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**A MAKROKÖRNYEZET HATÁSA AZ EXPORTÁLÓ MAGYAR
KÖZÉP,- ÉS NAGYVÁLLALATOK VERSENYKÉPESSÉGRE**

**THE EFFECT OF THE MACRO ENVIRONMENT ON THE
COMPETITIVENESS OF INTERNATIONALIZED HUNGARIAN
MEDIUM-SIZED AND LARGE ENTERPRISES**

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ABSTRACT

This study was conducted within the frames of the research program managed by the Competitiveness Research Centre of Corvinus University of Budapest, and it *aims to analyze the direct effect of the items of the macro environment on the firm-level competitiveness of internationalized Hungarian medium-sized and large enterprises*. For this purpose, the institution-based view from the Strategic Management literature was chosen to differentiate the variables found in the institutional environment of the firm while the FCI index was used to measure the firm-level competitiveness. For the quantitative analysis the survey method was selected. The data was gathered in 2018-2019 and the final sample used in this study contains 108 internationalized Hungarian medium-sized and large enterprises. After conducting factor and regression analyses the results show that the public administration, the institutions of the foreign economic relations, the education, the labor market and the wages have a positive direct effect on either the FCI index or its components while the political environment, the credit availability and the changes in the tax system have a direct negative effect. The study contributes to the current line of research by using a complex competitiveness index rather than a single profitability measure in the analysis as well as analyzing the effect of several items of the macro environment at once.

ABSZTRAKT

Ez a kutatás a Budapesti Corvinus Egyetem Versenyképességi Kutatóközpontja által vezetett kutatási program keretében valósult meg. Kutatásomban arra keresem a választ, hogy *milyen hatással vannak a makrokörnyezet egyes elemei az exportáló magyar közép-, és nagyvállalatok versenyképességére*. Ehhez a Stratégiai Menedzsment irodalmában népszerű intézmény alapú vállalatelméletet (institutional-based view) választottam mint elméleti alap a későbbi empirikus elemzéshez, míg a vállalati versenyképesség mérésére a Vállalati Versenyképességi Indexet (VVI) használtam fel. Az adatfelvétel kérdőíves módszerrel történt 2018 és 2019 között és ebben a tanulmányban egy 108 elemű exportáló magyar közép-, és nagyvállalatokat tartalmazó mintán keresztül vizsgáltam meg a kutatási kérdést. A felhasznált faktorelemzés és regressziós elemzés eredményei alapján kimondhatjuk, hogy a közigazgatás, a külgazdasági intézményrendszer, az oktatás, a munkaerőpiac és a bérszínvonal pozitív hatással van a VVI indexre vagy egyes komponenseire, míg a politikai környezet, a hitelfelvételi lehetőségek és az adórendszer változásai negatív hatást tanúsítanak. A tanulmány hozzájárul a jelenlegi szakirodalomhoz azzal, hogy egyszerre több makrokörnyezeti elem hatását is vizsgálja és a versenyképesség mérésére egyetlen profitabilitási tényező helyett egy complex indexet alkalmaz.

1. INTRODUCTION

According to Peng, Wang and Jiang (2008) the popular views of Strategic Management – the resource-based view and the industry-based view – only regard the items and institutions of the macroeconomic environment as background variables and do not include them in their research to understand the differences between how firms perform and what level of competitiveness they achieve. To fill the gap Peng et al (2009) created the institution-based view of strategic management which relies specifically on the items of the macroeconomic environment to analyze this difference. This view was used successfully on many occasions especially when researchers tried to understand how firms performed in/from developing countries.

In this study I search the answer to the following question: how the items of the macro environment affect the performance and competitiveness of internationalized Hungarian medium-sized and large enterprises and what is the nature of this relationship. In my research I rely heavily on the institution-based view detailed above in determining the different items used in the analysis. For the competitiveness side of this paper I am using as measurement the Firm Competitiveness Index created by Attila Chikán. The main idea behind this index is that “Firm competitiveness is a capability of a firm to sustainably fulfil its double purpose: meeting customer requirements at profit. This capability is realized through offering on the market goods and services which customers value higher than those offered by competitors.” (Chikán, 2008, p. 24-25). The index is composed of 3 main items: Operationality, Adaptivity and Market Performance (Chikán 2006).

The study was conducted within the frames of the research program managed by The Competitiveness Research Centre of Corvinus University of Budapest and was funded by the Tématerületi Kiválósági Program funding scheme. The goal of the research program is to understand how Hungarian firms perform on a domestic and global scale. The program started in 1995 with understanding the reasons behind the differences in the performance of the Hungarian firms and the national economy after socialist era. The 5th phase for which the data collection started in 2018 focuses on the effects of technology on the competitiveness of Hungarian firms. (Chikán et al, 2019)

First a general theoretical background will be presented which includes the basic foundations of the organizational environment, the strategy tripod, and the literature of competitiveness in Hungary. After that empirical research will be presented which analyzes the effect of certain items of the macro environment on firm competitiveness.

2. THE FUNDAMENTAL PRINCIPLES OF THE ORGANIZATIONAL ENVIRONMENT

2.1. The nature of the external environment of the organizations

As the research into the effect of the external environment on the organization has been going on for decades it is worth to explore the core literature to better understand the theoretical foundations of this field. In this chapter I look at fundamental principles about the external environment of organizations proposed in the 20th century by the two prevalent research fields: Business Policy and Organization Theory. (Bourgeois, 1980)

But before deep diving into this topic a crucial point needs answering: exactly where is the end of an organization and from where does its environment start? To put it simply the organizational environment is “everything which is outside of the organization” (Miles, Snow & Pfeffer, 1974, p. 247). Child (1972) provided a more detailed explanation which states that an organization is everything (roles, positions etc.) which is governed and thus braced together by the same authority system and everything else can be regarded as its environment. It is clear from these definitions that the boundaries between an organization and its environment are not exactly crystal clear. Miles et al (1974) also state that as organizations are constantly under change their boundaries change also. They propose that the way we define the boundaries should always be consistent with the issue or topic the research is dealing with.

The main reason this question is difficult to answer is that organizations are operating in a model called open systems introduced by von Bertalanffy, in 1950. The essence of this theory is that everything that occurs in the external environment influences the organization and its internal processes thus making it embedded into its environment. (Burnes 1996, Child 1972, Thompson & McEwen 1958, Bourgeois 1980). The main form of this influence is constraints and it is stated that “an organization cannot evolve or develop in ways which merely reflect the goals, motives or needs of its members or of its leadership since it must always bow to the constraints imposed on it by the nature of its relationship with the environment” (Child, 1972, p. 3) One of the reasons organizations actually survive is the relationship they have with their environment. (Child, 1972). This implies that the environment exerts a certain amount of control over the organization. According to Thompson and McEwen (1958) every organization is at a certain point of a two ended spectrum when talking about environmental control: on one end the environment is totally in control of an organization and on the other end the organization is totally in control of the environment.

However, Child (1972) and Miles et al (1974) argue that the open systems theory leaves a crucial gap unfilled which is the fact that organizational decision-makers have an option of choosing - up to a certain level - the environment they would like to operate in. They call it a strategic choice. This means that the relationship between the organization and its environment has some aspects which are set and can't be changed and others which are subject to a strategic choice made by the decision-makers. And this additional step takes us closer to the conclusion that this is not a one-sided relationship. The embeddedness of organizations into their environment also means that they can have a certain amount of influence on the same environment. (Thompson & McEwen 1958) This is possible since organizations are both environment dependent and environment serving. This means that organizations acquire resources for production, innovation, stakeholder satisfaction and competition from the external environment (*environment dependent*) and from these resources they produce goods and services for the external environment (*environment serving*). (Emery & Trist 1965, Ombaka, Machuki & Mahasi 2015)

In general, organizations can influence their environment up to a certain level, after that only the ones with enough resources and power can alter the environment further. (Child 1972) Furthermore Emery and Trist (1965) highlight that past research and statistical frameworks focused more on the direct relationship that organizations have with their environment, however, there is a casual texture of the environment as well meaning that different environmental actors and factors - totally indifferent to the organization - influence each other and the change occurring from this influence will reach the organizations too at some point in time.

2.2. The classification of the external environment

Bourgeois (1980) (combining the work of several researchers) defined two different types of external environment: objective environment and perceived environment.

The objective environment is „an objective set of components or state of affairs „outside” the organization” (Bourgeois, 1980, p. 33). In this case we can define the environment as an object which consists of the general environment and the task environment of an organization.

The general environment is defined by Thompson (1967) as the “residual environment composed of potential task environment members” (p. 88) This general environment can be matched with what we refer to today as the macro-economic environment and the common analysis tool used to describe this environment is the PESTEL analysis which has its origins in

the ETPS analysis (Economic, Technological, Political, Social) created by Aguilar (1967). The PESTEL acronym consists of Political, Economic, Social, Technological, Environmental and Legal factors.

The task environment consists of customers, suppliers, competitors, and regulatory groups (Dill, 1958) and as such it can be somewhat matched with what we call today the industrial environment. This task environment can be described further using attributes which are:

- complexity and heterogeneity: these describe the diverse nature (range, variety etc.) of the external factors that organizations are facing,
- dynamic shifting (or volatility): describes how fast and unpredictable is the change of these external factors over time, characterized further by:
 - o rate of change in the environmental activities relevant to an organization,
 - o the degree of difference at each event of change,
 - o the variability of change: how unpredictable and irregular is the overall pattern of these changes,
- environmental illiberality: the amount of threat decision-makers face from external competition,
- munificence: how abundant is the external environment in potential resources (Bourgeois 1980, Lumpkin & Dess 1996, Child 1972).

The perceived environment is the external environment seen by the actors inside the organization. Here the external environment can be regarded as the perceptions and opinions of key decision-makers and Miles et al (1974) highlight that the theory of a perceived environment is highly useful as it explains why different organizational decision-makers react to the same objective environment in a different way. They state that the root of this theory is the different amount of information obtained by these decision-makers about the environment. This perceived nature of defining the effects of the environment on organizations also shows us that they can't respond to every factor or change that is present in their environment. According to Porter (1985) they respond to just specific opportunities and threats through some form of a resource-driven strategy. This theory is especially important for this paper as the research method used in the empirical analysis (survey method) relies heavily on it.

Emery and Trist (1965) also characterized the external environment of organizations into 4 categories according to the interrelatedness of the environmental factors themselves (casual texture):

- placid, randomized environment: the factors that make up the environment are randomly dispersed and unchanging,
- placid, clustered environment: the factors found in the environment are grouped together, this scenario resonates with the imperfect competition situation,
- disturbed-reactive environment: when there is more than one similar organization in the close environment, closely related to an oligopol market scenario,
- turbulent fields: in this case the environment changes in a dynamic way but not solely due to the interactions happening between organizations but the environment itself is changing, results in uncertainty (Emery & Trist, 1965).

When organizations are aware of the type of environment they are facing, and the amount of control exerted by it they can articulate an appropriate response to minimize the effect. Child (1972) states organizations can manage this relationship by choosing a fitting organizational structure which on one hand maximizes the opportunities available in the environment and minimizes the constraint it applies to the organization. They can also implement certain strategies to overcome this environmental control: co-operation (bargain, co-optation, coalition) or competition. (Thompson & McEwen, 1958) Miles et al (1978) identified 4 different attitudes that an organization can have towards its environment:

- defender: one extremity of the spectrum, focuses on maintaining the status quo in its environment through investing in activities aimed at improving efficiency and resulting in cost-effectiveness, typically serves a niche market,
- prospector: the other end of the spectrum, rather operates in a dynamic environment, and it always looks for innovation, products, and opportunities,
- analyzer: in between the two extremities, merging the best characteristics of both ends, its aim is to minimize risk while maximizing profit potential,
- reactor: referred to as a “strategic failure” as it only reacts to changes in the environment in an unstable and inconsistent manner.

3. THE STRATEGY TRIPOD AND THE INSTITUTION-BASED VIEW

After reviewing the theoretical basis of the field I can introduce the strategic tripod framework which was coined by Peng M. W and it consists of the three most important views of Strategic Management literature: the resource-based view, the industry-based view and the institution-based view. (Peng, Sun, Pinkham & Chen 2009). Although these views can all be powerful in themselves when analyzing the factors affecting firm performance Su, Peng and Xie (2016) argue that together they provide a much deeper understanding of the problem as the resource-based view provides insights into the effects of internal resources and capabilities on performance, the industry-based view deals with the industrial environment which is a closer circle in the overall organizational environment and lastly the institution-based view analyzes the effect of the broader societal institutions on firm performance and thus deals with a broader circle of the organizational environment.

The basis of the resource-based view has been laid down by Barney (1991). He argued that up until that point research on firm performance failed to account for the effect of idiosyncratic resources and capabilities on the firm performance and rather was focused on the traditional “strengths -weaknesses – opportunities -threats” method. (Barney, 1991, p. 100). He also suggested to make two new assumptions about firm resources: 1.: These strategic resources are not dispersed in an equal manner throughout the different firms of an industry, 2.: The status quo regarding these differences is stable over time as these resources are not totally mobile. After concretizing the definition and the types of firm resources (physical capital, human capital, organizational capital) he created the VRIN (valuable, rare, imperfectly imitable, non-substitutability) framework to analyze if a particular firm resource can serve as a basis of sustainable competitive advantage. This view can also be expanded with the works of Teece, Pisano and Shuen (1997) about dynamic capabilities which refers to the adaptation and reconfiguration of certain organizational skills and capabilities in an innovative manner which results in wealth creation and capture.

The industry-based view can be credited to Porter (1985) and the core proposition of this view is that it analyzes firm strategies by looking at the effects of the competitive forces present at an industry level. The result of the analysis is whether a particular industry or subsector is more attractive than others as the status of the competitive forces create opportunities firms can exploit. To be able to do this analysis in a systematic way Porter (1985) created the “Five Forces Framework” consisting of: rivalry among the members of the industry, bargaining power of

buyers, bargaining power of suppliers, threat of substitutes, threat of new entrants (entry barriers).

The third leg of the strategic tripod (and the newest addition to it) is the institution-based view. The need for this third leg came from the fact that the above mentioned two views didn't completely integrate the external environment into their analysis. According to Peng, Wang and Jiang (2008) these methods included the environment in their research only at a task environment level. However, the broader external environment (previously mentioned as "residual environment" or general environment) has always been labeled as a background condition and was left out from the analysis. Meanwhile the institutions which are the core part of this "residual environment" have been proven to "*directly* determine what arrows a firm has in its quiver as it struggles to formulate and implement strategy and to create competitive advantage" (Ingram & Silverman, 2002 p. 20, italics added by Peng et al 2008, p. 923)

Institutions can be described in several ways:

- the "rules of the game, or more formally, ... the humanly devised constraints that structure human interaction" (North, 1990, p. 3),
- "regulative, normative, and cognitive structures and activities that provide stability and meaning to social behavior" (Scott, 1995, p. 33),
- "the framework within which human interaction takes place" (North, 1990, p. 4)

Their primary goal is "to reduce uncertainty and provide meaning...and *define* the boundaries of what is legitimate" [italics added] (Peng et al 2009, p. 66) However according to North (1990) a crucial distinction must be made between organizations and institutions in this regard. This stems from the fact that both can be defined as a structure or a "framework within which human interaction takes place" (North, 1990, p. 4), However in institutional theory organizations are the players of the game while institutions are the underlying ground rules. The goal of the institutions is to restrict the game in a certain (fair) way while the goal of the players is to formulate strategies in accordance with the ground rules which can win the game. (North 1990)

According to North (1990) there are two types of institutions:

- formal institutions: these are the laws, regulations and rules imposed on the organizations
- informal institutions: the norms, cultures, conventions, behaviors, and ethics of the society surrounding the organizations.

Scott (1995) divides the institutions into three categories, however these two classifications can be used together. According to Scott (1995) the institutional environment of a given country can have three different dimensions:

- regulatory: laws, regulations with an aim of restricting the behavior of the agents operating in the environment (in North's classifications these are the formal institutions)
- cognitive: this focuses on the kind of skills and knowledge that the people have acquired in a given country (in North's classifications this is part of the informal institutions)
- normative: this refers to social norms, values or the culture which affects the behavior of the people living in that particular society (in North's classifications this is part of the informal institutions)

According to Peng et al (2009) there are two main reasons why an institution-based view of strategy (based on North's institutional theory) has emerged alongside the other two legs of the strategic tripod. The first is the so called "broader new institutionalism movement throughout the social sciences in the last three decades" (Peng et al 2009, p. 64) which was led by both economists and sociologists. Both fields of science agreed on a consensus that institutions matter when describing the factors that affect firm-level strategy-making and firm-level performance. The other reason being the criticism that was aimed at the industry-based view and the resource-based view for ignoring the history and the context when analyzing the factors that influence strategy.

According to Peng et al (2009) the institution-based view centers around the dynamic interactions that firms and institutions have between each other and what strategic choices come because of these interactions, institutions being the independent variables in the equation.

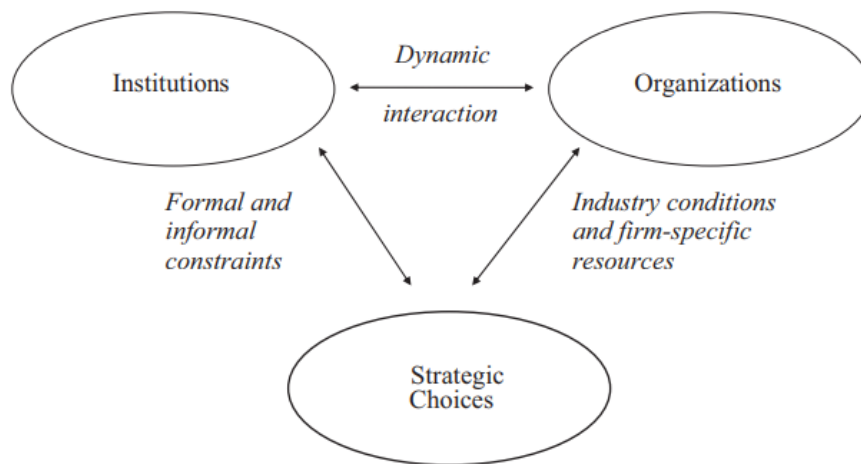


Figure 1: The interaction between institutions, organizations, and strategic choices (Source: Peng 2002, p. 253)

To model this relationship accurately Peng et al (2009) defined two main propositions for this framework:

- Proposition 1: “Managers and firms rationally pursue their interests and make strategic choices within the formal and informal constraints in a given institutional framework.” (Peng et al 2009, p. 67) This resonates with the primary goal of institutions mentioned earlier as this creates a set of rules and a regulated space and the actors (for example organizations) that are in this space only pursue their interests between certain boundaries;
- Proposition 2: “While formal and informal institutions combine to govern firm behavior, in situations where formal constraints are unclear or fail, informal constraints will play a larger role in reducing uncertainty, providing guidance, and conferring legitimacy and rewards to managers and firms.” (Peng et al 2009, p. 68) This proposition builds on the above-mentioned division of institutions into formal and informal ones.

But to be able to truly call this view the third leg of the strategic tripod Peng et al (2009) states that it must answer the four fundamental questions of strategic management:

- Why do firms differ?: the authors suggest that for the institution-based view the answer to this question lies in the differences nations or cultures have in the definition of the firm itself and the different formal and informal institutional frameworks present;

- How do firms behave?: the answer here lies in not dealing with institutions as background variables as they can be the key to understanding different behaviors;
- What determines the scope of the firm?: the authors state that in order to understand certain changes in a firm's scope over time it is not enough to use the resource-based or the industry-based view as changes in the regulatory and institutional conditions in a firm's external environment can also influence strategic decisions;
- What determines the success and failure of firms on a global scale?: when firms enter the international market knowing the institutional conditions of the target country is a crucial step to being successful there. (Peng et al, 2009)

As the strategy tripod concept promises a more comprehensive understanding of a firm's strategy and thus performance one of the prevalent areas where it was used is the case of firms operating in/from emerging economies. Ding and Ding (2022) used the institution-based view to study 136 Chinese firms and found that certain institutional factors (legal inadequacy and environmental turbulence) have significant effect on market and technological innovativeness and thus on new product performance. Yamakawa, Peng and Deeds (2008) used the institution-based view to construct a framework around the internationalization of firms in emerging economies in the direction of developed economies. Gao, Muray, Kotabe and Lu (2010) used the strategy tripod method to analyze the export activity of more than 15 000 Chinese firms between 2001 and 2005. They found that the institutional variables have a strong connection with both export propensity and export intensity. Lahiri, Meukherjee and Peng (2020) used the strategy tripod framework to synthesize the literature on family SMEs' internationalization behaviors.

4. COMPETITIVENESS

4.1. The major ways of defining and measuring competitiveness

In the past decades literature regarding the research of competitiveness has grown substantially. The basis was laid down by Porter and Krugman whose research and theoretical frameworks serve as the basis for numerous internationally used indices such as the IMD Competitiveness Index or the Global Competitiveness Report by the World Economic Forum. (Szerb, 2010)

However there isn't a single general definition for competitiveness (Feurer & Chaharbaghi 1994) as there are many levels of it:

- national (macro): includes countries or a group of countries (for example the European Union)
- regional or industry/sector (mezo): whole regions or a group of firms operating in a particular industry
- firm (micro): deals with competitiveness of individual firms
- product: only certain products or product groups (Chikán, 2006; Szerb 2010)

According to Porter and Krugman the true level of competitiveness is the firm-level as it is the core of national competitiveness although both Chikán and Szerb oppose this view as studying national competitiveness is also a viable and important field of research (Chikán 2006; Szerb, Rideg, Kruzslicz, Márkus, Lukovszki, Krabatné Fehér, Hornyák, & Horváth 2019) This paper is centered around the firm level competitiveness which has its roots in the resource-based view of the firm. In the Hungarian competitiveness literature there are two prevalent ways of defining and measuring competitiveness: the one developed by Chikán et al and the one developed by Szerb et al.

According to Chikán the definition for firm level competitiveness is: “Firm competitiveness is a capability of a firm to sustainably fulfil its double purpose: meeting customer requirements at profit. This capability is realized through offering on the market goods and services which customers value higher than those offered by competitors.” (Chikán, 2008, p. 24-25). Chikán (2008) also states that competitiveness is not something given or if achieved it lasts for the entire lifetime of a firm. Rather it is a competence which is a result of a process where the resources and capabilities of a firm are combined according to a well-constructed strategy and then paired with the factors of the external environment. This also implies that the firm has a proactive attitude towards its market environment, and it tries to influence – or at least actively follow – the changes in the stakeholders’ attitude.

In 2022, Chikán, Czakó, Kiss-Dobronyi and Losonci complemented their theory on competitiveness with the literature of the dynamic capabilities. According to Cerrato and Deppreu (2011) when researching firm-level competitiveness the factors of the external environment can serve as enablers, while the internal resources and capabilities are the drivers of competitiveness which can be divided into ordinary capabilities responsible for an efficient day-to-day operation of the firm and dynamic capabilities which serve as the sources of innovation. This process has an outcome – essentially the level of competitiveness- which will be rewarded in some way by the market.

Falciola, Jansen and Rollo (2020) share this view stating that if a firm would like to stay competitive for an extended period of time, then besides the static variables it needs to take into consideration the dynamic variables. According to the authors a competitive firm:

- competes, so it is capable of satisfying the needs of the consumer in the firm's particular target segment – this is the static dimension,
- connects, to follow the changes which happen in its environment so that it can compete in the long run – this is the dynamic dimension,
- initiates changes, using the information gathered from its environment so that it can maintain the previous two (enabler) (Falciola, Jansen & Rollo 2020).

However, a measure was needed to be able to accurately calculate firm-level competitiveness so Chikán created the Firm Competitiveness Index (previously called Company Competitiveness Index, CCI), which can be obtained using this formula: $C = (O + A) * MP$ (Chikán, 2006).

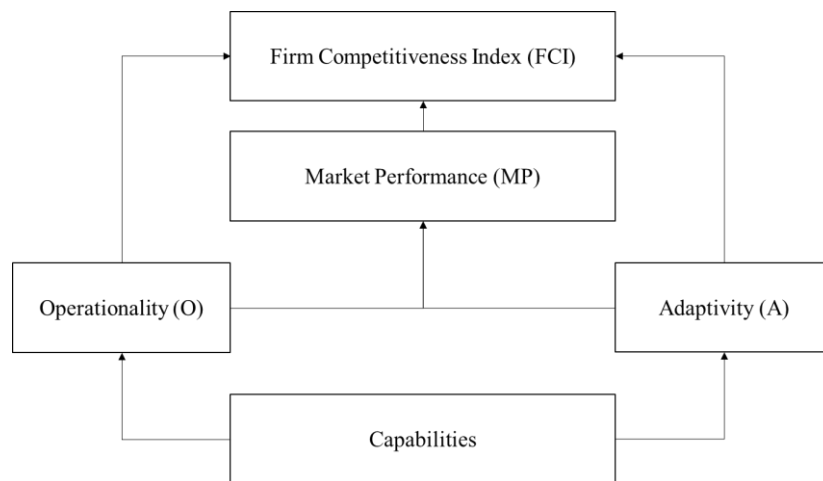


Figure 2: The Firm Competitiveness Index (Source: Author's Edition based on Chikán 2006)

C is equal to competitiveness, O means operationality and A means adaptivity. O and A together include all the competencies required for a firm to be competitive. Operationality can be paired with ordinary capabilities while adaptivity can be paired with dynamic capabilities (Chikán et al, 2022) MP is equal to market performance and it means how will the market reward the combination of firm capabilities (O and A). This is a particularly important aspect as a firm can score high in adaptability and operationality but if it can't convert this to revenue at the end of the day it will not be competitive. (Chikán, 2006)

This means it is crucial to find an accurate method of measurement for market performance as well. However, Siepel and Dejardin (2020) state that it is difficult to measure

the true performance of a firm due to the seasonal aspect of it so it is better to look at firm performance as a picture of the moment which is created at the time of the sampling and not as a conclusion which affects the firm through many years to come. The authors also list several indicators that can be used to measure firm performance such as: number of employees, revenue, return-based figures (ROA, ROI, ROE etc.), profit margins, efficiency, innovation, R&D etc.

Szerb (2010) states that although the definition of Chikán for firm level competitiveness can be used effectively, but it is rather applicable for medium and large enterprises. Thus Szerb constructed another competitiveness theory based around mainly the SME sector. The reason behind this is that in Hungary according to the Hungarian Central Statistical Office 99% of the registered enterprises is an SME. (For this the EU SME classification was used that states that an SME is an enterprise with 249 or less employees and has less than 50 million euros worth of turnover) (HCSO, 2022) However this view is not a competitor of Chikán, but rather a complementary view (Szerb 2015)

Szerb bases his view on the resource-based view as well, although he complements it with the configuration theory of Miller (1986) which states that we should study the parts of a system together rather than separately. This makes it easier to understand the whole picture due to the strong relations between the different components themselves. (Szerb et al 2019). The resulting definition for competitiveness is: “Competitiveness is the mutually dependent bundle of ten pillars—human capital, product, domestic market, networks, technology, decision making, strategy, marketing, internationalization and online presence—that allow a firm to effectively compete with other firms and serve customers with valued goods/services.” (Laufente, Szerb & Rideg, 2020, p. 560)

The Competitiveness Index (CI) was constructed for this definition by taking the average of the values of all the 10 pillars for which the data was gathered using the survey method. The first version of the index in 2010 contained 7 pillars and 21 variables, then in 2014-2015 it grew to 10 pillars and 55 variables and finally in 2020 it normalized with 10 pillars and 46 variables. (Szerb et al 2019) In this study however, due to the major presence of large enterprises in the sample the FCI index will be used.

4.2. Export activity and competitiveness

As this paper focuses on exporting Hungarian firms, it is important to assess how can export activity contribute to the competitiveness of a firm. The authors of the Competition Research

Centre of Corvinus University of Budapest used the cluster analysis of Kazainé Ónodi (2012) to identify three categories according to the export performance of the firms:

- stable growth: these were the most successful exporting firms
- stagnating
- low export performance but salient results in other operational aspects

After further analysis they found that the successful exporting firms (stable growth above) had superior profitability compared to the ones not exporting. It is important to note that if there is a majority of foreign ownership in the firm they could produce better profitability measures, however in the firms' self-assessment the authors could not find significant statistical differences. (Ábel & Czakó 2013)

We can take the statements of Stocker (2014) and Stocker & Czakó (2018) according to which the firms that are successful in exporting produce a substantially better performance over those firms who only sell to the domestic market. Besides there is a significant correlation between export revenue and net profit at those SMEs where the export performance can be deemed high. (Stocker 2014; Stocker & Czakó 2018, as cited in Várkonyi 2021)

Although these statements show that export performance has a significant effect on competitiveness, Chikán (2006) states that in the construction of the FCI index and his view on competitiveness the field of export orientation did not play a substantial role so this could serve as a basis for further research.

In terms of the measurement of export performance Zou, Taylor and Osland (1998) lists many ways of measurement including export revenue, export CAGR, export market share etc. To have a clear system of measurement the authors have constructed the EXPERF scale.

5. EMPIRICAL EVIDENCE OF INSTITUTIONAL FACTORS INFLUENCING FIRM PERFORMANCE

There have been two main lines of research when studying the effect of the macro environment on firm performance: direct relationship research or indirect (moderating) relationship research.

On one hand many authors focused on a specific aspect or factor of the institutional environment and investigated how will it directly influence firm performance. For firm performance the measures used were sales growth/profitability (Dabla-Norris, Misch, Cleary and Khwaja 2020) and ROA (Gaganis, Pasiouras and Voulgari 2019). The institutional factors analysed included:

- the quality of the tax administration (Tax Administration Quality Index)
- how the doing business environment is regulated by the government (BUSFR index)
- how easy it is to acquire credit (GETCR index)
- culture (Hofstede 1980: power distance, individualism, masculinity, uncertainty avoidance, long-term versus short-term orientation)
- corruption (CORFR index) (Dabla-Norris et al 2020, Gaganis et al 2019)

Regarding the quality of the tax administration Dabla-Norris et al (2020) found that there is a statistically significant, inversely proportional relationship between the level of tax compliance burden and the performance of small and medium firms in 21 emerging economies and developing countries. They even state that improving tax administration processes can narrow the gap that exists between SMEs and large firms.

Gaganis et al (2019) undertook cross-country research on 40 000 EU28 SMEs in the manufacturing industry between 2006-2014. Their results show that both BUSFR and GETCR have a positive, statistically significant effect on profitability so EU SMEs can perform better if it is easier to operate a business and acquire financing. For the culture they found that PDI and UAI has a negative effect while IND and MAS have a positive effect on profitability. For the corruption the authors found support for the “sand the wheel” depiction of corruption so higher levels of corruption have a negative effect on SMEs profitability.

In the case of indirect (moderating) relationship research authors investigated the relationship between firm performance measured by: ROA, ROS, labor productivity etc. (Xiong, Wang & Zhao 2020; López-Zapata, García-Muiña & García-Moreno 2019; Forcadell, Sanchez-Riofrio, Guerras-Martín & Romero-Jordán 2020; Donbesura, Oppong, Ampong, Owusu-Yirenkyic & Chu 2020 with an international aspect) or turnover, value-added, employment short-run growth (Cainelli, Ganau & Giunta 2022) and other internal or external factors related to organizations including:

- a re-innovation attempt after a failed innovation (Xiong et al 2020);
- being a member of a national or international business group (Cainelli et al 2022);
- technological and organizational innovation (Donbesura et al 2020)
- the effect of diversification strategy (López-Zapata et al 2019)
- the effect of business portfolio restructuring (BPR) (Forcadell et al 2020)

The institutional environmental factors in this regard were handled as variables having an indirect or moderating effect and the results are summarized in Table 1.

It can be seen from these various lines of research and their results that the analysis of the institutions of the external environment of firms can highly contribute to understanding the reasons behind changes in firm performance so it is justified to consider it as an important view of Strategic Management literature besides the resource-based view and the industry-based view.

Author	Year	Sample	Direct measure	Institutional measure (moderating)	Performance measure	Relationship
Xiong,et al	2020	408 subsidiary drug manufacturers in China	re-innovation attempt after a failed innovation (RIA)	economic intervention by the government (GI), level of financial development (FD), strength of the legal environment (LE)	ROA, ROS, ROE	RIA – performance: positive GI has a negative moderating role, FD has a positive moderating role, LE no significant evidence
Cainelli et al	2022	3104 Italian & Spanish manufacturing firms	being a member of a national or international business group	regional institutional environment	turnover, value-added, employment short-run growth	for a short period of time there is a performance premium for members of an international business group but this decreases as the regional institutional environment improves
Donbesura et al	2020	204 internationalized SMEs in Ghana	technological and organizational innovation (TI, OI)	institutional specificity, institutional enforceability	international sales growth, international profitability, the share of the international market, return on international investment	TI, OI – performance relationship is positive and both institutional variable further increase the positive effect
López-Zapata et al	2019	1828 Spanish manufacturing firms	diversification strategy	economic cycle	ROA, labour productivity and sales growth	ROA, and LP record significant changes in growth and recession periods
Forcadell et al	2020	4969 firms from 15 European countries	business portfolio restructuring (BPR)	institutional environment for corporate governance (IECG) and the economic cycle	ROA	BPR – ROA: positive effect in network oriented IECG it is higher economic cycle has a negative effect on the BPR – ROA relationship, in market oriented IECG it is less intense

Table 1: Studies including the indirect effect of the institutional environment on firm performance (Source: Author's Edition)

6. RESEARCH METHODOLOGY

6.1. The survey method

In the empirical research for this thesis the survey method was used. The data collection took place between October 2018 and July 2019 under the research program of The Competitiveness Research Centre of Corvinus University of Budapest and was managed by TÁRKI Társadalomkutatási Intézet Zrt. With the survey method they assessed the perceptions and opinions managers and key decision-makers had, which - although might carry a perception bias – can be considered a reliable source of information and data for analysis as it is also highlighted in the theoretical chapter. The survey targeted small, medium-sized, and large firms in Hungary and the fields included were management, production, finance, and marketing.

6.2. Characteristics of the analyzed sample

The data collection happened among firms operating as individual legal entities in Hungary. From the initial target pool of 4295 companies more than 2000 were contacted. After the data collection and data cleansing 234 valid responses remained in the database. To complete the gathered information financial data was requested from Bisnode and after deleting 25 responses due to non-adequate financial data 209 valid results remained in the now complete database. The results have also been anonymized for both company and respondent personal names and it is based on the license of the Hungarian Scientific and Research Ethics Committee (IV/4599-2/2020/EKU).

As this paper focuses on internationalized medium-sized and large firms, respondents with no export revenue in 2018 and companies with fewer than 50 employees had to be excluded resulting in 119 cases. In order not to distort the result of further calculations the sample was tested for outliers and missing values for the independent variables (described below). After removing the missing cases and the outliers the final sample included 108 cases. These firms are operating in manufacturing, construction, commerce, transportation, storage, hospitality, ICT, technical activities, and entertainment. The distribution of the sample based on size compared to the population can be seen in Table 2. As the distribution of the sample is very similar to the population and the sample ratio is 3.2%, we can regard the sample as representative for the size of the firm.

	Sample		Population	
	Amount	%	Amount	%
Exporting medium-sized firms	81	75%	2587	78%
Exporting large-sized firms	27	25%	723	22%
Sum:	108	100%	3310	100%

Table 2: The distribution of the sample and the population based on firm size (Source: Author's Edition based survey data and on HCSO, 2020)

6.3. The research question, variables selected and methodology

The main research question for this paper is to find out *which items of the macro (institutional) environment have a significant effect on the competitiveness and performance of internationalized Hungarian medium-sized and large enterprises and what is the nature of this effect.*

6.3.1. Variables representing the macro environment

For the measurement of the macro environment, based on the CEO survey, variables shown in Table 3 were used. The variables were responses to three questions:

- VV3: Since 2016 how were the main characteristics of your firm affected by...?
- VV4: How do you evaluate the following based on the success of your firm?
- VV6-VV7: How did the following items impact your company's success between 2016 and 2018?

The variables were measured on a 5-item Likert-scale:

- VV3: 1: not at all, 5: significantly
- VV4, VV6, VV7: 1: very adversely, 5: very advantageously

No.	Item
x3a	the scientific and technological environment
x3b	the change of law and policy expectations
x3c	the change in customer expectations
x3d	the competitors' behavior, new entrants
x3e	the ecological environment
x3f	the social expectations
x4a	the general operation of the current government
x4b	the economic policy
x4c	the general political environment
x4d	the general economic environment
x4e	domestic market trends
x4f	global market trends
x4g	the trends of the technological advancements
x6a	the base rate of the central bank
x6b	the changes in the exchange rate (HUF)
x6c	the level of inflation
x6d	the opportunities for obtaining credit
x6e	the changes in the tax system
x6f	the rate of wages
x6g	the level of state intervention
x6h	the institutions of the foreign economic relations
x7a	the operation of the central administration
x7b	the operation of the local administration
x7c	the system of the higher education
x7d	the system of the professional training sector
x7e	the state of the labor market

Table 3: The independent variables measuring the institutional environment (Source: Author's Edition)

6.3.2. Variables representing performance and competitiveness

For the dependent variable – as indicated in the theoretical background - the Firm Competitiveness Index (FCI) was selected. It was calculated based on the framework of Chickán (2006), using question VV8 and can range from 1-50. The analysis was also carried out for the components of the FCI index: Operationality, Adaptivity and Market Performance.

6.3.3. Methodology used

As 26 independent variables were selected altogether factor analysis was chosen to merge the variables which show similar characteristics. First, they were tested for collinearity using two-tailed Pearson correlation and the results show that there is a significant amount of correlation which makes them favorable for the factor analysis.

Total	Significant on 1%	Over 0,2	Over 0,7
325	105	126	2

Table 4: The results of the correlation analysis (Source: Author's Edition)

For the factor analysis the principal components method was used and the criteria for making a factor was an eigenvalue of 1. To get a model that shows adequate results and fulfills all condition 6 variables had to be left out from the analysis. The final model includes 7 factors using varimax rotation which explains the 76,342% of the total variance, the KMO measure was 0,732 and significant. The threshold for the factor loading was 0,55 (based on the threshold for a sample of 100) and as a result the factors can be seen in Table 5.

These factors were later used as independent variables in the linear regression analysis for the FCI and its components. The requirements of the regression analysis were met every single time and for the main analysis the enter method was used. The results however were checked using backward and forward regression as well and they proved the consistency of the results. The findings of the regression analyses can be seen in the next section.

<u>Factor</u>	<u>Variable</u>	<u>Loading</u>
Foreign economic relations, education and the public administration	x7c: the system of the higher education	0,843
	x7b: the operation of the local administration	0,831
	x7a: the operation of the central administration	0,662
	x7d: the system of the professional training sector	0,586
	x6h: the institutions of the foreign economic relations	0,557
The ecological and the social environment, customers and competitors	x3e: the ecological environment	0,884
	x3f: the social expectations	0,835
	x3d: the competitors' behavior, new entrants	0,830
	x3c: the change in customer expectations	0,681
The political environment	x4b: the economic policy	0,855
	x4a: the general operation of the current government	0,810
	x4c: the general political environment	0,770
Credit and taxes	x6d: the opportunities for obtaining credit	0,806
	x6e: the changes in the tax system	0,744
Technological and global market trends	x4g: the trends of the technological advancements	0,885
	x4f: global market trends	0,825
The labor market and the wages	x7e: the state of the labor market	0,825
	x6f: the rate of wages	0,744
The base rate and the exchange rate	x6a: the base rate of the central bank	0,783
	x6b: the changes in the exchange rate (HUF)	0,775

Table 5: The factors formed after the analysis (Source: Author's Edition)

7. RESULTS

The descriptive statistics for the independent variables can be seen in Table 6. From the 108 cases analyzed very few had missing values for the variables and due to this minimal loss of data, general conclusions can be drawn. The results show that key-decision makers' opinions about the effect of these variables on their firms were indifferent, although some of them stand out. The mean for *the scientific and technological environment* and for *the change of law and policy expectations* goes below 3 which means that these factors affected the firms even less than the others. On the opposite side of the spectrum the mean for *the domestic market trends*, *the global market trends* and *the trends of the technological advancements* goes over 3,5 and

both the mode and the median are 4. This means that at least half of the respondents stated that they could benefit from the domestic and international market trends that happened between 2016 and 2018 as well as from the technological advancements introduced at that time. Due to this we can state that these variables had the most positive effect on the internationalized Hungarian medium-sized and large enterprises in those two years. *The general economic environment* had the second most positive effect on firms and together with *the domestic market trends* and *the institutions of the foreign economic relations* they show no value of 1 in the range meaning that no firm from the sample expressed a totally negative opinion about the effect of these variables on their success.

It might seem controversial that the effect of *the scientific and technological environment* is rather low while the effect of *the trends of the technological advancements* came out high. The reason behind this difference is twofold: first of all, the understanding behind the measurement of the two variables is different (for *the scientific and technological environment* the measurement was about the amount of change inflicted on the firm while for *the trends of the technological advancements* the measurement was about the direction of the effect) and also they relate to different concepts the former representing the current state and the latter representing the future trends.

The standard deviation and the variance show a high level of fluctuation in the answers. The reason behind this could come from the diverse nature the main characteristics of these firms show in ownership structure (municipal/government majority, private majority, foreign majority), main activity (sample contain manufacturing, commerce and service and construction firms as well) and performance cluster (leader, follower, lagging behind, average performer). Although this was not tested statistically and thus can be regarded as material for further research.

	N Valid	N Missing	Mean	Median	Mode	Std. Deviation	Variance	Minimum	Maximum
the scientific and technological environment	105	3	2,95	3,00	3,00	1,06	1,12	1	5
the change of law and policy expectations	108	0	2,94	3,00	3,00	1,06	1,12	1	5
the change in customer expectations	108	0	3,19	3,00	3,00	1,07	1,15	1	5
the competitors' behavior, new entrants	107	1	3,34	3,00	3,00	0,97	0,94	1	5
the ecological environment	107	1	3,22	3,00	3,00	1,16	1,35	1	5
the social expectations	106	2	3,20	3,00	3,00	1,09	1,19	1	5
the general operation of the current government	102	6	3,28	3,00	3,00	0,76	0,58	1	5
the economic policy	104	4	3,25	3,00	3,00	0,83	0,69	1	5
the general political environment	102	6	3,11	3,00	3,00	0,72	0,51	1	5
the general economic environment	104	4	3,36	3,00	3,00	0,75	0,56	2	5
domestic market trends	105	3	3,51	4,00	4,00	0,69	0,48	2	5
global market trends	104	4	3,65	4,00	4,00	0,84	0,71	1	5
the trends of the technological advancements	106	2	3,76	4,00	4,00	0,86	0,73	1	5
the base rate of the central bank	108	0	3,19	3,00	3,00	0,83	0,68	1	5
the changes in the exchange rate (HUF)	105	3	3,01	3,00	3,00	0,87	0,76	1	5
the level of inflation	106	2	3,08	3,00	3,00	0,92	0,84	1	5
the opportunities for obtaining credit	105	3	3,33	3,00	3,00	0,95	0,90	1	5
the changes in the tax system	106	2	3,17	3,00	3,00	0,88	0,77	1	5
the rate of wages	106	2	3,02	3,00	3,00	0,93	0,86	1	5
the level of state intervention	103	5	3,15	3,00	3,00	0,81	0,66	1	5
the institutions of the foreign economic relations	99	9	3,24	3,00	3,00	0,78	0,61	2	5
the operation of the central administration	107	1	3,23	3,00	3,00	0,76	0,58	1	5
the operation of the local administration	107	1	3,23	3,00	3,00	0,80	0,63	1	5
the system of the higher education	105	3	3,14	3,00	3,00	0,79	0,62	1	5
the system of the professional training sector	105	3	3,01	3,00	3,00	0,88	0,78	1	5
the state of the labor market	108	0	2,92	3,00	3,00	1,15	1,33	1	5

Table 6: The descriptive statistics for the independent variables (Source: Author's Edition)

The factors created from these variables show promising results in terms of statistical information carried. As mentioned previously the KMO measure returned a significant value of 0,732, the majority of the factor loadings was over or near 0,75 and the 76,342% of the total variance is explained by the model. The variables grouped together can be differentiated from each other well and the ones inside the groups not only belong together statistically but in meaning and the topic they represent. This also validates the consistency of the responses given

by the decision-makers and the assumption that variables which have similar or related meaning will affect the firms in rather similar ways and this provided a favorable basis for the regression analysis.

As previously mentioned, the regression analysis was carried out for the FCI index and its components separately. The summary of the four models can be found in Table 7 and the ANOVA tests in Table 8. The R and R² figures show that each model carries a significant amount of statistical information and explains the changes in the dependent variables well. The ANOVA tests underpin the statement that the requirements of the regression analysis were met in every model.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
Firm Competitiveness Index	0,454	0,207	0,140	5,84863	1,898
Adaptivity	0,538	0,289	0,230	0,41909	2,028
Operationality	0,447	0,200	0,133	0,40348	1,892
Market Performance	0,402	0,162	0,092	0,60142	1,943

Table 7: Model summary for the regression analyses (Source: Author's Edition)

Model		Sum of Squares	df	Mean Square	F	Sig.
Firm Competitiveness Index	Regression	747,779	7	106,826	3,123	0,006**
	Residual	2873,348	84	34,207		
	Total	3621,127	91			
Adaptivity	Regression	5,995	7	0,856	4,876	0,000***
	Residual	14,754	84	0,176		
	Total	20,749	91			
Operationality	Regression	3,408	7	0,487	2,991	0,007**
	Residual	13,675	84	0,163		
	Total	17,083	91			
Market Performance	Regression	5,864	7	0,838	2,316	0,033*
	Residual	30,384	84	0,362		
	Total	36,247	91			

Table 8: ANOVA tests for the regression analyses (Source: Author's Edition)

Analysing the results for the FCI we can see that *the foreign economic relations, education and the public administration and the credit and taxes* came out as significant. The former has a major positive effect on the FCI with a beta of 2,251 which means that the respondents that deemed the effect of this factor positive regarding the success of their firm indeed have higher competitiveness. Coupled with the fact that it came out as statistically

significant and positive in all models and regarding all components of the FCI we can state that together the institutions of the foreign economic relations, the system of the higher education, the professional training sector, and the central and local administration play a key positive role in the competitiveness of the internationalized Hungarian medium-sized and large enterprises. However, the latter (*the credit and taxes*) had a negative direct effect on the FCI with a beta of -1,295 which means that firms that seek to enhance their success with the help of external financing and through action regarding the tax system will in fact achieve inferior competitiveness compared to the ones trying to build success through the components of the previous factor.

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	28,050	0,610		46,002	0,000***		
Foreign economic relations, education and the public administration	2,251	0,613	0,357	3,672	0,000***	1,000	1,000
The ecological and the social environment, customers and competitors	-0,245	0,613	-0,039	-0,399	0,691	1,000	1,000
The political environment	-0,746	0,613	-0,118	-1,216	0,227	1,000	1,000
Credit and taxes	-1,295	0,613	-0,205	-2,112	0,038*	1,000	1,000
Technological and global market trends	0,448	0,613	0,071	0,731	0,467	1,000	1,000
The labor market and the wages	0,661	0,613	0,105	1,079	0,284	1,000	1,000
The base rate and the exchange rate	0,467	0,613	0,074	0,762	0,448	1,000	1,000

Table 9: The results of the regression analysis for the FCI (Source: Author's Edition)

When analyzing the Adaptivity of the firms these factors come out as significant: *foreign economic relations, education and the public administration, the ecological and the social environment, customers and competitors and the labor market and the wages*. The first one was discussed above although the other two have a positive direct effect on the adaptive nature of the firm too, only not that much (beta 0,096 and 0,156 respectively). This means that those firms who pay attention to the changes of the social and ecological environment and follow closely the moves of the competitors and the changes in customer behavior in the end manage to adapt their operations to these changes better. This assumes a proactive behavior from the firms which will eventually bring more benefit than a more reactive behavior. This also confirms the argument presented in the theoretical chapter which states that an organization whose behavior towards its environment can be deemed reactor is considered a

strategic failure. (Miles et al, 1978) The positive effect of the *labor market and the wages* also reinforces this idea as reacting to changes often requires new knowledge and know-how and one of the ways of acquiring this is through the labor market.

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	3,731	0,044		85,397	0,000***		
Foreign economic relations, education and the public administration	0,147	0,044	0,307	3,336	0,001***	1,000	1,000
The ecological and the social environment, customers and competitors	0,096	0,044	0,201	2,185	0,032*	1,000	1,000
The political environment	-0,068	0,044	-0,142	-1,541	0,127	1,000	1,000
Credit and taxes	-0,071	0,044	-0,148	-1,614	0,110	1,000	1,000
Technological and global market trends	-0,026	0,044	-0,055	-0,602	0,549	1,000	1,000
The labor market and the wages	0,156	0,044	0,327	3,558	0,001***	1,000	1,000
The base rate and the exchange rate	0,021	0,044	0,044	0,474	0,637	1,000	1,000

Table 7: The results of the regression analysis for the Adaptivity component (Source: Author's Edition)

For the Operability component of the FCI index the regression analysis showed a significant positive correlation with three factors: *foreign economic relations, education and the public administration* and *the labor market and the wages* with a positive effect and *the political environment* with a negative effect. The first one was discussed above, the effect of the second one was to be expected since the labor market has a major role in the efficient operation of a firm. However, from the results it seems that the more positive key decision-makers deemed the effect of the political environment on the success of their firm the less efficiently they operate. This enables us to assume that building connections between the political environment and the firm will not result in the benefits one would anticipate.

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	3,716	0,042		88,336	0,000		
Foreign economic relations, education and the public administration	0,117	0,042	0,270	2,768	0,007**	1,000	1,000
The ecological and the social environment, customers and competitors	0,016	0,042	0,036	0,371	0,712	1,000	1,000
The political environment	-0,088	0,042	-0,203	-2,082	0,040	1,000	1,000
Credit and taxes	-0,043	0,042	-0,100	-1,028	0,307	1,000	1,000
Technological and global market trends	-0,028	0,042	-0,064	-0,653	0,516	1,000	1,000
The labor market and the wages	0,112	0,042	0,259	2,658	0,009**	1,000	1,000
The base rate and the exchange rate	0,021	0,042	0,049	0,504	0,616	1,000	1,000

Table 8: The results of the regression analysis for the Operability component (Source: Author's Edition)

In the case of Market Performance no variables came out as significant alongside the *foreign economic relations, education and the public administration* whose effect have been discussed above, although the model as a whole is significant (as shown in the ANOVA table) and as such the items of the macro environment have an effect on the Market Performance of the firm.

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	3,745	0,063		59,719	0,000		
Foreign economic relations, education and the public administration	0,179	0,063	0,284	2,839	0,006**	1,000	1,000
The ecological and the social environment, customers and competitors	-0,074	0,063	-0,116	-1,166	0,247	1,000	1,000
The political environment	-0,028	0,063	-0,044	-0,443	0,659	1,000	1,000
Credit and taxes	-0,123	0,063	-0,194	-1,947	0,055	1,000	1,000
Technological and global market trends	0,086	0,063	0,136	1,361	0,177	1,000	1,000
The labor market and the wages	-0,047	0,063	-0,075	-0,747	0,457	1,000	1,000
The base rate and the exchange rate	0,039	0,063	0,063	0,626	0,533	1,000	1,000

Table 9: The results of the regression analysis for the Market Performance component (Source: Author's Edition)

8. DISCUSSION

To understand the results of the analysis better benchmark countries were chosen. The basis of the benchmark was the World Economic Forum 2017-2018 Global Competitiveness report reflecting 2017 data (Schwab, 2017). Even though it would be implicit to use 2018 data for the benchmark - as the last Company Competitiveness Research focused on the state firms had in 2018 - , the calculation methodology of the WEF report changed that year and thus it would make it difficult to compare the data of earlier reports. The 2017 report categorized the countries of the world into 3 stages of development: Factor-driven, Efficiency-driven, Innovation-driven. Between these three there are two transition phases: transition from stage 1 to stage 2 and transition from stage 2 to stage 3. (Schwab, 2017)

Hungary is in the transition phase from stage 2 to stage 3 and the countries used in the benchmark can be seen categorized according to stages in Table 10.

Author	Country	Stage of economic development
Prokop et al (2018)	Czech Republic	Innovation-driven
Prokop et al (2018)	Slovak Republic	Transition from 2 to 3
De Jong & Van Witteloostuijn (2015)	Netherlands	Innovation-driven
Tan & Tran (2017)	Vietnam	Transition from 1 to 2
Jackowicz, Kozłowski & Mielcarz (2014)	Poland	Transition from 2 to 3
Wong & Hooy (2018)	Malaysia	Transition from 2 to 3
Current study	Hungary	Transition from 2 to 3

Table 10: Benchmark countries and their stage of economic development (Source: Author's Edition based on Schwab, 2017)

In this chapter the results of the analysis will be compared to benchmark country research in the related fields, some of which were included in the theoretical background along with the works of Mertzanis and Said (2019), Jackowicz, Kozłowski & Mielcarz (2014), Chen et al (2017), Wong & Hooy (2018), De Jong & Van Witteloostuijn (2015), Tan & Tran (2017) and Prokop, Odei and Stejskal (2018) which have not been presented before.

As for the “Technological and global market trends” and “The base rate and the exchange rate” factors the analysis returned no significant results, and as such no further discussion is

done on the matter, although a more in-depth analysis of these two factors would be an ideal line of additional research.

The public administration, the institutions of the foreign economic relations and the education

This factor had a significant positive relationship with all the components of the FCI index and the index itself. This result is in line with research in benchmark countries.

The system of the higher education had the biggest factor loading indicating that it has a substantial part in determining firm competitiveness. Prokop, Odei and Stejskal (2018) came to the same conclusion when researching the relationship between Czech and Slovakian firms, the government, and universities. After analyzing 3980 firms their conclusion states that in both countries companies rely heavily on their relationship with universities especially in research matters as it boosts their innovative performance which resonates with the Adaptivity component presented in this study. The current analysis adds to this conclusion by extending the significant positive relationship to the whole FCI index.

The other major topic of this factor is the public administration represented by two variables: the operation of the central and the local administration. Their positive role in firm competitiveness resonates with the findings of De Jong & Van Witteloostuijn (2015) and Tan & Tran (2017) who researched the effect of red tape on firm performance in the Netherlands and the effect of the quality of provincial administration on firm productivity in Vietnam respectively. In both cases they state that the better administrative environment and less cost associated with red tape and regulation results in better performance. Even though these findings do not come from benchmark countries the conclusion is still viable. As Vietnam is classified as a transition economy going from stage 1 to stage 2 and the Netherlands being an innovation-driven economy the findings are the same in both ends of the spectrum. Coupled with the findings of this study we can regard the result as a general conclusion.

The ecological and the social environment, customers and competitors

This factor had a significant positive relationship with the Adaptivity component of the FCI index. In a way this factor represents the reaction to the changes and expectations of both the inner and outer environment of the firm represented by the society, the customers and the competitors. The society constantly changes, the customers develop new needs and the competitors are constantly innovating so firms need to pay attention to these changes. And

according to the results the more a firm reacts to these changes - which eventually leads to changing itself and its operation - the more adaptive it becomes.

Credit availability and taxes

This factor had a significant negative relationship with the FCI index meaning that the more positive impact this factor had on the success of the firm according to the key decision-makers' opinions the lower their competitiveness is. This result contradicts the findings presented in the theoretical part of this paper.

In the case of credit availability Gaganis et al (2019) found a positive relationship between the profitability of more than 40 000 E28 firms and the easiness of acquiring financing. The reason behind this can come from the different size of the samples used, and the fact that they excluded firms with more than 250 employees from the analysis. Also the EU28 includes countries with very different characteristics and in very different development stages which might be another reason behind the different results.

In the case of the tax system Dabla-Norris et al (2020) found that a more efficient tax administration can boost the performance of firms although their focus was also on smaller firms and their sample was drawn from firms operating in either factor-driven economies, efficiency-driven economies or the ones in stage 1 to stage 2 transition.

The political environment

This factor had a significant negative relationship with the Operationality component of the FCI index. Although this result seems controversial the recent studies around political connection produce differing results as well. Wong & Hooy (2018) cite past literature which regard political connectedness as a valuable asset to minimize external risk. However, they analyzed the status quo in Malaysia and found that from the four types of political connectedness identified (government-linked companies, board of directors, businessmen, family members) only the first two produced a positive effect on firm performance. Chen et al (2017) also revealed that the connection between firms and the political environment can be quite complicated and act as a double-edged sword when talking about firm performance and operations. Their analysis of Chinese firms show a negative connection between political connection and firm value. Jackowicz, Kozłowski & Mielcarz (2014) analyzed the matter in Poland and concluded that there is a negative connection between the political connectedness of a firm and the operational performance.

The labor market and rate of wages

This factor had a significant positive relationship with the Operationality and Adaptivity component of the FCI index. This resonates with the research of Mertzanis and Said (2019) who investigated the effect of access to skilled labor on firm performance in 138 developing countries and found a general, statistically significant positive relationship between the two.

9. CONCLUSION

The institution-based view sheds light on the importance of the macro environment and the institutions when analyzing the performance and the competitiveness of a firm. This study used this view to investigate how the different items of the macro environment affect the competitiveness and the performance of internationalized Hungarian medium-sized and large enterprises.

The results of the analysis show that the factor involving *the public administration, the institutions of the foreign economic relations and the education* had an undeniable positive, direct effect on all the components of the FCI index and the index itself. As this relationship is very strong, we can state that the items of the macro environment contained in this factor contributed massively to the success of the participating firms between 2016. Besides, *the labor market and wages* also had a significant positive effect on the Operationality and Adaptivity components of the FCI which further justify the conclusion that cultivating a good relationship with the universities and the labor market will bring major benefits to the company.

The political environment and the credit availability and taxes factors had a significant negative effect on the Operationality component and the FCI index respectively which tells us that relying on the connection with the political environment and trying to base the success of the firm on external financing will not result in the exact benefits one might expect. Thus, it is advisable to turn the attention to the items mentioned previously as the resources invested in them have a better chance of return.

This study has contributed to the current line of research by analyzing the direct effect of several items of the macro environment at once and comparing it to a complex competitiveness index rather than a single profitability measure. The main limitations are the simple statistical methods used and the fact that - although the factor analysis was needed to simplify the analysis - 25% of the total variance was lost and with it that amount of information carried by the

variables. Also the survey method can result in a certain amount of bias in the responses which can affect the results.

Further research can include an in-depth analysis of the factors and the different aspects of the variables related to the FCI index and firm performance using accurate financial data and advanced, multidimensional statistical modelling.

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