitzer & Quinn, 2001). The initial idea of the intervention was to prepare for the advanced change in the models and management systems, until then supported by the logic and principles of ‘Mass Production’ (Womack, Jones, & Ross, 2010), to the philosophy of ‘Lean Production’ with all the significant impacts of organizational transformation (Quinn, 2006) and (Lopes, 2011). The work goes through several phases, which analyse the principles of strategic management, the definition of objectives and the effective implementation of strategies (Grant, 2016). The initial change would always have to be supported by fundamental pillars of action, in which we highlight the clear definitions of purpose, the study of processes of greater preponderance in the management of the company and the clear involvement of people at all hierarchical levels fostering learning (Shook, 2010; Schnitker et al., 2016).

The great challenge would always be the coexistence of the experience and history of the company with the application of modern and current

management techniques and tools, considering the strength of the name and not the brand of the organization, as the aim is to test the model on a Portuguese traditional industrial company, which had 180 employees at the start of the new wave of industrial activity, before moving to 300 employees, following the new approach and consequent growth in business.

As the company operates by transforming metalwork for agricultural, transport and spare parts markets, a real industry approach and at the same time a modern management model is crucially important, alongside an engineering and manufacturing approach (Womack, Jones, & Ross, 2010).

For the development of the company's fundamental organizational pillars, strategic base axes were created, which allowed us to elaborate action plans that support the company's capacity to implement the basic ideas of each of them (Papanikos, 2010).

In this specific case, the strategic axes were defined and registered from a meeting of managers, carried out and organized by the top management, and then their conclusions were presented to the company's shareholders, considering that this would define the company for the year 2020 and beyond, namely: High levels of communication; Improve teamwork; Participation, involvement, commitment of all people; Listen and visit the Clients; Work with Quality and Safety; and Be Resilient.

As a way of developing the defined, negotiated and approved strategic axes, we are monitoring its evolution through the EFQM (European Foundation for Quality Management) model, which also allows us to dilute the accentuated hierarchical effects to a more flexible and collaborative culture (Lopes, 2016), thus enabling leadership based on competencies and relationships in order to create a networked culture.

The basic idea is to demonstrate the extent to which management culture in Portugal, or of Portuguese managers, is in line with the application of an organization's own models of management, supported by systems developed in a holistic way and that lead performance in its several strands or pillars, in a context of industrial (manufacturing) recovery.

Methodology

Change and Organizational Development Project

The so-called 'Project for Change and Organizational Development' (Kotter, 2008) was the model chosen by top management to ensure the necessary process of change, as well as compliance with the business plan. The model is supported by the European Foundation for Quality Management, where the different phases and tools applied are evaluated by the full model score, which reflects the management processes' improvement in response to the new industrial challenge.

The model to be developed is supported by three fundamental pillars that allow its development in phases, and allow its permanent monitoring and evolution: (i) Management System: Consolidation and Sustainability; (ii) Themes: Context, stakeholders, leadership and strategy; (iii) Lean Global Management Philosophy (Womack, Jones, & Ross, 2010).

Management System – Consolidation and Sustainability (Context)

Considering that we want an innovative and continuously learning organization, we intend to develop from a theoretical point of view the EFQM model and then apply the improvement and management actions in each one of its aspects in order to promote and evaluate the permanent and continuous improvement.

We then describe the model from the generic point of view, showing the improvement actions chosen by the top management of the company, considering the connection of the functional areas to the points treated in the respective activity plans described (Flick, 2002).

In the concrete case study, top management conducted its priorities for action and follow-up with the same intervention logic, highlighting the actions in terms of direct intervention in (i) leadership training (passing to intermediate levels) (ii) policy definition (iii) redefinition and management of business processes (LEAN implementation works) (iv) performance indicators (follow-up and performance using the Scorecard).

Phased Implementation

The project was defined in six phases for its implementation in which the basic idea was the management of an implementation process, considering the fundamental aspects of experimentation, communication, diffusion and adoption of best practices. In this way the following sequential and evolutionary phases were evidenced as we described: (i) Definition of Macro Project with executive management – present, explain and discuss the model in November 2018; (ii). Communicate to the middle managers – present and explain to all heads the areas, philosophy and objectives to start the process in January 2019; (iii) Pilot areas – jointly define the initial area or areas of intervention and implement in January 2019 (note: integrating comments and opportunities for improvement of external audits of quality and customer certification); (iv) Results Evaluation – implement the procedure in the pilot area (s) and then evaluate results in March 2019; (v) Expand by organization – define the following areas and continue the process in order to achieve 80% implementation by November 2019, in April 2019; (vi) Continuity – continuous and permanent improvement should enter into the evolving organization’s “lifestyles” in July 2019, at which point management and improvement cycles should be supported by the DMAIC / PDCA as complementary methodologies (Basu, 2011).

Improvement Cycles

Knowing that the decision on the methodology to be adopted falls on the DMAIC cycle, complemented by the PDCA cycle, it will be interesting to compare the two methodologies and these with the methodology of project management, often used in isolated project management, such as the improvement or the investment in a certain critical process at a given time (Nokes, Dole, & Hacker, 2007; Basu, 2011).

Thus, in table 1 we compare the three methodologies showing their complementarity:

Our choice of follow-up and use was clearly based on the DMAIC cycle, complemented by GP (where applicable) and PDCA (for timely improvement cycles), so we characterized it in detail in table 2 and table 3 (Basu, 2011).

Table 1. Methodologies

Project Management	Define	Organize	Implement		Close
DMAIC	Define	Measure	Analyze	Improve	Control
PDCA	Plan	Do		Check	Act

Source: (Basu, 2011).

The description of each phase of the DMAIC improvement cycle, adopted in the present case study, should then be complemented and configured with the inclusion of the Lean management tools to be used in each of the phases (Basu, 2011).

Table 2. Methodology DMAIC cycle details

Define	Measure	Analyze	Improve	Control
Reason for project realization	How can we measure the current moment	Deviations and obstacles and cause of problems	Actions to be implemented to correct and improve	Results, risks and progress report

Source: (Basu, 2011).

Table 3. Methodology DMAIC cycle details for each phase

Define	Measure	Analyze	Improve	Control
Description of processes in phases	Graphs and charts with indicator values	SWOT Analysis Five Whys? Pareto and ABC analysis	5S SETUP Reductions and Non-Productive Time	GANTT PDCA Control maps of Action Plan

Source: (Basu, 2011).

When using the various phases of the DMAIC cycle, as well as of the respective tools, one should always keep in mind the involvement of the people of the teams in the areas under analysis.

Follow-up Model

The Management Follow-up Model is the BSC – Balanced Scorecard (Kaplan & Norton, 2016) – described and designed on the basis of strategic maps organized in four perspectives, namely: Financial Perspective; Customer Perspective; Perspectives on Internal Processes; and Perspectives on Learning and Growth.

The philosophy used and recommended by Kaplan and Norton is the organization of the management indicators, by the four elements of the model. In table 4 we illustrate the specific case of our study:

Table 4. Management Follow-up Model (BSC)

Perspective	Key Performance Indicators
Financial	Cash Flow; EBITDA; Management Fund
Customers	Sales; Relative Quota; Competition; Margins; Complaints and NPS (Net Promoter Score)
Internal processes	Stocks; Capacity; Efficiency; NPS; Unconformities
Learning and Growth	New products; Knowledge; Formation; Absenteeism; Environment and Safety; New Markets and Customers; Information systems

Source: (Kaplan & Norton, 2016).

The report will always be presented in graphs against objectives, considering the historical evolution of each indicator, time and space for eventual comments and frequency of follow-up (Kaplan & Norton, 2016).

Evolution according to the Model (EFQM)

In the tables and graphs below, we can verify the score of each of the areas of the model, which has as maximum possible score 1000 (thousand points), divided by the various areas according to their respective percentage weights, still within their two fundamental elements of means and results (table 5).

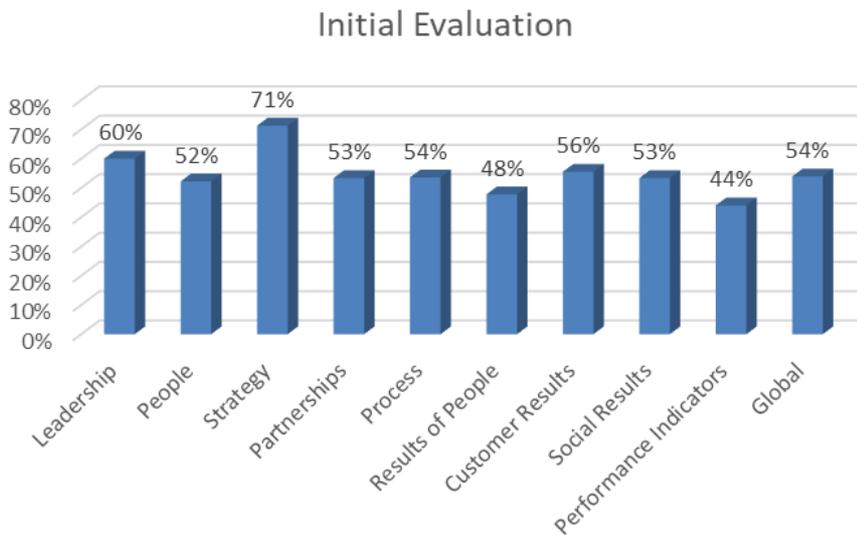
Table 5. Fundamental Elements of the Model

Model area	Element	Weight %
Means	Leadership	10%
	People	9%
	Politics and Strategy	8%
	Partnerships and Resources	9%
	Processes	14%
Results	Results of People	9%
	Customer results	20%
	Social Results	6%
	Performance indicators	15%

Source: EFQM

According to the table and with the appraisal applied to the executive management of the company the results were obtained in graph 1 (January 2019).

Graph 1. Initial EFQM Company Results

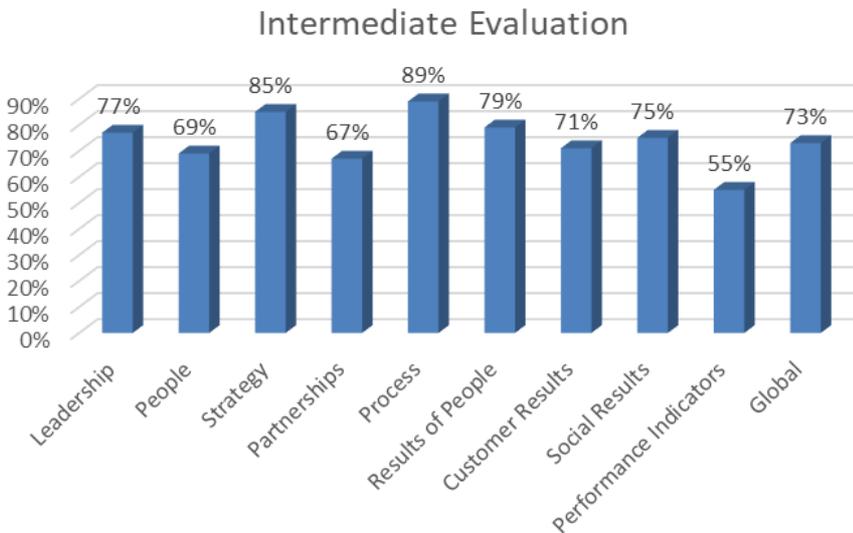


Source: company data assessment.

From reading the results obtained in early 2019, we observed the global value of 54%, representing 540 points in 1000.

In graph 2 we present the results, which we consider to be intermediate for the current management cycle, considering that the end of the observation would be the end of 2021.

Graph 2. Intermediate EFQM Company Results



Source: company data assessment.

We observed that 73% of the total value represented 730 points out of 1,000, and that the improvement occurred in all elements of evaluation, with particular emphasis on the evolution of leadership and processes, not being extraneous to the implementation of the Lean management philosophy (Shook, 2010; Leaper, 2017).

Risk Management

In today’s changing context, shareholders have been clamouring for greater transparency about the risks organizations face. There is growing recognition that

proactively coordinating all risks in an integrated way is critical to success, so traditional approaches to risk management are no longer sufficient (Kumar, 2021).

Risk Management Model

The risk management model was based on the following five areas considering the business risk control approach (Kendall, 1998): (i) Market Risk – Measured by sales results and margins against the budget (BCG Consulting Group) and Porter’s five-force diagram in Grant, 2016; (ii) Credit Risk – Considering the approval and policy of credit to be granted, insurance and obtaining credit from third parties and banking; (iii) Operational Risk – Brand image and company reputation (NPS), product quality, project development, contingency plans and incident recovery (DRP); (iv) Legal risk – Management of Contracts, present and future litigation, compliance with commercial, labour and tax legislation; (v) Risk of Information and Communication Systems – Classification of information required as “confidential” and security of information and communication systems (Ross & Francis, 2003).

Interested Parts – Reason for Existence and Value Creation

Value creation, in fact, the essence of the existence of companies, was defined as the generation of results for customers and shareholders, illustrated by the diagram showing an evolutionary approach supported by several pillars and strategic actions that we have described (Black, Wright, & Davies, 2000): Define objectives in all areas of the company; Solve problems – what problems? – it will be the work to be done; Work to be carried out through the intervention and through the business processes; Involving the teams and having the means available; and finally we have to improve and evolve: (i) By increasing the knowledge and skills of our people; (ii). By improving attitudes, behaviours, and leading by example; this is in fact the management system, including the meetings we hold to track the evolution of processes and objectives (Cameron et al., 2006).

Performance Model and Objectives

In the concrete case study, the principles of action that support the Performance Model and Objectives were developed: (i) Managing People for improvement, adaptability and results; (ii) Increasing performance levels through process practices; (iii) Practicing and experimenting to become more comfortable in the field of processes; (iv) Working with greater individual and collective effectiveness (Schuh, Lenders, & Hieber, 2008).

LEAN Transformation

The management of the change process that supports the Lean philosophy's implementation path from the behavioural point of view is based on its five-dimensional characterization and on a fundamental premise "not to speak in a vague way" (Shook, 2010). The dimensions of support to the process of change are: (i) The typology of problems we are here to solve; (ii) Knowledge and skills of the people; (iii) Work to be performed permanently and the follow-up model; (iv) Management and Behaviour System; (v) Ability to think every day to improve things (Shook, 2010).

How the Lean System Works

The operation of the Lean System is directly related to the logic of creating value for clients and shareholders, in this perspective the behavioural dimension supported by strong leadership styles and guided by the example of management and the development of long-term, internal and external partnerships (Shook, 2010).

The System is not in line with certain management situations, which it repudiates and avoids through good process practices; the main situations are related to late deliveries to clients and the maintenance of high levels of inventories, which cause storage limitations and maintain assets without utility (Womack & Jones, 2016).

In terms of management approach, financial indicators should not be the basis of the follow-up model, but rather the operational ones, making the former a natural consequence of the latter, reflected in the budget (Womack & Jones, 2016; Basu, 2011).

Model LEAN – Company

In the Company case study the Lean management system was designed and conceived in four fundamental areas of basic performance, which are then developed according to the concepts or processes that support them. In table 6 we represent the conceptual model with the natural interconnection of the defined strategic plan, taking into account the four areas of action that we describe as: Definition of the Purpose of the actions; Involvement of People; Continuous Improvement Cycle (PDCA); List, description and transformation of all company processes (Shook, 2010).

Table 6. Company Lean Model

Purpose	People
Mission Customer Value Goals	Culture Learning Leadership
PDCA	Processes
Problem-solving Cadence of Work Leadership Involvement	5S Standard Time Production Flow Visual management

Source: company data.

After the representation and construction of the conceptual model we must implement the Lean – design model, which is the application of the concepts to the company’s reality. We represent the scheme of the model in table 7.

Table 7. Lean Model Development

Purpose	People
Improve Efficiency Improve quality and safety at work rates Reduce costs Objectives of the strategic plan and activities	Leadership Training Communication
PDCA	Processes
Troubleshooting Work Cadence Leadership Involvement	5S Standard Times Flows Visual management

Source: company data of applied model.

The application areas coincide with the conceptual model in terms of macro definition; we will then develop the model in practice and in numbers (table 8).

Table 8. In practice and in numbers

All lined up to keep	First round improvement
Better internal instructions between areas	35%
Improve reaction to error correction	25%
Doing good first by reducing unplanned operations	30%
Improve supplier selection	25%
Much greater attention to customers to avoid hassles and unnecessary rework	50%

Source: company data reports.

The significant improvements in operational indicators are reflected in the company's economic and financial indicators, through reduction and optimization of costs, which also improve its competitiveness through the adjustment of the sales price strategy to the reality of the markets, greater agility in change and better performance in terms of quality (Nicholas & Nicholas, 2010).

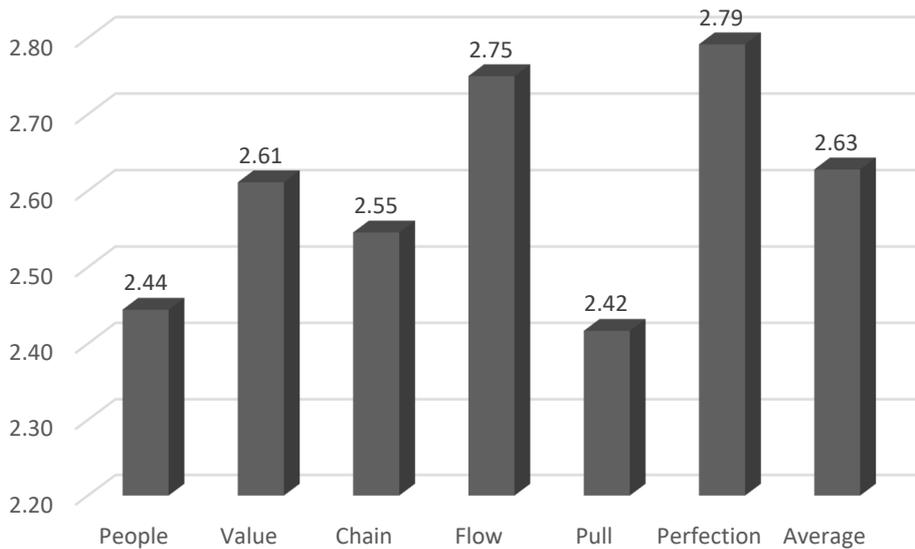
Evolution of Lean Implementation

The evaluation model adopted for the evaluation of the Lean implementation level was based on the LAI – Lean Advancement Initiative of the MIT – Massachusetts Institute of Technology, which presents the analysis of the system in six fundamental points: Involvement of People; Value creation; Value Chain; Flow of Processes; Notion of “Pull” and Index of Perfection.

The following are four key levels of Lean implementation in organizations: (i) Level 1 (use of Lean tools); (ii) Level 2 (creation of flow in processes); (iii) Level 3 (development of a Lean system); Level 4 (consolidation of the system with industry automation 4.0).

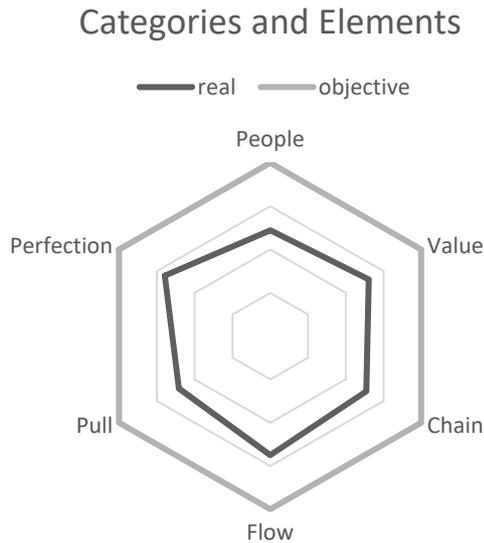
In the case study, in 2019–2020 we present an average score of 2.63, distributed by the six factors according to the following graphs.

Graph 3. Company Model Lean level



Source: company data assessments.

Graph 4. Against the objectives



Source: company data assessments.

The values show an implementation level of 66% in relation to the objective, knowing that according to the LAI / MIT model the actual level of (2.63) compared to the maximum of (4) represents that the organization is in the implementation phase process flow and in-line systemic approach represented by level (3).

The Lean Method Followed

The Lean method followed balances and integrates three fundamental concepts of all Lean models, which define the Purpose for the realization of all actions, projects and programs, that is, the reason or reasons why it is going to be a realized event, whether strategic, tactical or operational (Womack, 2006).

Flow Time

In table 9 we represent what in practical terms is meant by value and waste, in order to illustrate the ways of acting in order to maximize the former and reduce or eliminate the second, which is the core essence of the Lean management philosophy.

Table 9. Flow and Waste

Value	Waste
Provider Developing products Production Client	Inventory Rework Waiting time

Source: company data.

The functioning of the system does not depend on how each part or area acts, but how each one integrates with the others.

Leadership with the Value Chain

In the concrete case study, we intend to support the execution of strategies, and the implementation and management of the new governance and performance model, in a leadership philosophy known as the ‘Global Value Chain of the Company – Operational Excellence’, which creates optimization (Lopes, 2011, 2016) and which is a new, less hierarchical, more participatory and responsible approach (Lopes, 2011, 2016).

The value chain we speak of enables the company’s leadership in an integrated way to achieve the results expressed in the objectives, thus creating value for clients and shareholders (Cameron et al., 2006).

In practical and real terms, the top leadership is exercised by an executive management body, an ‘executive committee’, represented by the directors and coordinated by the CEO who establishes a connection with the Board of Directors, and who serves as Executive Director (Lawrence, Lenk, & Quinn, 2009).

Actions Plan

The set of these actions and their integration with the company’s strategic principles base and the main performance of the top management, allow permanent contact with the operational terrain (Gemba) (Womack & Jones, 2016), thus doing justice to one of the basic principles’ leadership role in the

logic and spirit of Lean management – “go with your own eyes and lead by example” (Shook, 2010).

Value Creation Flows

The identified flows are (i) the productive flow, supported by the factories and their productive processes; (ii) the flow of materials, referring to all movements of materials within the company and by the values of inventories and their locations; (iii) the flow of information, usually referred to as “from ordering to receiving the customer” (Womack & Jones, 2016).

Productive Flow

The great organizational innovation in the area of operations and the production flow of the company was based on ‘Takt Time’ – the contribution of each operation to the total production process, which allowed for profound changes in the form and management model of industrial processes, allowing its balancing (Womack & Jones, 2016) (table 10).

Table 10. Productive Flow

Factories	Base. Processes	Takt Time %	People in Production
Parts and Components	Cutting, forging, CNC, shafts and cylinders	38.74%	79
Manufacturing and Assembly (SJ)	Bending, Assembling and Robotics, Final Assembly, Stripping and Painting	54.45%	111
Manufacturing and Assembly (A)	Bending, Assembling and Robotics, Final Assembly, Stripping and Painting	6.81%	19

Source: company data.

As we can see from the figure, we know the importance in terms of weighting in the overall process of each of the productive units, with parts and components representing 38.74%, manufacturing and assembly 54.45% and manufacturing and complementary assembly 6.81%.

Materials Flow

The flow of materials was designed to follow the production flow, considering its continuous optimization, with the clear objective of working without the wastes of waiting, lack of materials, excess production and excess stock (table 11).

Table 11. Materials Flow

Typology	Raw Material (Warehouse)	Intermediate Warehouses	Shipping (Warehouse)	Production Sections
Raw Material	33%			
Finished Goods			25%	
Work in Progress		19%		23%

Source: company data.

After analysing and implementing corrective measures, the company's global stock fell by 38% in 3 years, representing a significant gain in turnover, improvement in working capital and, consequently, in cash flow. This in terms of results, from the operational point of view improved the liberation and management of space, procurement and procurement policy and also the reduction of the levels of risk of obsolescence.

Information Flow

The organization and good management of this value chain are of central importance for the success of almost all the processes of the company, considering that they will be the following four areas: (i) Markets, clients, marketing and engineering; (ii) Business Management; (iii) Production planning and control; (iv) Shipment to customers, which we detail and explain in table 12.

Table 12. Information Flow

Markets Customers Marketing Engineering	Market Studies and Projects	Sales Plans	Offers	Price Negotiation	Orders
Management of Business	Sales Plan	Production Plan	Tracking and Correction	Delivery Plan	Shipping
Plan and Production Control	Capacity Studies	Factory Orders	Control of Real VS Plans	Sales Plans	Delivery and Quality Documents
Shipping to Customers	Packing List	Invoices	Destination and Means of payment	Technical and Quality Documents	Receipt and Documents

Source: company data.

The optimization of the information flow was based on the PDCA tool, previously presented, that allows the constant verification and correction of the processes (Womack & Jones, 2016).

Strategy and Deployment – Business Chain

The immediate bet markets are clearly competitive, but they will be future bets, such as: Iberia, Algeria, France and Central and Southern Africa. These markets have different approach characteristics, but there are some common denominators, such as aggressive price policies, the usefulness and appropriateness of the solutions, and a great deal of sensitivity to the various marketing policies, whether they are advertising, or distribution channels and services, and after-sales service (Kotler & Keller, 2014).

In table 13 the main illustrative values of strategies for the development of the business chain are illustrated.

Table 13. Business Chain

Markets	Ibéria	Algeria	Balkans	France	Rest of Africa
Distribution	49%	26%	4.8%	9.5%	10.7%

Source: company data.

In general terms, 38% growth has been achieved in which international activity, considering the nuanced position of the Spanish market, currently accounts for 70% of the company's business, whereas previously it represented 59%, even though there is still strong growth in the domestic market (Holweg, 2006).

Company Competitiveness

The competitiveness of companies is supported by their ability to execute their strategies, which in turn is supported by various elements of development and evaluation, from the constant adaptation of their structure, optimization of business processes in favour of productivity increases and optimization and cost reduction (Haidar, 2012).

The interconnection of these factors with their Research & Development capacity, translated into the creation and launching of new products, services and solutions, for customers and markets, are factors of measurement of competitiveness with particular importance (Grant, 2016).

In table 14 we show the reduction of costs from the perspective of the optimization of processes reducing the categories of waste related to excess inventories, rework operations and waiting times (Desai, Ferri, &, Treadwell, 2009).

Table 14. Process Cost Reduction

Waste	Cost level
Excess Inventory	20.9%
Rework operations	23.2%
Waiting time	28%

Source: company data.

In addition to the three cost areas highlighted, the management costs related to the budgetary deviations, which in this specific case represent (27.9%), are also subject to action. This is one of the first steps taken and is the responsibility of the company's executive management structure, thus promoting accountability and greater effectiveness in solving problems.

In table 15 we report the cost analysis from the perspective of the quality costs according to the methodology of (Crosby) (Russel & Taylor, 2014). This observes and measures each of the elements of cost more directly and effectively, and as a consequence provides insight in how to rationalize and optimize costs.

Table 15. Quality Cost Improvement

Categories	Costs in percentage
Prevention	35%
Evaluation	25%
Internal Failures	30%
External Faults	10%

Source: company data.

From the analysis of the table's data we observed that the prevention category (35%) is connoted with rationalizations of structure and framework costs, the evaluation category (25%) is related to models and methods of quality management, relying more and more on scientific aspects of statistical control and self-monitoring (Piper, 2010–2011).

In the following categories we relate internal and external faults; internal faults (30%) are typically related to manufacturing nonconformities or support areas, which must be followed and corrected by quality reports, and external faults are normally attributed to defects found in supplies or third-party information.

The improvements of (14%) already verified and of more (12%) forecasted, will surely be implemented through the combination of sales growth and cost rationalization, concretely doing more with less (Womack & Jones, 2016).

Management Indicators Analyses

The management indicators were outlined in three fundamental categories, which allow us to follow and evaluate the performance of the processes, as well as the operational and financial impact of the integration of the various

categories, which are: Competitiveness Indicators; Economic indicators; and Operational and Financial Indicators (Hejazi & Dastjerdi, 2015).

Competitiveness Indicators

In table 16 we present the main competitiveness indicators adopted and developed, through their application and adaptation to the reality of the organization and business, with the principles of increasing the qualitative and quantitative competitiveness indexes.

Table 16. Key Performance Indicators

KPI	Value
Cost savings on process flows	45%
Reduction of product and project development times	60%
Increased Engineering capacity – charge new projects	40%
Improved Customer Satisfaction – NPS – Net Promoter Score	80%

Source: company data.

From the observation of the evolution of the competitiveness indicators, we can highlight the qualitative improvement through the NPS – Net Promoter Score (80%), by listening to customers' opinions about the company's performance in various parameters (Kaplan & Anderson, 2007; Namazi, 2016).

Operational, Economic and Financial Indicators

In table 17 we analyse the evolution of the economic and financial indicators (first table) but mainly how the link between the operational indicators and the economic and financial indicators translates into a good performance as a consequence of the previous ones (Damodaran, 2019 & 2020).

Table 17. Operational, Economic and Financial Indicators

KPI	Value
Stock Turnover	3,2%
Working Capital	4,65%
EBIT level	15,6%
Net Cash Flow	46,7%
Strategic KPI	Operational effect
Stock Turnover	Inventory reduction
Working Capital	Stocks and Collection
Customer Satisfaction	Customer Complains
EBIT Level	OEE
Net Cash Flow	Sales improvement, Investments and cost management

Source: company data.

The evolution of the economic and financial indicators are clearly the consequence of the operational indicators (Kraclauer, Janssen, & Dorr, 2010), as shown in the table, where the evolution of values is in stock rotation (3.2%); Working Capital (4.65%); EBITDA margin (15.6%); and Net Cash Flow (46.7%).

The clear implication is value creation comes from sound management and is reflected in the results of the actions, in the return results to shareholders, represented by the Working Capital, EBIT and Net Cash Flow indicators (Emiliani, 2007).

Financial Impact Lesson

By working on the operational indicators, we already know that the financial impact has to be a natural consequence of their good performance, so the Profit is always equal to the Price minus the Cost, never, the Price is equal to the Cost-plus Profit, Profit is an opinion, Cash Flow is a reality. The generation of value is measured by the Return on Invested Capital indicator, which is shown in the formula: $RCI = EBIT / Sales (X) Sales / Investment$, where the first factor represents the profit margin and the second the return on capital (Emiliani, 2007).

Results

We would like to understand the impact of all the actions on the improved results of the indicators that impact the EFQM score, that is, the normal management flow of a company.

According to (Cameron et al., 2006), the implementation of a management model will lead management to a leadership style conducive to value creation and results in terms of quality, human and financial capital based on effective organizational performance.

Development and implementation of the strategic plan: Strategic Map, Actions and Strategic Objectives, until then non-existent.

Plan of Activities: Annual objective, maps of implementation of the strategy, deployment by functional areas and documents related to the strategic plan, which allow the common guidance of management units, such as (i) Market Studies; (ii) Business Plans; and Quality Plans (Womack, 2006).

Project of Change and organizational development according to Kotter (2008), was the model chosen by the top management as a way to guarantee its systemic implementation, based on the following pillars of action: (i) Top Management Actions; (ii) Definition of Objectives; and (iii) Implementation Practices, supported by the change in Company Culture (Values and Behaviour).

(Context), In our localized approach at the level of the EFQM model, the systemic thinking of Katz and Kahn (in Grant, 2012), through the open systems model, evidence the general environment and the organizational context, creating the process of functioning through the inclusion of resources for the production of 'outputs', modified by the elements characterizing the context, such as: (i) Culture; (ii) Objectives and Strategies; (iii) Behaviour; (iv) Processes; (v) Technology; and (vi) Structure.

Discussion

Phased implementation, with the creation and development of pilot areas, is particularly beneficial to an organization's culture, whilst it also engages people via a cascading communication process. As a qualitative process, it is reflected in the improved indicators' results, already reported in tables 14, 15, 16 and 17, and takes into consideration the risk management approach, where the results demonstrate the improvement % in key performance indicators, from the first period up to the present.

The entry into the 'way of life' of the company when defining the long, medium and short-term improvement cycles, in which the DMAIC and PDCA cycles are used in an integrated and complementary manner (Basu, 2011), through the Lean tools.

According to (Kaplan & Norton, 2016) the use of the Balanced Scorecard allows the organization and correct allocation of the management indicators, thus ensuring its correct and effective follow-up to the objectives.

Improvement of the overall EFQM index by 35%, passing in one year from 540 to 730 points, which is the main key performance indicator we have used to understand the overall improvement.

Implementation of the corporate risk management model based on five pillars: (1) Market Risk; (2) Credit Risk; (3) Operational Risk; (4) Legal Risk; and (5) Information Systems Risk (Kendall, 1998).

The development of the model considering the Stakeholders: Clients and Shareholders, leading to value creation, which according to Black, Wright and Davies (2000) is achieved by setting goals in all areas of the company, solving problems, optimizing the processes of the business and involving the teams with the appropriate means. According to Cameron, Quinn, DeGraff and Thakor (2006), the strength of value creation stems from the model of action and achievement of objectives through the Lean transformation (Shook, 2010).

Strongly active behaviour of top and middle management, according to (Quinn, 2004), transitions from the normal state to the fundamental state of leadership.

Management of skills, knowledge and talent, provides the team's success (Cascão, 2014).

Strategy and Deployment: always associated with the business chain, supported by the diversity and segmentation axes, marketing policies and established criteria, such as the geographic distribution network (Kotler & Keller, 2014).

Company competitiveness – supported by cost optimization of internal business processes, considering the categories of: (i) Excess stocks; (ii) Rework Operations; (iii) Waiting times; in addition to the budgetary deviations that represented (27.9%) deviations in costs, which is one of the rationalization opportunities.

Implementation of the analysis of quality costs in four categories: (1) Prevention (35%); (2) Evaluation (25%); (3) Internal failures (30%); and External Failures (10%).

Leadership Behaviour, according to Shook (2010), should be focused on management by example, having all people involved and committed, putting know-how ahead of “think what”, instilling principles of continuous improvement, testing before opting for solutions to market problems or needs, building trust in teams and people, developing mutual trust, developing people first and foremost as products, accomplishing all this and dealing with day-to-day functions.

Analysis of the data and results of the management indicators, which according to (Hejazi & Dastjerdi, 2015) are divided into categories: (i) Competitiveness (with changes between 40% and 80%), whether qualitative or quantitative; (ii) Operating, Economic and Financial (with changes between 3.2% and 46.7%).

Conclusion

The initial process of implementing the Lean management philosophy in the company made it possible to understand that the main objective of this action would be to create, develop and apply a management model adapted to the organization that should be based on the Lean system, integrating diverse tools and concepts that would allow it to be present in the vanguard of the current management.

Given the increasing demand of markets, and the introduction of new and more demanding customers, this was the most effective approach in terms of quality.

The strong penetration in the international area of business, agricultural and transportation units, and of course the gathering of customers in the

current business, combined with the industry and automotive markets, also created the need for the Company Management to evolve at all levels.

With the implementation of the Management Model – and at the beginning of the task, we did not know we could proceed in this direction – we conclude that the modular and systemic logic allows to verify that:

All organizations, their teams and all people need a defined path to be motivated in pursuit of common goals (Shook, 2010; Womack & Jones, 2016).

The key tool or element for defining common goals is strategy definition through the creation and development of strategic, coherent and participatory maps.

The consolidation of the strategic maps must be carried out in a management system that is a strategic plan, embodied in terms of valuation, and rational in terms of the budget and business plans (Kaplan & Norton, 2016).

According to (Grant, 2012) it is fundamental that a company implements within each functional area strategies for motivating people and for the definition and follow-up of objectives.

Areas in which the priorities for action are defined – the strategies to be developed, the target areas of action, indicators of progress and objectives – according to Grant (2002) can be successfully implemented.

Risk Analysis and Initial Diagnosis – the involvement of the most experienced teams in this phase was central to defining the main problems and opportunities for improvement, according to (Shook, 2010; Womack & Jones, 2016).

The task holders in the various processes are the most knowledgeable of their difficulties, but whether they know how to solve them is another issue, one which we had to change (Abzari, Ghorbani, & Madani, 2011).

The Project for Change and Organizational Development was developed and implemented based on the following aspects: Management System – Consolidation and Sustainability (context); Phased implementation methodology, designating pilot areas and then expanding to the entire organization; To advance with the improvement cycles as a way of acting jointly throughout the company, instilling a spirit of continuous and permanent improvement throughout the entire value chain; Follow-up model – based on the “Balanced Scorecard” tool, and showing the four perspectives of management indicators (financial,

customers, internal processes and learning and growth), and raising the level of management performance; integration between areas and improvement of reference values; and Evolution according to the EFQM model, which allows us to measure and follow over time the qualitative and quantitative improvements, as well as the technical and behavioural aspects.

We came to the Lean Management Model (LMM) through the program called “Lean Transformation”, based on the implementation of the PDCA and focused on the triangle base of the action (Purpose, Processes and People), improving management indicators in values between 25% and 50%, from productivity, material flows and information flows.

We evaluated the Lean implementation levels according to the LAI (LEI Advancement Initiative) Model, through the six parameters of the defined scale: (1) Involvement of People; (2) Value Creation; (3) Value Chain; (4) Flow of Processes; (5) Notion of “PULL”; (6) Index of Perfection, obtaining (66%) of the level of implementation, considering the scale we will have (34%) more opportunity for improvement.

The Behavioural Performance was and is being supported in the development of the leadership capacities of all the coordinators and directors of the company and in the management of competences, of the knowledge and the talent of all the people, through actions of Coaching that methodologically based on the cycles of experimentation, training and practice of processes. The “KATA Coaching” improvement cycles, according to Rother & Shook (2003), are based on the Production Management System created for the company and on process flow optimization tools.

Leadership – is a topic with particular importance in this process of transformation and in this case in particular through changes in the shareholder body, generational changes and especially by the inclusion of the professional management team. In fact, the transition from leadership to most functional and operational teams was also promoted (Quinn, 2000), from the normal state to the ground state, seeking to focus on teamwork, joint coordination and cohesion, focusing on others rather than on themselves, being more client-oriented and flexible rather than internally focused only on control activities (Watkins, 2007). The leadership approach is considered in a value chain, as a model for

the management and follow-up of the evolution of the company's processes, supported by the leadership action plan that concretely acts in the strategic, tactical and operational variants, always managing the creation flows of value: (i) productive; (ii) materials; (iii) information (Yukl, 2002).

Strategy and Unfolding – We believe that the best solution would be to treat the theme under three fundamental points of action and implementation: (1) The business chain, supported by the concepts of diversity and segmentation of markets and Ansoff products in (Kotler & Keller, 2014), including a geographical criterion; (2) Competitiveness of the company, through the good management of inventories, costs and waste of activities; (3) Quality, improving Prevention and Evaluation procedures, managing and following internal and external failures, naturally centred on customer complaints and nonconformities of processes.

Management Indicators that allow us to naturally follow the evolution of results and simultaneously stimulate the setting of objectives, indicators of competitiveness, quantitative and qualitative indicators have been developed, as well as operational, economic and financial indicators. We also change here the management position of the company at all levels, considering the contribution of people and areas to the overall results. It reflects the strategy's unfolding, based on its valorisation and follow-up, through the integrated monitoring elements, supported by the Scorecard model (Basu, 2011), and the integration of management tools.

We conclude definitively that modern management systems can adapt to centennial organizations and function in perfect harmony with the experience demonstrated over time, considering that the critical success factors are based on the formation and transformation of leadership styles, and effective management programs communication (Mann, 2016).

Portuguese Culture is of excellent performance whenever people are called to participate and this process of good communication is carried out consistently.

The performance is often based on creativity, considering the behavioural binomial of using local thinking to develop global action strategies (Lopes, 2016).

However, we understand that there is a reserve of productivity, that the performance of the business fabric is associated with low levels of effectiveness, which can be resolved with the application of global management models such as Lean Management (Lopes, 2016).

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