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FOREWORD to
INSIGHTS INTO REGIONAL DEVELOPMENT
2020 Volume 2, Number 1 (March)

Dear readers,

Despite of globalization scale regional development remains a fundamental core of overall wellbeing of our planet. As the very recent events show, tensions in one region, to be it political, ecological, social or technological, almost instantly affects neighbouring and geographically remoted countries.

It is paradoxically, that the more we globalize, the more regional development issues become common. All efforts to reveal development issues, to identify a diagnoses of those issues gradually allow a new ideas, and better solutions to emerge. Therefore is congratulate and support all initiatives leading us to better life through solving problems at local level for global welfare.

Insights into Regional Development journal serves as international hub of ideas exchange. It is supported by European Commission through Horizon 2020 funding. Let us wish all of us new bright horizons in all our deeds and personal lives.

With my respectful greetings,

Bronius BRADAUSKAS
Member of the SEIMAS
of the Republic of Lithuania



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COMPARATIVE STUDY BETWEEN TWO INNOVATIVE CLUSTERS IN MOROCCO AND ITALY *

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Abstract. The paper takes place in the research field of the European project “Cluster Development Med” (Horizon 2020) focusing on the innovation and technology in the sustainable development area. Authors suggest a comparative study, which allows selecting the most innovative clusters in Morocco and Italy, and making comparisons between and within them. The analysis defines the weaknesses and strengths in the both examined clusters and embrace three dimensions of cluster activity, so called, “Human and Material Resources, Activities, Processes and strategies”. In this paper, we start by giving a global presentation of Moroccan clusters, their history and geolocation. As a first case of study, we focused on the “Maroc Numeric Cluster” (MNC) mainly on its limitations and weaknesses. Thus, in the second case study, we present a cluster that is the beating heart of Italian excellence in the energy sector (Lombardy Energy Cleantech Cluster LE2C). The aim of this paper is to present the LE2C strengths and successful strategies in order to adapt them to the MNC cluster so that it can promote and accelerate again with a successful process.

Keywords: Clusters; Maroc Numeric Cluster; Morocco; Italy; Cluster Development Med project; Lombardy Energy Cleantech cluster

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1. Introduction

In the Southern Mediterranean countries, as in those of the North, the interest for the organization of the companies in clusters was born from the awareness of the intensification of competition on the international scale and the exhaustion model based on relative advantage represented by cheap labor. Complementary policies of attractiveness of foreign investments (tax exemptions, adaptation of legislation, provision of developed areas ...) aimed at capturing production segments, initiatives in favor of clusters are part of a logic of competitiveness excluding cost of production (innovation, quality, speed, compliance with standards).

Conscious that the choice of location of companies that are subject to strong competitive pressure is based on an overall analysis of the factors of competitiveness, the countries studied (Morocco and Italy) have begun a shift in favor of a built attractiveness. It is this context that justifies today's interest in clusters and policies organizing synergies between production actors and those of innovation.

Spaces of cooperation and mutualisation, clusters lend themselves to inter-company partnerships both inside and outside their own boundaries. They offer potential for segmented production projects, which can indifferently stage multinationals or SMEs (Small and Medium Enterprises). Trained in exchanges, appreciation of complementarities and respective advantages, the entrepreneurs of these groups are natural candidates for co-productions and co-location. This can result in the networking of territories and localized productive systems, a move that can extend to cluster expansion (Gallego, Calame 2012). The concept of a cluster is born from the observation of the spontaneous tendency of the industrial enterprises to regroup to share advantages related to their proximity and to the nature of the economic relations which are established between them. This phenomenon was analyzed at the end of the 19th century by Alfred Marshall, a British economist who studied booming industrial cities like Birmingham and Sheffield (Marshall, 1890).

These ideas will resurface a century later. It was at the turn of the 1980s, in a context of economic crisis and questioning of the Fordist model of organization, that the district of Marshall was rediscovered by a group of Italian economists (Becattini et al. 1978) who were interested in producer groups in the northern regions of Italy, which were remarkably competitive in their markets. They will designate these concentrations of both specialized and territorialized enterprises of industrial districts. From these first discoveries, economists will not cease to be interested in this notion of agglomeration of companies, commonly called cluster.

Their recognition increased in the 1990s with the work of Michael Porter in which he identifies a number of factors explaining the competitiveness of countries: clusters would be one of them (Porter, 1998). Later, he explains the causes. The combination of competitive and cooperative relationships between co-located firms would lead to better learning, a stronger diffusion of innovation, and thus a greater competitiveness of industries located in a cluster. He therefore will insist on the importance of the proximity of the actors in the constitution of a cluster, preliminary necessary to his phase of maturation marked by the formation of a network that is to say a systemic form of cooperation which promotes the knowledge. However, talking about clusters does not only concern geographical and physical relations, but especially the social and human relationships between a wide range of members such as institutions, universities, research centers and companies, where synergy between the public and private sectors becomes even more important (Monni, Spaventa 2007, 2009; Zemlickiene and al. 2017; Ahmed et al. 2017; Lincaru et al. 2018; Razminienė, Tvaronavičienė 2018; Havierníková, Kordoš 2019).

To promote and stimulate inter-cluster cooperation, especially between North and South, networks of clusters must be formed. The ClusDevMed project already plays a role in networking dynamics. This cooperation offers opportunities to intensify research and technological potential, to improve competitiveness, to support regional

socio-economic development and to strengthen the market placement of new and innovative products. These cooperative approaches often fail due to resource constraints, capacities, instruments and funding. However, there are more than 2,000 Clusters in the European Union covering all sectors and capable of producing a cross-sectoral framework, as well as clusters and related networks in the southern Mediterranean countries, constituting a great potential for clustering transnational (European Commission, 2014).

The ClusDevMed Cluster Development Project aims to create the conditions for strengthening existing clusters in the Mediterranean region, with the support of other EU expertise and policies. One of its aims is to bridge the gap between different actors with the same goals, and find a way to create a common approach to finding a solution to the "food / water / energy" nexus.

2. Clusters in Morocco: state of art

Morocco has embarked on a very ambitious investment program: The investment planned for the major sectors amounts to 5.6 billion euros for the period from 2008 to 2020. However, Djeflat (2012) considers that Morocco's development prospects and the success of socio-economic changes depend on the conditions of socialization and development of the younger generation. As a result, the implementation of a strong public policy for young people regardless of their region, social and material status, gender, education and the nature of their activity has become a pressing necessity. The challenge of this communication is the development of appropriate public policies for the development of innovation in Morocco.

2.1. History of Clusters in Morocco

In Morocco, the first analyses on clusters date back to the beginning of the 2000s. They are carried out by the Directorate of Spatial Planning (Ministerial Department of Habitat), which is responsible for the National Spatial Planning Scheme. Conducted by academics, statistical work and field surveys on Local Productive Systems or LPS have identified about fifty agglomerations of specialized institutions accounting 35% of Moroccan manufacturing employment (Paulette 2014). In this mapping, some activity sectors dominate. In the industrial sector, we find textile-clothing (Tangier, Casablanca, Guercif and Taza), mechanical and electrical subcontracting (Casablanca) and information and communication technologies (Casablanca). In the region of Fez, it is the leather sector and the brassware that dominates, while it is tourism in the Ziz Valley (Courlet 2015; Bouayad, Eddelani 2008). A study conducted by the Department of Studies and Financial Forecasts (DEPF) of the Ministry of the Economy and Finance, converged on the same observation, namely a high concentration of industrial employment in labor-intensive industries such as the clothing and fur industry (32%) and the food industry (16%) (Moroccan Ministry of finance, 2009).

Shortly after the initiative of the Directorate of Regional Planning, the Ministry of Industry, Trade and New Technologies (MCINET) embarked on the path of a policy oriented towards the emergence and support for innovative clusters with high technological potential in the industrial and technological sectors. Such a policy in favor of clusters is part of a strategic approach by the Moroccan authorities to support the dynamism of productive sectors for which plans have been adopted: Pact for Industrial Emergence, Green Morocco Plan for agriculture, Blue Plan for tourism, Halieutis Plan for Seafood, Solar Plan, Wind Plan....

Adopted in 2006, the Emergence Pact sets the strategic objectives of the country's industrial policy by targeting "the key sectors for which Morocco have competitive advantages and which represented 70% of industrial growth until 2015". The Industrial Emergence Pact also provided for the creation of sector-based Integrated Industrial Platforms (2IP). Two of them are intended to accommodate automotive companies and one for the aviation industry. Projects to open training centers (four institutes of the automotive trades, an institute of aeronautics

trades) were also intended to promote the development of these industrial sectors. At the same time, support schemes for entrepreneurship and innovation have been decided to encourage private initiative.

Launched in 2009, the Innovation Strategy called the "Morocco Innovation Initiative" complements the Emergence Pact. Its medium-term objective is to "position Morocco in the club of technology- producing countries, to allow the emergence of a high value-added economy but also to strengthen the image of Morocco at the international level and its attractiveness for investments. In the longer term, it is a question of preparing growth relays that would become vital for the national economy ". This strategy is accompanied by quantified objectives: the production of 1000 Moroccan patents and the creation of 200 innovative start-ups by 2014. The promotion of clusters corresponds to one of these main projects.

In April 2014, a new strategy was launched, the Industrial Acceleration Strategy for the 2014-2020 period, aimed at the emergence of efficient ecosystems. Its objective is to "boost" high-performance ecosystems in order to form complete value chains in Morocco.

Since COP 22 (Conference for Climate Change in 2016) the notion of the cluster has become more common in Morocco. Several organizations have been created to promote some sectors and to change the economic and industrial situation of the country. These clusters act on different axis: numeric, environment, industrial and social. Several incubated projects follow the strategy of the different clusters (mobile application, E-learning ...)

2.2. Different clusters in Morocco

Being an emerging country, Morocco is trying to attract large contractors to outsource allowing growth for the country. As a result, it was necessary to strengthen the industry / training link and stimulate inter-firm cooperation in innovation for a certain attractiveness and competitiveness. Several clusters were created.

The following table 1 lists the most recognized Moroccan clusters in order of seniority (MCINET, 2019).

Table 1. Moroccan clusters

Cluster Name	Localisation	Release date	Sectors	Status and Financing
AHP	Agadir	2009	Halieutics resources	Public
MNC	Casablanca	2011	ICT- Information and Communication Technologies.	State subsidies during the first 3 years, then self-financing obligation
CE3M	Mohammedia	2011	Electronics-Mechatronics	State subsidies during the first 3 years, then self-financing obligation
MENARA	Marrakech	2012	Agribusiness - Cosmetics	Association created with state funding for the first 3 years, then self-financing obligation
EMC	Casablanca	2013	Renewable energy and environmental services	Non-profit organization
C2TM	Casablanca	2013	Textile- Clothing	Non-profit organization
MDC	Casablanca	2014	Textile- Clothing	Non-profit organization

CISE	Casablanca	2014	Environmental Services	State subsidies during the first 3 years, then self-financing obligation
Solar Cluster	Casablanca	2015	Energie renouvelable et services environnementaux	Launched by masen, through the financing of 5 innovative projects
AgrInnov Cluster	Meknes	2016	Agrobusiness	MedZ in partnership with the Ministry of Agriculture
CHTC	Casablanca	2016	Textile	Ministry of Commerce and Industry and membership fees about 10% of the budget funding.

Source: formalized with secondary data collected on the clusters' websites

➤ Haliopolis Park

The AHP cluster was designed to support the development of companies operating in the fisheries sector through the promotion of joint actions to increase their performance in national and international markets, through research and innovation.

Agadir Haliopole is a cluster and a competitiveness cluster serving the fishing sector and the seafood processing industry. It has been created to foster the development of in-depth cooperation between fishermen, industries, laboratories, research institutions and training on operational objectives allowing players to compete in the global market and respond to changes in the sector (Agadir-Haliopole, 2019).

➤ MNC-Cluster

Morocco Numeric Cluster is a public / private mixed governance structure comprising several actors: State, Large companies, SMEs, education and research operators and aid and financing organizations with the ultimate goal of bringing innovative projects to the fore. And with high added value in the 4 niches of ICT excellence of the Cluster namely: Mobile services, security, electronic banking, numeric rights, multimedia and software packages (MNC, 2019).

➤ CE3M-Cluster

The Electronic, Microelectronic and Mechatronic Cluster of Morocco animate and structure a major area of innovation and specialized skills in Electronics, Microelectronics and Mechatronics. The collaborative projects of this cluster are involved in the creation and production of products and services that can stand out at the national and international levels, and meet the innovation needs of SMEs and Major Moroccan and foreign clients. This Cluster also develops industry-research-training partnerships, nationally and internationally, in the Electronics, Microelectronics, Railways, Aeronautics, Automotive, Medical, Energy and all integrating electronics industries sectors.

The objectives of the CE3M are to promote innovation, strengthen the Moroccan industrial potential in the Electronics sector, create the appropriate environment for the emergence of high value-added activities by bringing together the various actors around structuring projects (Universities, Laboratories, technical centers, major contractors, SMEs / SMIs, institutions ...) (CE3M, 2019).

➤ MENARA-Cluster

The MENARA cluster "Marrakesh Exclusivity Network for Advanced Research in Art's living" is a Moroccan association specialized in the agri-food and luxury cosmetics industries.

Its ambition is to enable it to increase its competitiveness and seize opportunities for development of international markets by focusing on innovation and the development and visibility of the Moroccan agri-food and cosmetics industry on an international scale (MENARA-Cluster, 2019).

➤ **EMC-Cluster**

Energy Efficiency of Building Materials is the first cluster in Morocco on the theme of energy performance in buildings. It is a non-profit association that was founded in 2013. It is supported by the Ministry of Industry, Trade, Investment and Numeric Economy (MICIEN).

A program contract was signed between the MICIEN and the EMC Cluster in October 2014, committing the cluster to carry out an annual action plan and respond to certain indicators.

The EMC Cluster has set itself the goal of pooling skills in the field of energy efficiency of building materials, notably to: optimize the energy consumption of companies specializing in the building materials industry, improve the competitiveness of the building materials industry building materials industry by providing innovative solutions in terms of energy efficiency and promoting collaboration between companies in the building materials industry (EMC-Cluster, 2019).

➤ **C2TM-Cluster**

The Cluster of Moroccan Technical Textiles was created in 2013. Founding members include companies, public and private institutions as well as educational and research institutions. The main purpose of the Cluster is to position the Moroccan companies' offer in high-value technical textile sectors, and to stimulate innovative collaborative projects in this field.

Among the axis selected: Improving the competitiveness of member companies through innovative products with high added value in the technical textile sectors, capturing a share of the internal market and gradually moving towards exports (C2TM-Cluster, 2019).

➤ **MDC-Cluster**

The Moroccan Denim Cluster (MDC) is the result of collaboration between the Moroccan Association of Textile and Clothing Industries (AMITH), and the Ministry of Industry, Trade, Investment and Industry and also Numeric Economy (MICIEN).

The MDC is a non-profit association, which brings together a large number of companies and organizations whose activity is linked to the sportswear and denim sector, including weavers, clothing manufacturers, dishwashers and accessories manufacturers, training institutions for textile trades in Morocco (School of Textile and Clothing Industries / Casa ModaAcademy), the textile and clothing technical center (CTTH) and promotional organizations (MOROCCO EXPORT) (MDC-Cluster, 2019)

➤ **CISE- Cluster**

The Industrial Cluster for Environmental Services Morocco is a group of companies and public institutions, higher education and research with activities aimed at finding alternatives to polluting production processes. It was created in 2014.

CISE Morocco is part of a context where the industrial sector of environmental services meets a clear rise. Today there is a clear need to prevent and eliminate industrial pollution, but also to conduct an optimized management of the stock of natural resources. It is a real challenge for companies that would allow the development of new production materials with, by extension, the creation of new markets and green enterprises (CISE-Cluster, 2019).

➤ **Solar Cluster**

As an association of actors in the solar sector, the Solar Cluster is an innovative platform that works to develop a competitive solar industrial sector, in line with the objectives of the NOOR Solar Plan. Its objective is to contribute to capacity building and development of industrial skills in the fields of solar and green technologies.

Since its launch in 2014, the Solar Cluster has contributed to the creation of synergies between public and private actors, entrepreneurs and researchers, with the aim of fostering the emergence of a competitive solar industrial sector in Morocco, particularly through the development of skills and strengthening the industrial capacity of Moroccan clean technology players (SolarCluster, 2019).

➤ AgrInnov-Cluster

The AgrInnov Cluster is an association that brings together and animates a network of economic actors, institutions and research and training centers, in the biotechnology and agro-resource processing and non-food processing sector.

This heterogeneity of actors has been evolving since 2015 within the framework of a vision resolutely focused on innovation development, and creation of collaborative projects with strong development potential in the agribusiness sector.

AgrInnov identifies expectations, identifies good practices, coordinates actors and pools resources to enable the deployment of innovative projects and the provision of concrete solutions for the performance and competitiveness of the agribusiness sector, at national and international level.

Its ambition is to give the Moroccan product a label of excellence emanating from its originality and its benefits, to improve the competitive positioning of its members, by allowing them to develop, and to conquer international market shares in their fields (Agrinnov, 2019).

➤ CHTC-cluster

The Casablanca Home Textile Cluster was created in 2016. It brings together 120 companies representing 70% of the national production of Home Textiles for an annual turnover of more than 3 billion dirhams and employing 22,000 people. The cluster is supported by the European Union, the Italian Agency for Development Cooperation, the Union for the Mediterranean and the United Nations Industrial Development Organization (UNIDO). On the Moroccan side, the cluster is supported by powerful companies, including AMITH, public institutions (Morocco SME, Morocco Export) and research educational institutions (ESITH ...) (Tazi N., 2019).

Moroccan clusters are located in different regions as shown in the following map:

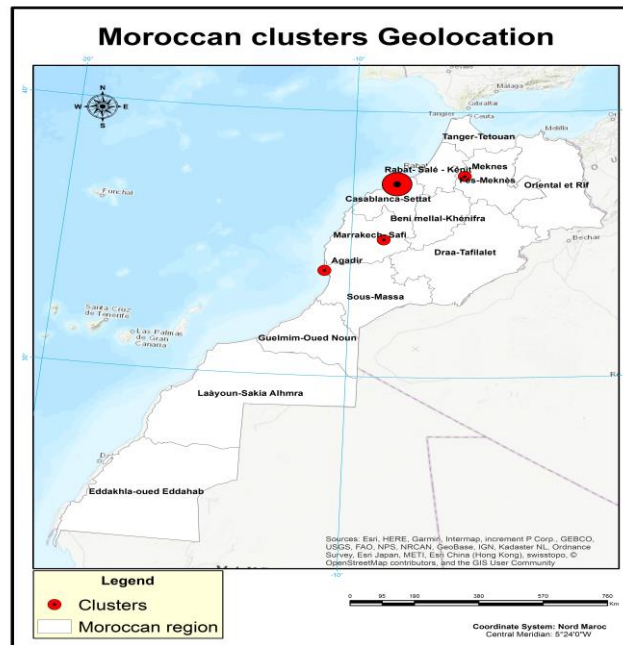


Fig. 2. Moroccan Cluster Geolocation

3. First case study: Maroc Numeric Cluster

The "Maroc Numeric 2013" strategy (MN2013), adopted by the Moroccan government in 2008, pursued some of the objectives set by the MN2013 and gave the growing importance of the Information Technology (IT) sector. It represented 7% of GDP, 25% of growth and 60% of employment. This strategy focused on extending the use of information and communication technologies (ICT) by the public, government and companies from 2008 to 2013 through an investment of 5.2 billion DH. The objective in terms of human capital was to reach 30000 profiles trained in IT and 3000 profiles trained in offshoring (IT) as part of the emergency plan until 2013 (MNC, 2019).

The MN2013 strategy was structured around three strategic priorities:

- Make high-speed Internet available to citizens;
- Bringing administration closer to the needs of the user through an innovative e-government programme;
- Encourage the computerisation of SMEs (Small and medium-sized Enterprises) and develop the sector by providing support to local actors.

MNC sets out five major agreements:

- Develop the cluster and its ecosystem;
- Develop innovative projects;
- Mobilize the TIC sector skills better;
- Facilitate access to the Moroccan market for innovation;
- Connect Moroccan innovation to over the world.

It also sets out four strategic programmes, including:

- Axis 1: Social transformation;
- Axis 2: Implementation of user-oriented public services;
- Axis 3: Computerization in small and medium enterprises (SME);
- Axis 4: Development of the IT industry.

Futhermore; it includes two accompanying measures: human capital development and Numeric confidence. The financial resources allocated in this strategy are about 5.19 billion DH. The budgets for axis 1: "Social transformation" and axis 2: "User-oriented public services" represent almost 83% of the overall budget.

3.1. Weaknesses and limitations of the MNC cluster

The Court of Auditors carried out an evaluation of the MN2013 strategy in 2014 (Benbrahim 2019). It thus examined the progress review, and evaluated the modes of its governance, its management and assessed the achievement of the strategy's objectives through the analysis of its indicators by comparing them with international ICT indicators. This resulted to the gaps and dysfunctions in the identification of the ideal strategy supposed to take Morocco out of numeric weakening. Rarely has a national strategy been so criticized.

The financial package was limited to determining the overall amount allocated to each of the 4 axis without presenting the funding sources. No budget has been set aside for the implementation of the first accompanying measure "human capital". The national information and numeric economy technologies Council (CNTI) has not been established. There is a general delay in the implementation of all actions and projects planned. The progress report; as at 30 June 2013; of the 4 axis and 2 accompanying measures of MN2013 shows that the latter is lagging behind in the implementation of all the actions and projects planned.

Indeed, only 11% of the actions programmed for the first axis have been achieved. The equipment projects for teachers and students in engineering schools and universities, namely Nafida and Injaz, have been successfully implemented. However, the equipment in primary, middle and high schools (GENIE Plan) has been delayed with a production rate below 71% in multimedia suitcases (VMM) and 24% in multimedia room equipment. Satellite schools with almost 1 million pupils (nearly 13451 in total) remain excluded from GENIE's scope of action. In addition, 20% of the initial projects were cancelled or have never started. This is the case for the implementation

of a University information system. This is the case of the project to promote low-cost equipment and the GENI-SUP project to set up an information system in Universities. The strategy has, however, gained points in Internet penetration in homes and its democratization. The rates have thus increased from 14% to 39% between 2008 and 2012. However, it maintained significant disparities between urban (51%) and rural (16%) (Court Of Auditors, 2014).

For the second axis, the progress report on the 69 projects envisaged at E-Gov level shows that only 36% of the projects were operational and 3% were in progress, while 38% of the programmed projects were late or problematic, while 22% did not start. Of the 13 projects identified as "Must have" priorities by the strategy, only the electronic certification project has been implemented. The "e-consulat" project was in progress. Of the 11 overdue projects, the local authorities' information system had not yet been launched. E-Gov services and projects carried out reached 42 out of the 89 planned.

The 3rd axis of the "MN2013" plan was divided into 9 actions. The assessment of their implementation shows that only two of the planned actions were carried out (22%), five were in progress (56%), one action was blocked (Rawaj TI), while the training action for correspondents and accountants was not achieved. A total of 295 companies out of the 3000 targeted companies (10% of the objective) benefited from "Moussanada TI" to equip themselves with professional information systems. With regard to the "Infatih" programme, 3040 SME managers obtained the Numeric licence, compared with the target of 10,000 beneficiaries (30%).

For the implementation of the fourth axis, 14 actions were planned and divided into 15 projects. The results of their achievements show that only 4 actions (27%) were carried out, 9 were in progress (60%), while two actions did not start. The main actions implemented are: the Moroccan Innovation Centre, Maroc Numeric Fund, Technopark Casa and Cluster TI. This strategy envisaged 5 actions of human capital measurement, three of which have not started yet, that are: The implementation of a mechanism to manage training plans; the development of PPP (Public, Private, and Partnership) training initiatives and the improvement of the employability of second cycle university graduates. Of the five indicators set for this axis, only one was monitored. This is the turnover of IT offshoring which has increased from 0.76 billion DH in 2008 to almost 2 billion DH in 2012 but still remains far from the 6 billion DH targeted. In terms of the "human capital" support axis, 3000 IT offshoring profiles were created as part of the emergency operation, but information is lacking to assess the progress of the training of another 30,000 profiles that the strategy has defined as needs of the IT sector.

The MN2013 strategy has been defined as priorities, initiatives and actions. However, it has not been complemented by sectoral strategies defining the detailed content of projects and actions as well as the processes for achieving the established objectives. Similarly, and despite its importance; the accompanying measure relating to "Human Capital" has not benefited from the development of a specific strategy detailing its content and the process of implementation of its various actions as well as the definition of target populations.

No prioritisation between the different actions and projects was observed. However, such an approach is necessary to ensure coherence and synchronization in their implementation. This is the case of the "GENIE-Sup" programme, which has been delayed, compared to the time-limited "Nafid@" and "INJAZ" programmes and has only benefited to a limited number of teachers and students.

Some strategic and structuring projects for the administration and users could not be implemented due to the unclear vision for implementation. The case of projects relating to the unique identifier of citizens and the unique identifier of companies was mentioned.

3.2. Strategy proposed for the period 2015-2020

After the construction period (2011-2014), a development and acceleration phase (2015-2020) has been assigned to the MNC. The table 2 below presents the observations made in 2014 and the discussions held to achieve the fixed objectives for the two periods:

Table 2. MNC Strategic Plan in 2015-2020

	2011-2014 Report	2015-2020 Reflections
Projects	Personalized support but difficult to maintain due to the increase in the number of projects. Number of supported projects to be developed in relation to the cluster's ambition	What added value does the MNC project bring to the Moroccan ecosystem compared to other innovation promotion organizations?
Networking	Complex organization and logistics for each new event. Complexity in establishing a common thread over time to which initiatives can be linked.	How can MNC events be made more effective and members more involved in the animation?
Formations	Significant workload for a result that is now uncertain. Audience difficult to gather in sufficient number to make the sessions attractive.	Is training facilitation a legitimate and priority added value for MNC?
Governance	Some structuring governance topics: thematic focus, partnership strategy and international presence	How can MNC's organization be optimized to better meet the fixed strategic objectives?

The MNC's new strategic plan (2015-2020) aims to meet the challenges of the digital innovation ecosystem in the following fields:

- To be based on all categories of companies VSE (Very Small Enterprises), SMEs, and large Accounts, which support Moroccan innovation;
- Be inspired by the development models of other relevant partner clusters;
- To support Morocco's digital development priorities;
- To allow Moroccan R&D (Moroccan association for research and development) to create value through uses;
- To capitalize on the expertise of the MNC ecosystem.

The Ministry (MCINET) defines the expectations towards the cluster which must participate in the digital development in Morocco because information technologies are an important mean for the country development.

The 2020 challenges are based on the following axis:

- To spread the culture of innovation throughout the ecosystem in order to contribute to the development of the country;
- To bring out innovative projects in Morocco through the animation of ecosystem actors;
- To anchor Morocco's leadership in digital innovation in the African continent.

The professionalization of project support and networking are the priorities of the 2020 strategy. To achieve it, it is necessary to focus on market trends and innovation in use through focused thematic commissions, industrialize project support and set up an innovation accelerator as well as an active collaboration between principals and innovative companies.

The new strategic plan aims to meet the challenges of the digital innovation ecosystem, which is focused on 4 thematic areas and 3 areas of added value. The following table 3 shows the MNC structure:

Table 3. Thematic poles and axis of the MNC

		Axis de travail		
		Projects	Networking and events	Monitoring and knowledge
Thematic Poles	Digital GOV pole	Smart cities, citizens services (health, justice, agriculture...), Open data, Cartography...		
	Mobility pole	Mobile services & applications, connected objects...		
	Trade & Media pole	E-commerce, Digital Marketing, payment methods, Electronic Press...		
	Infrastructure pole	Cloud, Security, Software Publishing, Fiber Plan, Big Data...		

Source: <http://www.marocnumericcluster.org>. Consulted on January 22, 2019

The MNC focuses on the following 3 commitments for 2020:

- Industrialize the support of innovative projects and promote collaboration and innovative entrepreneurship,
- Facilitate market access for Moroccan innovation and connect it to the international market,
- Produce knowledge to support and guide Morocco's digital transformation.

The following figure 2 illustrates the breakdown of the objectives of the 2015-2020 acceleration plan for MNC in relation to the launch period.

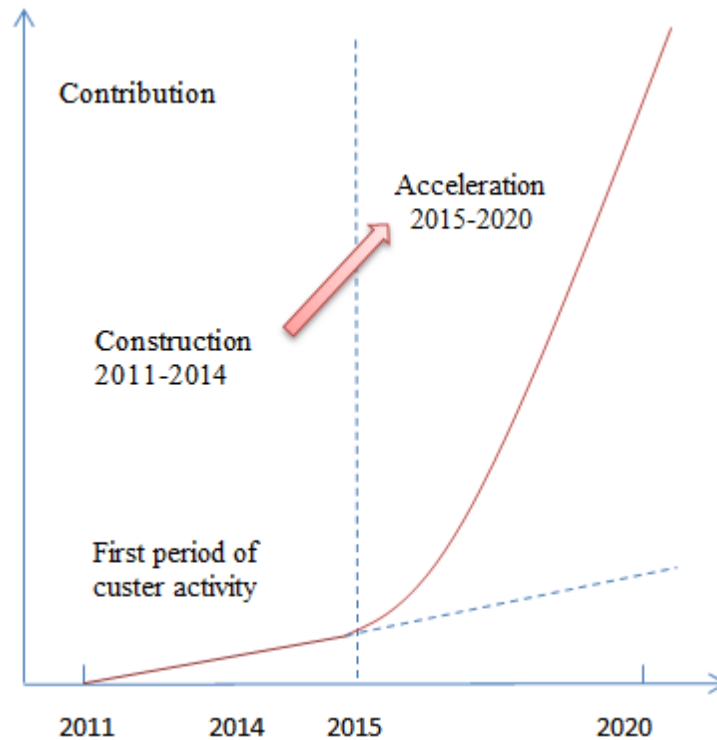


Fig. 2. Proposed acceleration scenario

Source: <http://www.marocnumericcluster.org> consulted on January 22, 2019

4. Overview of the Italian Clusters

Italy's production system is characterised by the predominance of micro and small firms. However, looking at the production system of Italy only through the lens of business size classes can be misleading because it overlooks the key role of inter-firm collaboration. Industrial clusters are the most notable example of business collaboration. Local clusters are a widespread phenomenon in Italy, especially in the centre and north of the country. Since the 1970s, they have frequently been cited as success stories in the academic debate and in public policy practices (e.g. Piore, Sabel 1984; OECD 2007). Clusters, also known as industrial districts (*distretti industriali*), are local concentrations of SMEs that adopt different specialisations within the various production phases of a particular industry. One of the features associated with their success has been intensive interactions among their constituent SMEs in areas including supply, marketing, innovation and labour use, supported by shared values and norms and local proximity".

In Italy, the most common definition of clusters, or more precisely industrial districts, is provided by the National Statistical Office, ISTAT (Italian statistical office). This classifies a local labour market area as a cluster for purposes of national policy support if it satisfies three requirements: there should be a higher percentage of employees in manufacturing than workers in agriculture; there should be a specialisation in one particular manufacturing industry; and there should be a high concentration of workers in firms with less than 250 employees - all compared to the national average (ISTAT 1997). Regional governments may choose to adopt other definitions of a cluster for their own support programmes, and the two sets of definitions now co-exist. ISTAT currently identifies 156 clusters in the country, which tend to be concentrated in the economically-stronger regions: 42 are in the North East, 39 in the North West, 49 in the Centre, and 26 in the South. These clusters have been traditionally important contributors to Italy's international trade performance. In 2011, the exports of Italian cluster firms accounted for approximately 30% of total national manufacturing exports (Intesa Sanpaolo 2013). Some clusters hold significant shares of world markets, as for example Sassuolo with 27% of world exports in ceramic tiles, Prato with 4% of the textile world market, and Arezzo with 3.5% of world jewellery sales (Fortis, Carminati 2009). The main markets are in Europe, with Germany remaining the key destination. However, emerging economies, mainly China, Russia and Brazil, are increasingly important trade partners, absorbing 35% of the total cluster exports in 2012, compared to 26% in 2002 (Intesa Sanpaolo 2013).

The number of clusters has fallen somewhat since 1991, when some 199 clusters were counted. Some vanished because the number of local labour markets, which underlie the definition of clusters, was reduced by ISTAT in order to increase their size. Others have died out because they no longer met the ISTAT classification criteria. In Padua (mechanical industry) and Udine (furniture), the weight of local business services increased due to the growing importance of outsourcing from manufacturing firms to local service firms. These clusters no longer met the criteria of having a focus on manufacturing. In other clusters, the size of firms increased and thus the criterion of small firm predominance was no longer satisfied. Examples are Sassuolo (tiles) in Emilia Romagna, Florence (leather), Carrara and Pietrasanta (ornamental stones) in Tuscany, Castel Goffredo in Lombardy (tights), and Treviso in Veneto (textile and garments).

There has also been a more recent reduction in the number of firms, total employment and manufacturing employment in Italian clusters in the wake of the global economic crisis. From 2008 to 2010 the rate of growth in employment was -4.8% in industrial clusters and -3.2% in Italy as a whole, while for manufacturing employment the decrease was of -9.1% and -8.8% respectively.

4.1. The second case study: Lombardy Energy Cleantech Cluster (LE2C)

The Lombardy Energy Cleantech Cluster is the only energy and environmental production network officially recognised by the Region of Lombardy, whose traditions and skills are deeply rooted throughout the area. It is a cluster based on the MULTIPLE HELIX model (Peris-Ortiz, 2016), creating an "extended laboratory" where it is possible to develop projects across research, innovation and training. In addition to companies, the cluster encompasses entrepreneurial associations, universities, knowledge and research centres, specialist bodies, public administration and financial institutions. It is active in a wide range of international networks, including the Vanguard initiative, which focuses on advanced manufacturing for energy-related applications in extreme environments and the subject of bio-economy. It was also a founding member of the International Cleantech Network (ICN), a global network of Cleantech and Energy clusters (Cluster Collaboration, 2019)

The LE2C is the beating heart of Italian excellence in the energy sector, with over one hundred companies, generating €23bn and employing 31,000 people across the entire Region. It is Located in Lombardy Region, one of the "4 Motors for Europe" region; second region for Energy production. The cluster has collaborations between SMEs and large companies also intersectoral. It is also able to cover the entire supply chain for the conventional, waste to energy and biomass power plants. It has had a gold certification for its excellent cluster organization, as well as a relevant international presence that presents 70% of members export covering 98 countries.

LE2C MNC sets out five major agreements (Energy Cluster mission, 2019):

- *Promoting systemic action with the local area*

Through collective initiatives facilitating collaboration and the exchange of skills and expertise between companies, research centres and universities, the cluster boost research, innovation and technology transfer by identifying guidelines for research and development for all enterprises, as well as securing the associated funding.

- *Impacting regional policy*

It influences regional policy in order to promote the interests of its associates, interacting with the institutions and actors responsible for setting market regulations.

- *Providing support to companies*

The cluster supports the growth of SMEs, increases visibility of the entire industry in the market and sets up a "recognised" production system, ensuring high quality production based on a value chain approach.

- *Accelerating innovation*

It provides innovative systems, creates a well-structured network of relationships and information exchange in which companies can act as a single strong and united entity, combining competitiveness and cooperation.

- *Promoting internationalisation*

This Cluster supports internationalisation by monitoring markets and encouraging long-term partnerships and collaborations with companies and networks at the EU transnational and international levels.

5. Conclusions: Comparative study between MNC and LE2C

The project started with a mapping of all the companies enrolled in cluster organization to determine each role among the supply chain in the power generation field. The mapping methodology used, which was considered by other clusters/international actors as best practice, consisted in different steps:

- The choice of boundaries: First identify the productive system, then define the companies and the structure of the productive system and finally classifying them in a pyramid.
- The classification of the enterprises by market areas and commissions: classifying them in market areas of the cluster (for example Nuclear Power Plants, Renewable Energy, Hydraulic and Geothermal Power Plants, etc.)

- The organisation of the companies in working groups/commissions: space where common interests and needs of the enterprises are developed for the implementation of joint projects, thanks to the consistency in terms of clients, product and technologies.
- Subdivision of the market areas of the conventional power plant and waste-to-energy and biomass plant in different islands: services and products which characterise the different plants (boiler island, turbine, BOP, treatment and distribution island), in order to identify the joint potentials of the companies.

The final objective is to promote the single supplier to think less in terms of single components' cost and more in terms of finished product's cost. The result of this process is that now the companies can offer together a complete package to the clients, also on a turnkey basis.

For this reason we can say that the Energy Cluster is moving from a supply chain a value chain: the companies members, thanks to the sharing of knowledge, know – how and the Technology Integration fostered by the cluster, can offer an innovative offer characterised by more high quality in terms of technological components and less costs.

They become stronger and more competitive because:

- They operate in an organized network which facilitates communications throughout the entire chain in order to optimize services and final costs.
- They increment their skills thanks to the knowledge shared over the entire production process by uniting competitiveness and cooperation.
- They can exploit advantages deriving from relations with institutions, the world of research, centres of excellence and big clients.

The aim of this paper is to identify and characterize the approaches and strategies for the success of the LE2C with a view to applying them to the MNC cluster, for the success of its 2015-2020 strategy. We chose the MNC because it is considered to be a program that has institutionalized a digital approach in Morocco. The program experienced a rupture in its deployment and difficulties in governance and inter-administration coordination.

For the success of the new MNC 2015-2020 strategy, the cluster must take action to:

- Formalize the process of developing and adopting digital strategies,
- Ensure the mobilization of all stakeholders,
- Define precisely the terms of reference of digital strategy design studies and their deliverables and have them validated by a specialized committee.

It must therefore ensure the prioritisation of objectives and provide an adequate planning through the clear identification of the human and financial resources necessary for its implementation. The latter must constantly monitor Morocco's ICT indicators and its world ranking and work to improve them, particularly for strategic aspects directly related to the competitiveness of the national economy and the development of the information society. The MNC must support the growth of VSEs and SMEs in the market and also provide an innovative system. Finally, the cluster must ensure that the ministries and agencies responsible for implementing the strategies have adequate skills, especially in project management, to enable better control of turnaround times.

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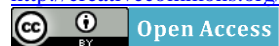
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ECONOMIC PHENOMENOLOGY: FUNDAMENTALS, PRINCIPLES AND DEFINITION¹

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Abstract. One of the tensions in economics, that has spanned the last few centuries, has undoubtedly been the dichotomy between dialectical materialism and idealism, which ended up laying the foundations between structure and superstructure, taking up the important philosophical questions faced in past centuries. This tension also ended up entering the economic visions between determinists/liberalists and interventionists, both engulfed by positivism and mathematical reason that has left out any transcendental dimension. With these assumptions, this article pretends to present the fundamentals of economic phenomenology, a branch of phenomenology that studies economics in the formation of its primary ideas in response to the economic positivism that left any transcendental dimension and questions out of the economics science, such as: what kind of society do we want? In this context, the principles of economic phenomenology take form from the relationship between subject (intention) and materiality, noesis and noema (Noesis is the intention, the subjective dimension. Noema, is the object thought in subjective terms), which always presupposes a concept, an idea that can be interpreted in everyday life. In this direction, it also proposes the presuppositions, the method, some concepts and theories of which economic phenomenology is composed. Among these, the concepts of ontological reason, Peoples rights demand, the meso-economy and the theory of wages in order to interpret the vision of life that underlies economic systems.

Keywords: economics; positivism; phenomenology; theory; ontology

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1. Introduction

With Marx, to which some critics, rightly or wrongly, attribute having “turned up side down” Hegel, one of the greatest idealists of Kantian imprint, the tension between structure and superstructure ended up entering the economic visions between determinists/liberalists and interventionists (for example, the dichotomy between classics and Keynesians which are the two main schools of economic thought in the world). We can say that the basic point on which they debated is what the Being of societies is, what is essence, structure, and what is not. In other words, even the assumptions of the evolution of the man in history, whether they are ideals (and defined by man in his conscience) or materialistic (that is, dependent on the material conditions to which man tends or contends). The ideals issues have been left out by economic positivism and today, in the era of economic financialization (defines as the growing relationship of financial values on the gross domestic product of a country or the world), are crushed by an economic vision that coincides with the accumulation of financial values (the 95% of financial values have not relation with goods and service) without relation with natural and human substance of society, as Polanyi called it (Polanyi, 2000 [1944]).

We can define economic positivism as the scientific current that studies economic systems “as they are”, based on mathematical rationality and on the maximization of individual interest; it leaves aside normative considerations such as “what kind of society do we want to build?”. In his book *Studies and Exercises in Formal Logic* (1884), the father of the famous Keynes, became famous for his expressive clarity and for rejection mathematical symbolism. In his most important classical work of economic methodology, *The Field and Method of Political Economy* (1891), he classifies existing approaches to economics as inductive or deductive. With this book, Keynes has opened new lands by integrating both approaches, defining the positive economy as the study of the economy “as it is” and the normative as “it must be”. Arguments also addressed by Milton Friedman, who later states that: “Positive economics is, in principle, independent of any ethical position or regulatory judgments. Taking up Keynes himself, he refers to “what it is” and not what “it should be”. Its task is to provide a system of generalizations that can be used to make correct predictions about the consequences of any change in circumstances. Its operation must be evaluated based on the accuracy, scope and compliance of the forecasts provided with the experience. In short, positive economics is, or can be, an “objective” science, in exactly the same sense as any of the physical sciences” (Friedman, 1953: 9).

It is in this scenario, that the economic phenomenology is placed, whose principles are set out in this article (Vigliarolo, 2019). This is the result of the attempt to insert the value of intentions into economic relations and to interpret them with materiality as ideas, concepts that determine a vision of life, redefining the relationship between structure and superstructure in terms of priorities and not dichotomous one. In other words, the structure is formed by the relationship between idealism and materialism, through what the “ego” defines in consciousness in the permanent interaction with “the everyday world” from which it feeds back (Schütz, 1962). All this is the objective of the economic phenomenology whose principles, in more details, have been exposed in the mentioned book after having dealt with a historical and theoretical analysis of the concept of economy from its birth to the present day. In this article, after having proposed the assumption and the definition, we can read some parts, such as the method, the principles and the theory of the of wages linked to the production of goods and services (Vigliarolo, 2017), with which the phenomenological approach interprets the economy in terms of the construction of potential identities (rights) of a society or community. In the cited text, they are examined in depth as these also depend on social and territorial vocations, by the ways in which we live, and also on the feelings and behaviors that underlie economic relations.

To this end, it contrasts utilitarian reason with ontological one and proposes that this last is constituted and interpreted in the meso-economy; this is a place of formation of the social conscience created for groups who define together potentially universal priorities that are not only belonging to a class consciousness, such as for example transversal values like the environment or the priority ideas that recall the necessities goods and services for the historical functional to the ontological construction of human life. Historical assets are those that identify a People and are functional to identity in the long term as opposed to those functional to the market, in the short term. In other words, we could also call them "goods subjectively considered part of the being of the world in objective terms", when they are recognized by the conscience as subjectively necessary to personal and community life, and therefore influence the historical trajectory of a community, a territory. Therefore, they are structural assets with high added value and, for these reasons, they are placed in an extreme diametrically opposed to the goods used to carry out the accumulation of capital or only commercial (used in the short term and short life). For example, a motorcycle that has a life of 20-30 years compared to the same motorcycle that has a life of only 3-5 years made only for a commercial value (Vigliarolo, 2019: pages 172 and foll.).

For this reason, it can be affirmed that economic phenomenology observes the construction of the ontological reason of Peoples and always refers to a demand for rights and not for consumption, this one is interpretable by progressive degrees of social consciousness, through the relationship between noesis and noema always present potentially in economic relations.

2. The assumptions of the economic phenomenology

The rights of men and women who live in a society, as phenomenological aspects of individual and social being, while on the one hand are something that are born (as a potential structure) with human beings, also depend on the conditions that are installed in the society and, first of all, in the economic system in order they can have their full realization. Without roads or means of transport, our right of movement would be limited. Without a home, our right to live protected from the weather and live in a house with our family would not exist. Without the production of artifacts, many phenomenological aspects of our way of being like sitting, sleeping in a bed, drinking in a glass, etc., would be limited and would affect our social rights. But still, without being able to go to school and receive an education from teachers, our right to education would also be limited. Without food, our primary right to life would not exist. And so, for many other aspects that can be added and that are part of what can be called "the ontological reason" of social life that emerges from the relationship with materiality, between noesis and noema, which is always a concept, an idea, a function that needs to be interpreted. All this implies that, if on the one hand we are born with an ontological dimension that we carry inside, it is pure power until it is implemented through the organization of daily life that involves the management of resources. Therefore, resource management implies the possibility of developing aspects of life that the "social conscience", manifest or latent, allows to understand as important or essential for our life (individual and communitarian). These dimensions can be called ontological priorities of social life in the economy that occur as a result of the effort of men who relate to each other, and which presupposes the use of the labor force that transforms reality and produces the conditions for living together. Therefore, the material dimension of life potentially contains a meaning attributed by men themselves according to their needs, on the one hand, and their subjective dimension (principles and values of reference), on the other, which are defined and objectified in reality (experience) and cannot be reduced only at a monetary benefit cost.

All this implies a dimension of consciousness which we will call "a priori". But this dimension of consciousness determines "concepts of human thought" objectified with the use of goods and services. These concepts can be simple or complex. For example, food satisfies the need to eat and, when it is objectified by experience, it is inscribed in the consciousness as an idea of eating that people deem necessary to carry out other human and social projects; similarly, when using a car, this contains both the idea of transport and the being that is transported; a

chair contains both the idea of sitting, resting, etc., and so on for other goods and services or intangible or relational goods (Donati Solci, 2011) such as training, study that represent the idea of learning, developing skills, laying the foundations for a future work, etc. All of this can be defined as the presupposition of economic phenomenology.

3. Definition

By the assumption just described, economic phenomenology can be defined as the branch of phenomenology that aims to study economics in the formation of its primary ideas, which contribute to the creation of a country's structure and vision of life, a society, starting from the pure consciousness that opens up to the world, through the relationship between noesis and noema. In this direction, economic phenomenology studies the coherence of economic systems with respect to these ideas considered as priorities in human consciousness that can be converted into social, and how these can represent the structures of an ontological reason that allows the implementation of what we call the being of the world.

For these reasons, it is proposed that the economy can be understood through a “demand of rights” and it presupposes an “ontological reason” that is determined and interpreted through “the subjective intention towards an object” (a good or service). This cannot be reduced only to a monetary value but to the social and human function that the goods and services determine, and it is interpretable with the language that expresses the concepts, the ideas. We also refer to Heidegger's conception according to which “the ontology is determined through the knowledge that man assumes after reflection on the structures of 'being', considered elements that give meaning to the world” (Heidegger, 2011 [1927]: 15) and he states the language is being's house (Heidegger, (2011 [1927])).

This “ontological reason” or “demand of rights” is determined subjectively in a stage defined as “mesoeconomia”, an intermediate stage between the micro and the macro economics, conformed to social groups that channel individuality (civil society, productive sectors, etc.), as will be explained later.

In this context, economic phenomenology proposes to observe social consciousness as a “set of social meanings” in the different degrees with which an economic action appears. These elements can only be recognized by “intersubjective knowledge” and for these reason they determine what we will call “the relational and constitutive rights of being”. Therefore, the “social conscience” determines, potentially, what we call “ontological relationship”, which is the human and social sense that is incorporated in the economy left out, as we said above, from economic positivism. In other words, ontological relationships provide the concrete dimensions of the elements that contain the priorities that animate the visions of life. Each relationship can have different priorities and not necessarily each one is interpreted in the same way. For these reasons, they may have general and particular characteristics. These ones are related to the noematic dimension and imply what we can define an economic aesthetic that is they change according to vocations, tastes, innovations, etc. A road carries within it a basic idea, that of walking. Asphalt is a secondary idea (a particular characteristic), as its coverage could be made with asphalt, concrete, stones or other material, depending on the needs or tastes; these are characteristics that define what we call economic aesthetics (Vigliarolo, 2019).

So, general ones are pure form; particulars are the modalities or the content of the general ones. For example, the idea of eating implies the ways in which it takes place, the different types of food; the right to move can take place in various ways (car, train, on foot, etc.); and so on. The coincidence between pure form and content or their mode of realization determines what we call an economic noumenon. It can be defined as the coincidence between the intentional subjective dimension and the content of economic action that expresses in itself an observable noematic dimension and referable to a potential dimension of being. He defines it as noumenon because it contains the ideal intelligible dimension but is determined by the sensitive dimension, thus it unites

materialism and idealism into ideas, real concepts that the economic system brings forward. For example, the idea of eating is real because without eating we can not live and we can experiment it in the reality, etc. for different ways of being, rights, which can be achieved in several ways, but these modes do not always implement what we really want. The system itself may not carry forward the intention and real ideas. When this happens then we are faced with an economic noumenon, that is the coincidence between a real idea a priori and the ways to achieve it in the experience, while the economic phenomenon is what appear and it needs of interpretation to understand if it is noumeno, a real socio-economics truth condition. So, the economic noumeno it is always referred to an interpretable ontological condition; it's what we want in the intention that is transformed into the ideas that we believe are exactly reflected in management, goods and services. We can also say that the dimension of consciousness is directly implemented and in this way idealism and materialism contribute to the definition of the same concept by feeding back. We cannot really assume the idea of eating without food, the idea of moving without roads, the idea of knowing without education or training, etc. (elements that can be considered necessary to allow everyone to be able to carry on their life project if they do not contradict each other). For these reasons, as mentioned in the introduction, the tension between materialism and idealism according to this approach is resolved in priority and not dichotomous terms. Furthermore, there are values, priorities, ideas that are transversal to all social classes and depend on the management of the system, such as the environment, or human rights (Vigliarolo, 2019). So, this is a “moments of socio-economic truth”, which contain an idea that is carried forward by the management of resources and the production of goods and services.

Thus, according to economic phenomenology, the assumptions of economic truth do not lie in mathematical rationality, but rather in human decisions (“ontological intentions that transform in ideas, concepts, values, ...”) and depend on the consciousness that is socialized and determines what is necessary for the life of the community. We can call this process as “economic socialization” and can be defined as the process that involves relating on the basis of values and priorities dictated by human visions that are incorporated into the economy in terms of production process and consumption.

In this direction, therefore, economic phenomenology is concerned with observing the economy in its ontological, and non-utilitarian, rationality, as a vision of life behind economic facts, through the priorities that are considered as such in the “conscience” and in their ways of implementation. For these reasons, an ontological reason must be observed in the impact that economic events have on the level of the rights of a community (condition of being) and, therefore, in the vision of life that animates the social life of all the observed relationships, up to human consciousness. This is called transcendental economic reduction, which can be a priori or a posteriori. As we will see in the next section where we expose the method.

4. The method

The observation is based on the subjective relationship that emerges from an intention that potentially contains an ontological dimension that eventually requires the formation of primary ideas that are inscribed in the individual consciousness and, when a social expectation is created, are considered “human priorities (this is what we call the “economic socialization process”). Therefore, it is a question of observing how, from individual intentions, conscience (even social intent) is built and animates an economic system, an ontological relationship, etc. So, we can ask ourselves: how to observe the dimension of the social conscience that animates an economic system resulting from individual actions? How to interpret the primary ideas of an economic system through the relationship with materiality?

Starting from these questions, we have the process that we call economics phenomenological reduction. It reduces the economy in ideas that derive from intentions and that subsequently model the relationships of a system. Therefore, we can affirm that the phenomenological reduction in economics occurs through the interpretation of

subjective meanings (which are the basis of the relationship between noesis and noema: in Heidegger terms, we can say the meaning of the projects of the man who living together) bringing them to their extreme consequences (also in terms of processes). So we can observe the rational subject and its potentially “universal” dimension inserted in the context in which he lives. That is, behind a relationship with materiality there is a set of characteristics that shape the rational subject that animates the social essence and determines the structure of the systems. As we have said, a house implies the idea of living under a roof; a car can represent the idea of moving, etc. They are ideas that define the essence of the subject which, in turn, defines the system. If all individuals want to have a home and move, the subjects are supposed to consider it as necessary and it determines a social conscience. In the measure in which it is constituted by the relations between subjects and the same materiality, it encourages economic relations to maintain these rights (we have an expectation). Economics phenomenological reduction, also assesses if the ideas can conflict, be against or not be completely consistent with the priorities of the initial rights mentioned. In other words, it is observed if the real intentions of systems and relationships can coexist (“having a roof” and “moving”) and how they depend on the processes and organization of the social life. The economy is reduced and interpreted, thus, to primary intentions that determine the primary ideas that animate the system. And this also serves to interpret the ethical principles or other factors that influence the social relations behind every economic process.

The reduction can be made a priori, simply by interpreting the idea that follows from the intention directly observed with the object. This is led to its extreme consequence in ideal terms; or a posteriori, analyzing in a time frame what the intention actually produces at the general level. The two dimensions (a priori and a posteriori) can be fed and, since it is impossible to reach the end of time, in the absence of stable or present data, ideas are brought to their extreme consequences subjectively. Therefore, a subjective interpretation of the intention (economic reduction) is determined with progressive degrees of objectivity and this is why it is stated that the economy is a social phenomenon and, as such, is not an exact science according to mathematical laws.

For example, capitalism has a phenomenological relationship of direct intention with profit or capital circulation, which in its extreme consequences does not allow us to understand what kind of social order is conformed as rights since the profit itself, as a noema. Because it is not linked to human priorities and social; it lacks a social conscience linked to something considered important; that is, it has not observable noematic content. Finally, the phenomenological reduction determines the human and social priorities as ideas of community life and it is what we call the world’s vision that the economy carries on through its production and management of material resources.

5. The general principles of economic phenomenology

After all these arguments, the general principles of economic phenomenology can be summarized in the following points:

- The intelligibility of an economic system is based on the existence of primary ideas that must be implemented in practice in order to objectivize (pure reason is transformed into practical reason) and permanently create those “answers or elements” to a need or a real vision.

- These ideas, when they are constructed in an intersubjective manner, define the “we” and generate the context where the individuality can act freely to develop the conditions that implement the priorities of life. For these reasons, relationships are animated by what is called “expectations” which can be positive or negative. That is, positive when the other hopes that everyone behaves with the same ratio that the system can carry out; negative when the other behaves in a contrary or different way to a vision of common life or pursuing only individual interests (which is the area of *crematistica*; from Greek, is the area defined by Aristoteles that pursuits personal interests of material richness).

- In this context, an economic system must always be considered holistically; this means that it must consider social, political, institutional, financial, productive and commercial parts. In order to work, these must be coordinate and oriented by a “social pact” (demand of rights) that outline the ontological reason.
- Politics and the State must guarantee the conditions of common life such as infrastructures, norms and avoid opportunist behavior that damages community life. This is necessary to allow the system to develop collectively and to guide and promote free individual initiative towards strategic sectors of social life as a single body.
- Only investments expand the system and can be of two types: capital and human knowledge and work (bearing in mind that time is always present in all the factors that are used). Capital investments derive from savings, but not all the savings invested go towards increasing the production related to the vision and the needs of life that can be directly understood. Part of saving can be invested to make money and this produces a loss of intelligibility of the system and in phenomenological terms does not necessarily generate a satisfaction of real needs (or identity).
- Savings can be private or public (of the State). Private savings are determined in families and enterprises and it is the one that most likely determines the growth of responses related to human needs. It has a direct intention with goods and services. We call this one genuine save and derives from the wages and productivity level of a country.
- Investments need the labor force: but without the “knowledge” embedded in the “human resources” a production of functional or historical quality goods is not generated.
- Only a minimal part of save must be used for accumulation purposes for purposes defined as necessary and strategic, or for unknown events or events that may occur.
- The necessary savings is the amount of resources needed to answer a foreseen or unexpected need in the future. It's strategic when it refers to the fact that there are strategic sectors that in the future can be the object of family investments such as education, health, tourism, etc.
- Investments can be interpreted in terms of vision of life if they are linked to aspects of real life. There is a minimum level of investment necessary to activate structural changes and this depends on the ability of countries to react to their situation of need or to crises. The ability to react depends on becoming aware of what is important for the people and their need to reach it. Therefore, a country, a region or any other territorial organization must have an investment plan linked to the priorities of social life. What we have seen is called “social function”, disappeared with the emergence of mercantilism (Vigliarolo, 2019).
- The meaning of a good is determined only through the interaction of the subject with the object. This, in turn, defines a concept, an idea that is written in the consciousness and determines the priorities of individual and community life. By determining these conditions, its monetary value cannot be defined only by the law of supply and demand (scarcity-quantity), but must have a relational value that varies according to its capacity to satisfy the conditions of private and community life.
- Each People has its strategic sectors related to the priorities and the socio-cultural and geographical-territorial conformation. These allow to generate comparative advantages (both for added value and for natural resources) and to feed other sectors.

6. Micro, macro and meso-economics

Economic micro-phenomenology observes and studies the ontological relationship with the materiality that is built locally through the direct relationship and the process of knowledge formation with the whole context. Economic macro-phenomenology, on the other hand, observes the ontological reason thanks to typed knowledge. It also observes how this is determined and implemented by macro-systems (national and international) so that aggregate demand of people's rights is implemented.

Economic phenomenology presupposes a third space that is intelligible in terms of social consciousness: the meso-economy. It is that part of the economy that is determined through the existence of “groups” that have, on the one hand an interpretable social intention and, on the other, an autonomous dimension with respect to the macro economy, because there is an interpretable social vision and that the system could not do it only with the deficit or other positivist variables.

In this context, the meso-phenomenology economy implies strategic sectors to which they are attributed a social meaning based on the function they perform; the set of values (social, environmental, etc.) that a country or a society must promote to limit individual interests and promote collective construction. This does not depend on class consciousness, otherwise the loss of the ontological reason of social life is generated. In this context, it deals with orienting the economy through strategic production steps that can define the development of a country or a society in a global manner. For these reasons it studies:

- the forms of sectorial participation and the creation of coordinated value chains so that the actors have a common level of awareness.
- The medium and long-term strategic sectors necessary to develop the aggregate demand for the rights of a company in order to maintain a coherence between the system and the ontological reason of a People.
- The capacity for strategic savings.
- The capacity of the workforce oriented to the development of these sectors.
- The social system (education, training, infrastructures, standards, sectoral financial interest rate, among others) necessary to guarantee instrumental goods and services essential for the development of strategic sectors.
- The strategic sectoral demand for goods and services that support only part of the global demand of rights.
- The general conditions for developing the productive advantages considered essential for life by the countries according to ontological priorities, including the skills of the workforce. All this can be observed with the strategic growth index (ICE):

ICE = value of goods and services related to strategic sectors
(including financial values and social and political institutions)

value of the total of goods and services
(including financial values and social and political institutions)

7. Theory of wages, equilibriums and aggregate demand of rights

As a lens for realizing phenomenological observation in economics we can use the theory called “centric wage or rights”.

Through this theory we interpret how the productive wages of goods and services are determined, considered them the heart of an economic system; this is done through the observation of the system as a whole, including human and territorial vocations, raw materials, training, institutions, etc., and how subjects orient their intentions in permanent investments towards goods and services that carry within them a vision of common life (which, as we have seen, are ideas, concepts).

According to this theory, it is envisaged that wages, obviously by degrees of specialization and labor force, must cover the set of rights deriving from goods and services defined at a meso-economic level, which means covering a “demand of rights” established in the “social pact” for a determined level of equilibrium and, at the same time, to always have a percentage of “strategic” savings that is transformed into investments and that each family subjectively decides to do to affirm or extend its ontological dimension. So it can be summarized as:

Wages + % savings / investments = production of goods and services functional to the rights defined at meso-economic level

In formula: $W + \% I = P$ meso-economic (W = wages; I = Investments; P = production).

Circular equilibrium situation (see Figure 1):

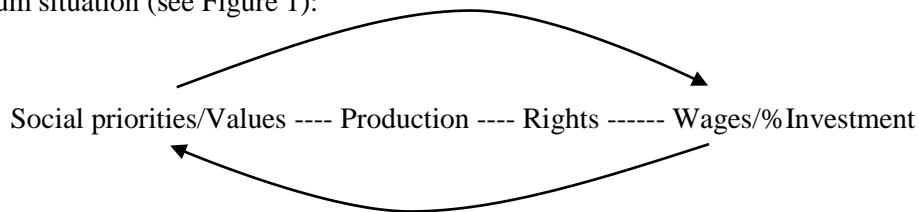


Figure 1. Circular equilibrium situation

The equilibrium is dynamic in that once established a base of rights we can incorporate others that are born or become established in society permanently, up to its defined stage of “development” (also in permanent evolution). Therefore, for each equilibrium an aggregate demand of rights is defined, defined as the set of rights related to each other necessary to develop the ontological reason of Peoples at a given moment. For example, the right to education can have an impact on the right to work, etc.

According to this theory, the percentage of savings foreseen in wages has a direct relationship with the growth rate of the country.

The latter in turn must be related to the tax of active interest of the financial system (cost of money) and prices as a phenotypic aspect of the values of the goods and services we have seen, must remain such as to allow the progressive implementation of growth stages and expansion of rights. This means that the percentage change with

the acquired power must remain stable otherwise the investments and the acquired rights are reduced (the salaries must be linked to the established rights).

If these aspects do not have a coherence between them, situations of imbalance are created where phenomena such as the growth of financial values without relation to the real economy, the fall in purchasing power that damages established rights, etc. can occur.

The system stabilizes when the quality of production grows in quantity (without exceeding real needs) and quality pluralistic production stabilizing the downward prices and allowing to increase the percentage of investment that is oriented towards new rights, or stabilizing the acquired ones, permanently. Graph of aggregate demand of rights for different levels of equilibrium is presented below (Figure 2).

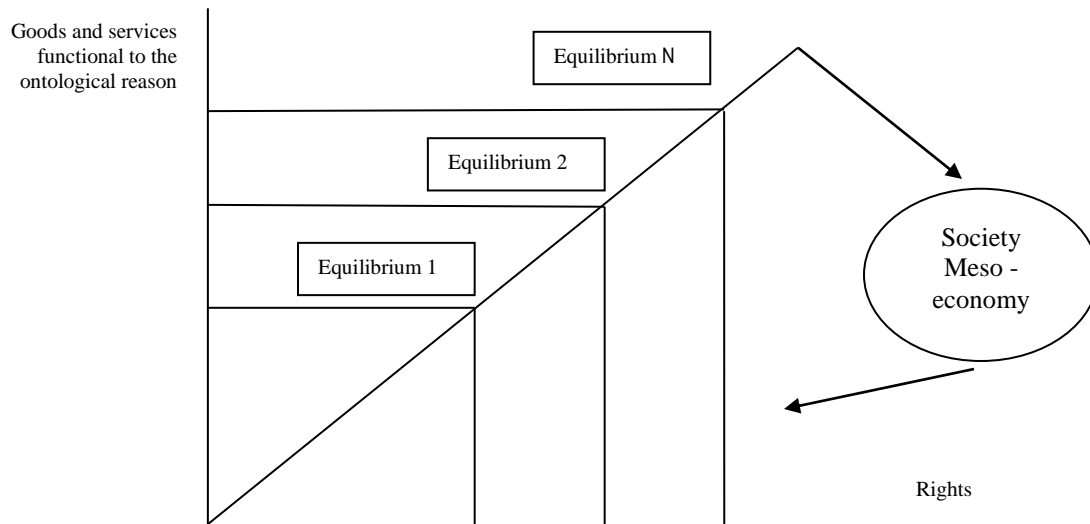


Figure 2. Graph of aggregate demand of rights for different levels of equilibrium

Conclusions

Economic relations are social relations and cannot be reduced only to monetary or material benefits, but they hide a potential ontological dimension that is interpreted and directed by the relationship with the materiality that defines a human identity in continuous construction. In this way, the demand and supply of goods must be read as a part, above all, of the construction of the social identity of a People. It involves the definition of ideas and a vision of the world that implicates ontological conditions of people in their community that are built in a relational way (and, therefore, cannot be measured only in individual terms). For these reasons, we speak of the demand of rights of Nations, and we propose to observe these relationships through a phenomenological approach because it permits to interpret it. Among the areas of application of this approach we can mention some such as the processes of development of Peoples in its various scales, from a territorial dimension to the regional, national or international one. In other word, we can affirm that we cannot understand an economic system without understand what is important for a society, Peoples or the whole Humanity in terms of social meaning and function. Otherwise it misses of an intelligible dimension.

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SECURING REGIONAL DEVELOPMENT*

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Abstract. Regional Development is linked to Sustainability, and also, Development is linked to Security, both nationally and globally. The expanded view of Security has opened the discussion of new technologies introduced non-traditional threats that become vulnerable to regional security and thereby to regional development. Five broad types of situations or premises that constitute a security in which threats overlap and interact, those new threats warrant new security paradigms that traditional international relations ignored so far. The purpose of this research is to analyze and study the impact of these new threats to security and how they affect regional development. Protection to the digital ecosystem and critical infrastructure from threats could be by implementing the security program of Governance, Risk, and Compliance (GRC), however, awareness, preparedness, and resilience of societies with the international community are as key preconditions of further secure and sustainable economic development and general well-being. Case studies of new technologies that threaten global societies economically and socially.

Keywords: Regional development; Critical Infrastructure; Cyber Security; Digital Ecosystem; Regional Development; SDGs (Sustainable Development Goals); New Technologies; STEM (Science, Technology, and Engineering, and Mathematics); Sustainable Development, Trans-state threats

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1. Introduction

In the context of new technologies and fast-changing environments due to globalization, trans-state threats become urgent issues to regional security and regional development. This research paper aims to overview major contemporary threats that affect regional development in one or another way. Authors seek to trigger discussion, which ultimately would allow finding efficient ways to prevent those threats or to mitigate their impact, at least.

The research is organized in the following way: at first, authors look at regional development and security concepts. Later interrelations between them are discussed. A separate part of the paper is devoted to threat caused by digitalization processes. The paper finishes with an analysis of concrete selected case studies, which help to blend theory and practice. Specifically, the following case studies are tackled: Stuxnet program against Iran's nuclear program development, WannaCry, and the trade war between China and the USA. The paper finishes with concluding insights.

2. Searching for regional development and security links

Regional development research is conducted having the aim to identify in-depth causes hindering development in particular regions, and finding ways to neutralize them in order the process of economic development was accelerated, and, as a consequence, the general level of living started to increase gradually.

The first connotation of regional development is economical. Differences in economic development can be measured using a wide range of indicators, e.g., by GDP per capita, patterns of income distribution across society, structure of economic sectors, availability of resources, unemployment, gender equality etc. There is a lot of attention to those questions in the scientific literature (e.g., Tvaronavičienė, Gatautis, 2017; Njaramba et al., 2018; Iorio et al., 2018; Tung, 2019 etc.) To conclude, here is almost unanimous agreement about the width of the regional development scope.

The security phenomenon as well as a wide array of contexts. We will try to systemize at least some distinguished aspects below.

At first, let us tackle environmental and ecological security, which is related to the depletion of scarce resources leading to climate change. There is a lot of attention to this broad aspect of security, which emerges as food security (e.g., Faridi, Sulphrey, 2019; Tireuov et al., 2018), water security (Moumen et al., 2019; Muniz et al., 2019); deforestation (Cherchyk et al., 2019), energy security (e.g., Rogalev et al.)

The second broad security aspect is related to human, community, and societal security focuses on widespread issues such as structural and cultural violence, notably gender violence, sexual and public health botheration, forced migrations, and economic and resource injustice.

The third security aspect is state-centered national defense, which focuses on traditional state rivalry, military war, the geostrategic Great Game, and new areas such as natural resources (water and oil) and dark operations in cyberspace.

We would distinguish the fourth, hybrid, mixed forms of insecurity, which combine state military dimensions with forms of dislocation (food and water crises, trafficking, radical ideologies), disruptive groups (organized crime, gangs, terrorists, drug cartels, pirates, anti-democratic forces) and technologies affecting civil societies.

Let us recall sustainable development facets now.

Elements or pillars of Sustainable Development (Environment, Society, and Economy) interact with each other to develop the required sustainable development. Attending one of these at the expense of the others is bound to lead to unsustainable dynamics and outcomes (Khagram et al. 2003).

In 2015, the United Nations promoted the seventeen Sustainable Development Goals (SDGs). Intersectional linkages among these objectives are especially revelatory of the forces structuring non-military security. Each goal has its own set of measurable indicators. The goals apply to all nations, with no distinctions between developed and developing countries. Though extremely lofty goals, UN agencies, and other organizations continue to promote these universal goals globally. The SDGs replaced the eight Millennium Development Goals that unfolded from 2000 to 2015. (“Case Studies | 2015 UN-Water Annual International Zaragoza Conference. Water and Sustainable Development: From Vision to Action. 15-17 January 2015,” n.d.)

As Khagram et al. “the brilliance of ‘sustainability’ lies in its ability to provide ‘space’ for serious attempts to deal with the real, dynamic, and complex relationships among societies, economies and natural environments, as well as between past, present and future. Within this broad space, a range of perspectives that differ on what is to be sustained, what is to be developed, the linkage between such differing views, and the extent of the future envisioned have emerged. What is to be sustained? The most common answer to this question is ‘life support systems,’ where the life to be supported is first and foremost human life. What is to be developed? As a rule, when development is discussed in the context of sustainability, The Economy is prioritized. Growth in production is seen as providing opportunities for employment and consumption.

What are the links between? Fundamentally all visions of sustainable development are characterized by the joint consideration of what is to be sustained and what is to be developed. These goals were seen as equal in importance and linked together” (Khagram et al. 2003).

In order to make the policies of regional development successful, we have to be able to identify the reasons for regional disparities and social problems which could be from economic, social-economic, social-cultural, environmental along with the concerned people in each project, because the indicators of regional performance that are based on GDP alone, consequently fail to account for broader questions about the distribution of resources in terms of social well-being, for example considering the question of ‘what kind of regional development and for whom’ (Pike et al., n.d.) or, alternatively, what kind of development model is inclusive and economically and socially sustainable.

It is obvious that there is nexus between Security and Sustainable Development facets, both nationally and globally. According to Stewart, three types of connection could be distinguished:

1. The immediate impact of security/insecurity on well-being and, consequently, development achievements, i.e., security’s role as part of our objectives (Stewart, n.d.-a).
2. The way that insecurity affects (non-security) elements of development and economic growth, or the security instrumental role (Stewart, n.d.-a).
3. The way development affects security or the development instrumental role (Stewart, n.d.-a).

The security policies contribute to development policies to enhance security; also, the development policies contribute to security policies to enhance development. There are connections between security and development through policies. However, in an increasingly interconnected and complex world, security and development are indistinguishably linked, especially in the least-developed countries (Stewart, n.d.-b).

For over 20 years, development has been connected to security through the concept of human security. The relationship can be complex, lagging development can lead to grievance, and then conflict that can threaten development (Security and development | SIPRI,” n.d.).

For example, the movement of manpower may reduce the production of exports, thereby reducing foreign exchange earnings, import potential, and consequently further constraining output, leading to a decline in employment and earnings (Stewart, n.d.-b). Conversely, with high levels of security, leading to development and development, further promoting security (Stewart, n.d.-b). But unfortunately, this cycle can be broken because it is easy to have relatively high levels of security without necessarily experiencing economic growth, or to have high levels of security and economic growth, but not inclusive growth so the potential for conflict remains (Chandler, 2007).

3. Expanded views of security

The classical view of security was described by Barry Buzan, who claimed that the concept of security is, in itself, a more versatile, penetrating and useful way to approach the study of international relations than either power or peace (Buzan, Hansen, 2009).

However, threats to security can have socio-economic roots, including races over natural resources, spillover effects of environmental degradation, economic and social disparities, economic and political migration, and natural disasters, among others (Paleri, 2008).

Beyond traditionally recognized issues of threats to state and national territory, beyond sovereignty, territorial disputes, geopolitics, and military-diplomatic affairs, there are many security threats that have trans-national nature since their violence affecting many parts of the world (Korab-Karpowicz, 2017).

These trans-state threats are recent, and blurred by all sorts of flows and forces, from environmental dynamics to technological development, from human and animal migrations to microorganism infection, from terrorist groups to financial flows, and from climate change to the global mass culture due to globalization that has both an integrative and fragmenting process, complex and asymmetrical interdependence, which increase the borderless of international relations, thereby shaping and transforming security issues in new and unexpected ways. (Korab-Karpowicz, 2017).

Security theorists interpret security in different ways as follows. Traditionalists purport security to inter-state military-political dangers for the sake of intellectual and pragmatic clarity. Wideners extend security concepts to inter-state threats from social, economic, and environmental issues. Deepeners integrate all sources since insecurity comes from and affects all: states, individuals, private entities, communities and the environment (Martinovsky, 2011; Prause et al., 2019).

Forms of threats that don't have the state are trans-state (migrations, technological challenges, global crime, and terrorism), sub-state (gender issues, urban misgovernance), and nonhuman (ecosystem dynamics, micro-pathogens).

The following typology clarifies the five broad types of situations or premises that constitute a security in which threats overlap and interact.

First, traditional state-centered threats: examples include nuclear proliferation in India, Iran, and North Korea; espionage among leading nations; territorial challenges in Crimea, the Middle East, and the East China Sea; and regional tensions (Koreas, India–Pakistan, and Iran–Saudi Arabia).

Second, New threats interact and combined with old threats creating interlocking problems. For instance, climate change (desertification of large swaths of the Syrian territory), misgovernance, economic hardship, overpopulation, factionalism, and the terrorist contagion from neighboring Iraq (all “unconventional” threats) contributed to the Syrian civil war and foreign military intervention, which in turn heightened the (traditional) tension between Russia and the United States, between Iran and Saudi Arabia, and between Iran and Israel.

Third, New developments of unconventional insecurity, such as climate change and gender discrimination, interact in ways that frustrate traditional conceptual definitions, conceptual maps, and national policies. States and other security actors have to innovate and combine forces in often unexpected ways.

As “non-physical security, diversification of threats, and the salience of identity are key effects of globalization in the security realm” (Cha, 2000), the new security environment in the twenty-first century is essentially intermestic (international and domestic) and combines more variables, dimensions, and instruments, including military or military-grade resources mobilized by non-state actors such as criminal gangs, irredentist movements, and terrorists.

Fourth, unconventional security challenges will likely shape our future. “Low politics” or “soft” issues, failed to register them as “systemic threats,” and often deprioritized them in comparison to traditional, state-centered threats, they are now morphing into an increasingly recognized as “hard security” and “high politics” challenges in the twenty-first century. For instance, the massive migrations affecting Europe over the past few decades feed nationalistic, anti-Islamic forces; the rise of the authoritarian, anti-democratic right; electoral volatility; Brexit; and the possible unraveling of the European Union and the Western alliance.

Another example, the AIDS epidemic is seriously straining the family structure, social fabric, and economic development of many sub-Saharan countries. In these countries, the virus incapacitates and kills millions of workers, parents, and citizens; it creates generations of orphans, undermines community life, jeopardizes agriculture production and governance structures, causes immense suffering, and is a national, regional, and global security risk.

Fifth, the Future already arrived in several ways. Some new threats appeared as traditional threats such as diseases, gender violence, under-development, and crime; these threats are deeply modified today by globalization, which warrants fresh examination. Recent trends give clues as to what tomorrow holds: for instance, climate change is not some future threat; it has been affecting many regions for some time, and will only worsen.

Dominant countries, regions, social groups, gender, and race live in different geographical and social places and different time frames from the dominated. In particular, the powerful can externalize their negativities such as pollution, etc.

The security implications of past, present, and future climate-related changes affect health/disease, migration, food availability, political in/stability, ..., etc.

4. Security theories for new technologies

The realist perspective may underscore actual dangers to traditional states as national boundaries erode, whereas the traditional arms race has exploded into a technological race, including hacking, intrusion, and cyberwarfare as the fifth domain of warfare.

Liberal internationalism perspective raises the importance of technological tide that may emerge with a great deal of work and diligence on the part of many stakeholders. They would advocate international cooperation, regimes, and institutions to frame these new forces.

Constructivists ascribe the new technological developments and that our cultural and psychological projections, anticipations, and fears can turn them against our interests.

New technologies are revolutionary and baffling enough to warrant new security paradigms that traditional international relations ignored so far. Traditional boundaries break down as power concentrates on information technology and STEM.

Existing social and political structures are stretched, strained, and broken as power distribution shifts toward the complete interweaving of information as the new fabric of society. While legacy power structures remain, coevolving alongside the exploding information economy, the distribution of force ownership of conventional assets has become increasingly diluted and disrupted.

Below the interrelated aspects of our technological world:

Cyberspace threats, artificial intelligence, scientific and technological development, and the vulnerabilities of global logistical networks made possible by trade globalization and information technology. However, Malicious ideas emerge, allowing for novel forms of control via super-intelligent predictive algorithms, ubiquitous surveillance, and robotic/drone deployment. The “evolution of evolution” (Kelly 2017, 2018) may outstrip the human ability to cope.

Generally, The New dangers lurk at the intersection of human and technological co-evolution, since the existing social and political structures are stretched, strained, and broken as power distribution shifts toward the complete interlinking of information as the new fabric of society.

4.1. Threats for cybersecurity and STEM. Digital ecosystem and critical infrastructure

Mature organizations possess key functional capabilities that allow them to run an effective security program to protect against attacks intended to penetrate the confidentiality, availability or integrity of critical information (Understanding New Security Threats - Google Books, n.d.) (Gueldry, Wei, 2016; Limba et al., 2017; Korauš et al., 2019).

The foundation of any security program is the Governance, Risk, and Compliance (GRC) area, which defines the strategy, identifies risk areas and ensures compliance with defined or mandated standards and regulations.

Security governance defines the policies and standards that apply and enforce these policies across the organization. Risk management is critical for determining the risk level associated with various threats, security control gaps, and vulnerabilities. Based on these risk levels and collaboration with governance and technical experts, priorities are set, driving a strategic roadmap for maximizing security investment to reduce or offset risk over time.

Compliance management involves assessing the adherence of an organization to applicable regulations, standards, and internal policies. In smaller organizations or less mature security programs, all of these responsibilities may be assumed by security management, whereas, for mature organizations, there could be a sizable team dedicated to the contentment of these responsibilities.

Vulnerability management involves scanning applications, systems, and infrastructure to find entry points where systems are inclined to attack. While security controls can stop a wide range of potential attacks, they are not a substitute for continuously finding and remediating issues that could be exploited. Risks identified by the vulnerability team are typically leveraged by GRC, engineering, and architecture to help remediate issues and harden security controls to prevent exploitation.

Incident response leverages alerts from the security controls ecosystem to identify, contain, and reverse the impact of intrusion attempts, intended to compromise the confidentiality, availability, or integrity of information assets.

Forensics performs post-intrusion analysis to help quantify, contain, and remediate a breach this function also helps inform any requirements for executive or public disclosure requirements.

Information from these two processes helps to inform the hardening of security controls by engineering and architecture, while also feeding key information into the GRC/Risk Management function.

Finally, when a full mature security program has been implemented, it is time to "Sustain" this progress. At this point, GRC processes should be reaching full maturity.

Digital Ecosystems

A natural of the ecosystem is a complex combination of interconnected organisms and their environment, including all organic and inorganic constituents. Technology systems also organize into digital ecosystems comprised of people, ideas, and information (software and data), along with the diverse infrastructure supporting complex networks of interactions. Just as the natural and ecosystem evolves and adapts based on continuous interactions between organisms and their environment, digital ecosystems are adaptive self-organizing constructs that co-evolve toward adaptive novelty (Sebastiani et al. 2019; Vlasov et al. 2019).

STEM

Science, and Technology, and Engineering, and Mathematics represents the field of emerging technology and expanding capabilities that materialize new ideas with unprecedented speed. They include, notably, artificial intelligence (AI), robotics, bio- and geoengineering, space exploration, nanotechnology, computer-aided design (CAD), additive manufacturing (3D of Printing), and massive digital interconnectedness.

Computer interactions with many technologies weave together our activities; our social interactions depend on the Internet of Things, or technologically connected material elements which the estimations for the number of internet-connected devices expected by the early 2020s range from 20 to 50 billion. Let's think of the number of systems essential to visiting a hospital, flying across a continent, or going through typical work/school week. The level of interdependence we have formed with our technology has become astonishing, and loss of this capability would hurt our individual and collective mind, as mind now includes digital extensions of natural cognitive capability (Nordrum 2016). What happens if these technologies brought to our working job success in life then interrupted? What technologies exist on the horizon that we will simultaneously benefit from and become dependent on us or are we upon?

Technological substitution and the crisis of employment

The long-term aspects of STEM introduce future challenges; other pragmatic issues warrant unique, more immediate consideration because their consequences are already here.

A unique dilemma arises where countless tasks can be automated and hit critical mass, causing catastrophic job loss and degradation of status. The socio-economic implications are profound both during today's transition period and as this automation revolution further materializes.

Imagine a scenario where productivity hits an all-time high, with robots producing goods at an unfathomable rate, while fewer consumers have the resources to purchase these products due to unemployment and polarization of wealth which would lead lack in the economic system and then collapses due to lack of demand from erosion of aggregate purchasing power. The irony is if such a work market collapse occurred, it would be against a backdrop of unprecedented production (Mallozzi, Mullie, 2015).

Emerging cultural and social tensions and unrest may accelerate the use of autonomous robotic police and warriors to keep the peace. The topic of semi-autonomous killer robots and already been proposed since military drones are now widely utilized. In the existing episteme of humanity, few would argue that military projection of force is not are necessary. Elon Musk and Mustafa Suleyman have led a consortium of experts to petition the UN to ban the development, proliferation, and use of killer robots (Gibbs, 2017). Even this is the reactive effort intended to curb the impact of what is already occurring.

Awareness, preparedness, and resilience of societies emerge as key preconditions of further secure and sustainable economic development and general well-being (Tvaronavičiene, 2018), i.e., to develop ability to recognize, prevent, and, in case of disaster, to resist to consequences of critical infrastructure infringement which is the ultimate goal of fostering of leadership for critical infrastructure protection (Tvaronavičiene, 2018).

Hence, the European Commission has developed a Critical Infrastructure Warning Information Network (CIWIN) and European Reference Network for Critical Infrastructure Protection (ERN-CIP) ("EUR-Lex - j10013 - EN - EUR-Lex," n.d.), which ultimately would develop ability to share, discuss and generate novel approaches leading to fruitful outcomes related to critical infrastructure protection and enhancement of resilience of international community to the possible disasters.

5. Case studies of the impact of new technological threats on the information system in modern societies

What information systems interact with us, and how many activities in our day are technology dependent? Let's take the typical day for a progressive and technologically inclined adult, working for a large company in an urban area, after getting ready; they may ride into their cars with navigation and automation capabilities that border on self-driving. They receive updates on traffic, revise their commute to save several minutes, and avoid close calls with advanced collision avoidance features that now come standard on many models.

Once at work, tasks and meetings are organized and presented by personal productivity and automation software, with a speed and precision that eclipse anything that a human assistant may provide. A team of people spanning three continents uses telepresence software that allows everyone to collaborate on the same project, update design schematics, and share ideas in real-time. Lunch is ordered and paid for via apps. Workers text messages, use FB Messenger, Viber, WhatsApp, Skype, or Zoom with spouses, friends, and fellow workers all over the world. Dinner is ordered on apps while the smart-oven is preheated remotely during the commute to be at the right temperature to cook the meal exactly when the family arrives home. After dinner, the kids enjoy a video web

session with friends, before having their goodnight song delivered via grandparents retired abroad. (Vance, Ashlee, 2017).

This is our world now; practically every aspect of our daily life has the potential for augmentation and enrichment by powerful information systems.

What security controls have been implemented for each of these capabilities? How might an attacker manipulate these capabilities for financial gain, damage, or disruption?

Consider the following simple and ubiquitous scenarios:

- Purchase gas on the way to work.
- Drive in a vehicle with many networked computer systems.
- Transfer funds, withdraw cash, or accept payment for goods or services.
- Swipe your badge to enter the office and start work.
- Consume power, water, or gas from utility companies.
- Visit a physician, dentist, or hospital.

What type of technology systems are involved in even the simplest of jobs? How many technology systems have you interacted with today?

What would happen if some or all of these systems were unavailable or manipulated to benefit the agenda of any given attacker? Reflect on the number of tasks that are dependent on information systems or technology that could be either grossly or subtly manipulated. What is the impact potential?

What would happen if the power were unavailable for an extended period for a cold or hot area? How many times in a typical day could credit card or banking information be leaked or intercepted? What information collected about the daily activities we take for granted, which could be used for nefarious purposes? Could malicious threat actors also be peering through the looking-glass of our numerous webcams?

The infamous Stuxnet program against Iran's nuclear program development allowed for a covert technological solution to this perplexing problem. This advanced joint effort involved a malware payload designed to self-propagate rapidly while remaining dormant until certain very specific conditions were met. The malware propagated via a variety of methods, including removable media, to allow it to cross networks with an Air Gap to protect critical SCADA/industrial control systems. When the malware detected it was running on a Siemens industrial control system, consistent with those used in the centrifuges used to enrich uranium gas by the nuclear program for Iran, it engaged a subtle malicious payload. This malicious payload subtly altered the rotational speed of the centrifuges while reporting normal conditions to the operators of the machinery, with dramatic effect. This caused the costly and difficult-to-obtain devices to wear out rapidly, without a clear explanation or attribution (Zetter, Kim, 2014).

WannaCry (Fruhlinger, 2017) was known as a massive ransomware outbreak that paralyzed entire nations. This attack is believed to have impacted more than 200,000 systems in more than 150 countries, using a Microsoft vulnerability known as Eternal Blue that allowed for exploitation of the Server Message Block (SMB) protocol to allow attackers to execute commands on the host system (Vulns Tagged Entries - (CGISecurity.com), n.d.)(Grossman, 2017).

This attack crippled the railways of Germany, universities in China, and the telecommunications infrastructure of Spain, among countless others. This attack denied access to a massive range of information systems, creating a global impact.

Debate continues on the topic of the true motive for this attack was it for financial gain, or was it a test case for how to leverage ransomware for massive global disruption? What if an attack like WannaCry was implemented in a more targeted manner against critical infrastructure as part of a complex and multifaceted military strategy? Based on these scenarios, what are the practical implications of confidentiality, availability, and integrity and how can we expect them to play out in the future?

Today's threats: Trade war between China and the USA for the sake of National Security. Trump ban Huawei communication networks and equipment.

Huawei is one of the biggest telecommunications companies in the world that is abandoned in some countries, including the US, they banning the use of Huawei networking equipment, and therefore Huawei phones are virtually invisible in these countries comparing around the world.

In January 2019, US Justice Department unsealed indictments that included 23 counts about the suspected theft of intellectual property, obstruction of justice and fraud related to its alleged evasion of US sanctions against Iran (Huawei ban: Full timeline on how and why its phones are under fire - CNET, n.d.)

The core issue that Huawei ease with the Chinese government, which creates fears with some countries such as the US that Huawei equipment could be used to spy on their country and companies.

The US banned companies from using Huawei networking equipment in 2012, and the company was added to the US Department of Commerce's Bureau of Industry and Security Entity List on May 15, Trump signed an executive order essentially banning Huawei because of national security concerns that the company is too closely tied to the Chinese government and that its gear could be used to spy on other countries and companies (Huawei ban: Full timeline on how and why its phones are under fire - CNET, n.d.).

Conclusions

What is to be sustained and what is to be developed should follow with what is to be secured since Sustainability and Security have goals equal in importance and linked together. Sustainable Security integrates critical all of the state, human and environmental security, and parallels the three linked pillars of society, economy, and nature central to the field of sustainable development. New technologies are revolutionary warrants new security standards that traditional international relations ignored so far because these threats have trans-state nature and become vulnerable to regional security and then to regional development. Most of the trans-state threats depend on networking which enables them to attack regions economically, socially, also threaten ecological security, which deals with the threats, disruptions, and degradations that social systems impose on ecosystems and other forms of life. Societies have to keep aware of the consequence of new technologies by analyzing and monitoring their impacts and to be ready for the new threats, whether novel threats or new impacts of old threats and to be resilience with the international community for the possible disasters since the new technologies and globalization create new. Further research areas could be the focus on the study of how to forecast, measure, and manage these trans-state threats to security that came from new technologies. Issues of regional development can be solved by taking into account a wide array of threats to security.

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**TERRORISM ACTIVITIES INFLUENCE ON FINANCIAL STOCK MARKETS: AN
EMPIRICAL EVIDENCE FROM UNITED KINGDOM, INDIA, FRANCE, PAKISTAN,
SPAIN AND AMERICA***

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Abstract. The aim of this study is to investigate the impact of terrorism activities on five developing and developed economies and their financial markets. Five countries selected for analysis include Spain, United Kingdom, India, Pakistan, United States of America and France. The variables under consideration are terrorism activities and market return of the financial stock markets. This study contains time series data collected on daily basis from 1st Jan 2001 to 31st Dec 2018. Study utilized deductive research approach with quantitative data. A linear regression model is used to estimate the effect of terrorist activities on the market return of the financial stock markets of the selected countries. The results of the model suggest that the market return is very much affected by the occurrence of such terror events and the model is overall statistically significant. The results of this study are consistent with the results of Freytag et al. (2009) and Bas et al., (2017) studies which show that there is significant influence of terrorism activities on financial stock market of five selected countries. This study is very significant and essential for investors and analysts as it helps them to understand how terror factors influence stock market and the right time to invest or exit the market. Findings of the study highlight and explain how terrorism activities influence the overall market return.

Keywords: Terrorism Activities; Financial Stock Market; Linear Regression Model; Quantitative Analysis; Deductive Approach

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1. Introduction

Change in circumstances is expected to affect the stock prices with a direct reflection on the discounted value of existing and future performance of a firm. Schwert (1981), Freytag et al. (2009), Kumaraswamy et al. (2019), Peker et al. (2019) state that positive and negative changes in the stock prices can possibly be connected to certain particular event.

. Investors can easily, inexpensively and quickly change their decision of buying and selling stocks at any time. Whenever information about a military attack or some terrorist activity is reported, which in themselves result in great upheavals and disturbances, a person who have invested their capital in those places can immediately choose to leave the place along with their capital. The term terrorism has been defined by different researchers but Sandler & Enders (2008), describe terrorism as the “Premeditated, threatened or actual use of force or violence to achieve a political goal through fear, coercion or intimidation”. This definition brings within its fold the four features of terrorist activity as given by Schugart (2006), using violence for political purpose: a well-devised way for an action; such behavior which is not within the accepted rules of warfare and, an effort to produce great fear and sense of insecurity among the people, particularly, the civilians.

Terrorism causes biggest threat to economy not to mention the loss of human lives, especially of innocent people. According to Bloomberg (2004), Tawares (2004), and Crain & Crain (2006) terrorist acts cause a disruption of economy or slow down the progress making foreign investors to hesitate investing in such adverse circumstances (Abadie and Gardeazabal, 2008). Without any doubt, terrorism has now become a major security issue in the world. With an increase, governments have considered counter terrorism measures as a major priority on their agenda. As a result, most governments’ actions have limited individual freedom and civil rights while also increasing the anti-terrorist spending in their budget This study’s objective is to analyze the impact of terrorist impacts on the financial markets and response of the markets after such dreadful events.

Financial Stock markets are responding to these activities and the fluctuations in the markets are so visible that it can change the mind of foreign and local investors. Financial markets play a vital role in the development and growth of the economy. The decreased level of confidence of the foreign and local investor leads towards adverse movement of the markets. This study determines the market reaction due to these terror attacks and what are the measure investors and policy makers should utilize to remain stable in such worst conditions.

Literature Review

1.1. Theoretical Foundation of Rational Criminal Theory

Becker, (1968) developed a “Rational Criminal” theory stating that all individuals spend their time in a rational way; that is, a method through which they can maximize their utility; between the legal and criminal activities. According to his theory, each individual considers the following things before committing any crime (a) risk of being caught, chances and magnitude of the punishment (b) consider the stigma and moral cost related with the criminal activities. While he concluded that a person is more likely to indulge in criminal activity that is providing maximum marginal benefit from such activity. Uneducated person with

a lower wage is more likely to carry out a crime relative to murder and other violations that are unconcerned with the persons' economic activity.

1.2. Reasons of Terrorism spreading activities

Kruger and Maleckova (2003) conducted a study to analyze whether poverty and low education has any contribution to promote terrorist activities. Berrebi (2007) conducted a similar study to investigate the correspondence between the terrorism, education and income level and he concluded that being married remarkably decreases the chances of involvement in terrorist activities. De Mesquita (2005) demonstrated these finding by presenting a model to the interdependence between terrorist activities, government and terrorist volunteers. He concluded that terrorist volunteers are not educated, and absence of economic opportunity has positive relation with terrorism. Bas Chaudhary, (2017) in his study described the role of ethnic conflict, freedom of speech, political freedom and economic organizations in promoting transnational terrorism in the origin countries. Study concluded that there is a proof that political rights, freedom of speech, of group, of constitutional elections can decrease the effects of ethnic terrorism. While economic opportunity can also decrease the chances of occurring terrorist activities. Freytag et. el., (2009) demonstrated the role of socio-economic factors in terrorism. They noted that socio-economic situations affect the terrorist activities through opportunity cost of terrorism.

1.3. Economic Cost of Terrorism Activities

Tavares, (2004) carried out a precise and organized research to find the economic cost of the terror incidents at the country level. The study assumed that effect of terror attacks on GDP is quantifiable and by comparing it with the other aggregate shocks will allow them to measure the cost of terrorism. Lenain et al., (2002) demonstrated that three possible ways through which the terror might influence the macro economic activity. First, the decline in the insurance coverage can be observed as an indication of the increased risk, greater trading cost that leads towards lesser dealing in international trade and higher defense and security expenditure.

Economic Consequences: Hillman (2007) examines and refines the arguments about supreme values in the rent seeking economies, likewise in Arab oil exporting countries and in Radical Muslim Gaza Strip. Researcher concluded that the expected economic prosperity has no impact on the emergence of terror and political violence. Freytag et. al., (2009) conducted a study to find the relation between terrorism and socio-economic conditions with analyses showing an interesting picture. Unexpectedly, the impact of GDP per-capita has a positive association with the terror activities (besides European countries) while the relation converts into a negative associated when GDP per-capita in a quadratic form. The affiliation between the investment and terror incidents is extremely negative, excluding the Islamic countries where this association is positive.

Benmelech and Berrebi (2007) work finds the association between human capital of the suicide bombers and the results of their suicide attacks. Their study confirms that human capital is a crucial factor in producing the suicide terrorism. The empirical analysis was done by using regression model and they concluded that suicide attacks in Israel have a positive association with both standard of living and education.

1.4. Terrorism in Developing and Developed Economies

Hobijn (2002) study compares historical and expected expenses on national security by the local and federal governments and the other projects that are being conducted by the government. The study addresses three basic questions, starting with the amount of expenditure that the government will have to spend on the security issues and seeks to answer this question by comparing the historical and expected expenditure conducted by the federal and local government on security issues with the expenditure conducted on other programs. The analysis shows that after the disastrous event of September 11 2001, US government and private sector adopted extra security measures and the cost of carrying out those measures have increased the expenditure and has made a great impact on the economic condition of the country. Moreover, a small change has been found in the productivity of labor as well. Lenain et. al. (2002) evaluated that increased level of terrorism activities has forced the government to spend more on the homeland security and on military operations; this phenomenon has been more observed in the US while in a lesser extent in the OECD countries.

1.5. Reasons of increase in Terrorism Activities

In another study, Krueger and Maleckova (2002) examined the major causes of terrorism by using the micro data. Public opinion has been taken through different surveys and found that West bank and Gaza supported the terror attack being conducted in Israel. Exceptionally, they uncover that these violent attacks are not at all associated with education and economic status. Another study, describing the features of the terrorist individual demonstrates that higher income and better education would not lead toward the lower terrorism activities.

Most of the studies regarding causes of terrorism and its effect on the economy have been performed globally. Bloomberg et al., (2004) executed a research that carry two folded aspects. Initially they established and developed a theoretical model to find the link between the economic condition and the terror activity with a cross-country data set. The study concluded by finding that states, which are entangled in the recession (one phase of trade cycle), would face increased number of terror incidents. The intensity of terror shocks varies from group to group and state to state as the people have different state of mind and maybe they are dissatisfied from the political situation. The multiple equilibrium model concluded with two likely outcomes; decreased economic activities will lead to increased terrorism activities and the economic prosperity will lead to decreased terror attacks.

1.6. Influence of Terrorism Activities on Financial Stock Market

Neumayer (2004) research focuses with an objective of analyzing the effective policies and other regulatory outcomes to safeguard the financial markets from terror attacks. They collected the data of New York's attack (in 2001) and Madrid's (in 2004). The results demonstrated that expanded sound and liquid markets are more effective and efficient to absorb the stocks of the terror attacks. In any case, the paper clearly supports assumption that responses affect the financial markets and save the markets from absorbing the shocks up to some extent. Further, they concluded the primary function of state bank as the lender of the last resort was much effective in controlling the aftermath panic from the market after terror activity.

1.6.1. Terror activities influence on Pakistan stock market

Alam (2013) conducted a study to investigate the connection between terror activities and the response of the financial stock markets and how these terror shock affect the development of the financial markets. The paper selected Pakistan as its case study because Pakistan's terrorism was increasing while the country is also playing a major role in the war against global terrorism. The objective of the paper was to dissect the

effects of terrorism on the development of the stock markets of Pakistan. By utilizing “terrorism impact factors” an interesting and unique score was developed for the research paper, a deeper understanding was produced to analyze the linkage that exists between the terror shocks and KSE index. Moreover, the researchers examined the quantitative significance of selected terror attacks on stock exchange of Pakistan (Karachi Stock Exchange). The empirical study concluded by considering the financial markets that respond in a negative manner during a long-term effect of terror activities. Whereas, in the short run no significant effect is estimated between terrorism and stock return. The result clearly indicated that the terror shocks definitely change the investor’s state of mind and mood up to a large extent and ultimately influences the economic situation of the country. Therefore, it is correct to say that terror is a prominent setback to the development and health of the economy.

1.6.2. Terror activities influence on Spain stock market

The detailed study of Neumayer (2004) attempts to analyze the movement of the global financial stock markets. They choose terror attacks to the response of the authorities. They selected two major terror events; first one is the disastrous event of 9/11 and the second, the event of 11 March 2004 in Madrid (Spain); to analyze their impact on financial markets. Due to the globalization environment, the reaction of the authorities and the joint efforts among prosecuting and intelligence agencies, financial markets, regulators and government is crucial to develop the financial systems and make them stronger against these terrorist attacks.

1.6.3. Terror activities influence on United Kingdom stock market

Bas et.al. (2017) examined the magnitude and time period of response of the market indices after the terrorist attack. They examined the impact of Berlin (attack in 2016), New York (2001), NYSE (2016), Madrid (2004), Brussels (2016), London (2005), Paris (2015) and Boston (2013) on the stock exchange indices of Euronext Index (BEL), USA (S&P), France (CAC), Japan (NIKKEI), UK(FTSE), Spain (IBEX) and Germany (DAX). They have used event study methodology and graphical analysis to analyze the impact of terror shock on the financial stock market indices. Their results stated that the time period and magnitude of the terror event have a moderate effect and their affect reduced over years. They concluded that the selected events have a short term and relatively smaller impact on the financial markets. Whenever, new information about an attack circulates in the market, it definitely leads toward the extra contagion and uncertain affect in the immediate decline in the stock prices. Their results are in accordance with the results of other researchers like Enders & Sandler (2007).

1.6.4. Terror activities influence on Indian stock market

Aslam (2015) analyzed the effect of 410 terror attacks on the development of 5 Asian stock exchanges. The study considered five Asian countries with developed stock exchange and also having a larger number of comparatively intense terrorist incidents. The data collected from Bangladesh, India, Indonesia, Philippines and Sri Lanka on 410 terror events are considered as specimen Asian countries from January 1997 to December 2011. Regression model was used to calculate the effects of these terror events and the empirical results clearly indicated that stock markets have been significantly affected by the terror events. The magnitude of these effects was different with respect to target and country types. PSEI, DSE and JKSE performed in a negative manner after the terror incident or attack. Attacks in Sri Lanka and Bangladesh significantly affected the CSE and DSEG indices. Bomb blasts and suicide attacks specifically bring negative effects on DSEG and CSE in the second day of the attack. Further analysis of the study brings to light that those attacks that target the business sector and defense/security forces negatively knock the

returns of Asian stock exchanges. Likewise, the more austere the terror attack (i.e., more injuries and fatalities) is the greater negative impact on the returns of stock market.

1.6.5. Terror activities influence on France stock market

Chesney et. al. (2010) analytically examined the effect of terrorism shocks on the behavior of commodity markets, bonds and stock markets. In this study two types of data sets were used. In the first data set, a price of daily stock market indices was collected. Data of daily stock prices from Data Stream and for each index gathered were considered with the daily prices encompassing the period between 4th January, 1994 and 16th September, 2005. The selected prices data include 3054 data points and the logarithm of the percentage index return were calculated. For this study data about terror incidents in 25 countries over 11 years period were gathered for analysis using filtered GARCH approach, event study methodology and non-parametric methods on the data.

1.6.6. Terror activities influence on United States of America stock market

Lacker (2004) stated that many key market elements were damaged or destroyed in the attack; that had significant operations surrounding the World Trade Center; that caused a wide spread closure of New York financial markets and a great and noticeable loss of human life, consisting over 74% of the civilian casualties in the World Trade Center attack. The government and the local securities markets largely absorbed the effect of the loss of small brokers, largest interdealer broker and cantor Fitzgerald whose offices were situated in the World Trade Center. Chen and Siems (2004) used event study methodology to capture the impact of fourteen terror attacks dating back to 1915. In addition to the selected 14 events the researcher also encompasses the attacks of Iraq on Kuwait and the 9/11 attacks on the World Trade Center and the pentagon with similar findings.

2. Research Methodology

2.1. Data

Research methodology section explains the data set used to analyze this study. First, the deductive method approach was utilized, as the study is based on hypothesis testing. The data regarding the terror activity is taken from Global Terrorism Index[†]. To calculate the Daily Average Return, the opening and closing index of the selected stock markets were collected. A financial market is a broad-ranging term that covers all market places where equities, currencies, derivatives and bonds are traded by buyer and seller. So, the population of study includes all global big and small financial stock markets. Sample of study is five economies stock market indices which include Spain, United Kingdom, Pakistan, India, France and United States of America. Data of these countries is collected from New York stock exchange, Bolsa de Madrid (Spain), London stock exchange, Karachi stock exchange, Bombay stock exchange and France stock exchange. The study is based on the sample of six countries, four of them are developed countries while the remaining two countries are developing countries. Sample of data collected from the developed countries are from Spain, USA, France and United Kingdom. All these countries are high in human development and the level of income. To examine the effect of terrorism on the South Asian region, the study selected Pakistan and India as countries most affected by the terror events. The data of this study has

[†] The Global Terrorism Database started in 2001 at the service of the University of Maryland. The complete information and data was gathered by the Pinkerton Global Intelligence Services (PGIS). General Public can freely and openly access this data base and gather information about terrorist attacks. The National Consortium established for the Study of Terrorism and Responses to Terrorism (START) design the GTD so that people can collect the information through internet and all the information can be assessed in a short time.

been collected from the Global terrorism data Base while data of the exogenous variable (market return) were collected from yahoo finance.

2.2. Statistics

In this research, regression analyses have been used to analyze the impact of terror incidents on financial stock markets and to estimate the results of the time series, E Views econometric software is used. Regression analysis is used as the same unit was used to analyze impact of terror attack on financial markets like Berrebi (2007), Freytag et al. (2009), Bas et al., (2017), Neumayer (2004). Data is time series in nature and collected from first January 2001 to 31st December 2018. The econometrics model of study is:

$$\text{Market Return} = \alpha + \beta (\text{Terrorism Activities}) + \mu$$

Where;

Y = Dependent variable (Market Return); α = intercept of the regression model; β = Regression coefficient;

X = independent variable and μ = Disturbance term of the regression

3. Empirical Analysis of Study

3.1. Test of heteroscedasticity

In this research thesis, Breusch-Pagan-Godfrey test has been used to test the heteroscedasticity with the following developed hypothesis: Null hypothesis: Residuals are Homoscedastic and Alternative hypothesis: Residuals are heteroskedastic. P-value and F-statistics for considered stock exchanges is presented in Table 1.

Table 1. P-value and F-statistics for considered stock exchanges

Models	India (Bombay Stock Exchange)	Spain (Bolsa de Madrid)	Pakistan (Karachi Stock Exchange)	France (France Stock Exchange)	USA (New York Stock Exchange)	UK (London Stock Exchange)
P-value	0.180	0.244	0.640	0.947	0.108	0.130
F-staistics	5.343	4.663	0.218	3.063	4.788	4.711

Bombay Stock Exchange (India Results): F- Statistics shows that overall model is significant in nature. The observed P value is 18% which is greater than 5% which means residuals of the model are homoscedastic. So, we accept null hypothesis and reject the alternative hypothesis which means residuals are not heteroskedastic, in other words, homoscedasticity exists in the data.

Bolsa de Madrid (Spain Results): F- Statistics shows that overall model is significant in nature. The observed P value is 24% which is greater than 5% which means residuals of the model are homoscedastic. So, null hypothesis is accepted and reject the alternative hypothesis which means residuals are not heteroskedastic, in other words, homoscedasticity exists in the data.

Karachi Stock Exchange (Pakistan Results): Karachi stock exchange is being selected to analyze the impact of terror activities on the stock market of Pakistan. P value is 64% that is greater than 5 which clearly

state that the model is free from heteroscedasticity. Homoscedasticity exist in the model and it is also desirable to have. So, alternative hypothesis is rejected while accepting the null hypothesis.

France stock exchange (CAC 40 France Results): In this study to analyze the impact of terror activities on the financial markets of France, the CAC 40 index was selected. As CAC 40 is a bench mark French stock market index. Results show that P value is 94%. That is clearly greater than 5%. The results of the Bruesch Pagan test clearly mentioned that the model is free from heteroscedasticity. So, null hypothesis could not be rejected but accepted.

New York Stock Exchange (USA Results): The New York Stock Exchange is an American stock exchange that is among the largest stock exchanges of the worlds in accordance to its market capitalization. The results of the Bruesch Pagan Godfrey test reveal that the model has homoscedastic and the residual are free from heteroscedasticity. As the P value (10.8%) is greater the standard value that is 5%. So, alternative hypothesis was rejected while accepting the null hypothesis.

London Stock Exchange (UK Results): London stock exchange is the primary stock exchange of United Kingdom. In this research study, the opening and closing prices of 100 index of London Stock Exchange was collected from yahoo finance. The results of the Bruesch Pagan test reveal that the model is free from heteroscedasticity and homo exist in the model. As the P value 13% that is greater than 5%, null hypothesis could not be rejected and concluded that residuals are free from hetero problem.

3.2. Regression Model

The below table shows the results of the Auto regressive regression model as the dependent variable s appeared as independent variable in the model (Table 2).

Table 2. The results of the Auto regressive regression model

Regression Model Least Square Observation: 4481 after Adustment Sample: 2001 to 2018 Dependent Variable: Market Return									
Models	India			Spain			Pakistan		
	t-statistics	P-value	R ²	t-statistics	P-value	R ²	t-statistics	P-value	R ²
	-52.81	0.023	0.63	-11.30	0.002	0.62	-10.50	0.038	0.64
Models	France			USA			UK		
	t-statistics	P-value	R ²	t-statistics	P-value	R ²	t-statistics	P-value	R ²
	-8.268	0.026	0.68	-16.09	0.000	0.69	-19.26	0.000	0.81

India Regression Results: The value of R² represent that 63% variation in the dependent variable is due to change in independent variable. Remaining 39% variation in the dependent variable is due to other factors. Secondly the independent variable of the model is individually significantly influencing the dependent variable (market return). T statistics value is -52.81 which shows that there is negative influence of terror activities on stock return. As the P value against the independent variable (terror activity) is 2.36% meaning less than 5%, it shows that terror activity is negative and significant (independent variable) influence on dependent variable.

Spain Regression Results: R² value is 62%. R² shows the variation of the dependent variable due to the change of independent variable. Here the variation in dependent variable is 62% that comes from the terrorist activities while the remaining 38% is due to other factors.

France Regression Results: In this regression mode, the value of R^2 is 68.70% which shows that the model is best fitted and can be said that 68.70% changes in the dependent variable is coming from the change in independent variable. Secondly, the P value of 2.420% which is less than 5% shows that terrorism activities that are the independent variable of this study_ is significantly affecting the market return.

Pakistan Regression Results: R^2 value is 64%. That shows the variation in the dependent variable due to the independent variable. The variation in dependent variable is 64% which comes from the terrorist activities while the remaining 36% is due to other factors. Secondly, the terrorist activities are significantly influencing the market return as the P value is less than 5%.

USA Regression Results: The regression model shows that terror activities are individually significant in affecting the market response. The corresponding P value against the terror activities is Less than 5% that clearly assure the significance of the independent variable. Secondly, the model contains a good figure of R^2 that is 69% which is greater than 60% so, it clearly states the goodness of the good fit of the model. This R^2 means that 69% variation in the market return is due to the terror activities in the state.

UK Regression Results: In the above table, the regression analysis shows that the model is good fitted model as the value of R^2 is 81.477% which is more than 60%. The value of R^2 represent that 81.477% variation in the dependent variable (market return) is coming from the independent variable (terror activity). Secondly the independent variable (terror activities) of the model is individually significant. As terror activities are significantly affecting the market return because the P value against the terror activities is less than 5%.

4. Findings and Conclusion of study

The purpose of the study was to examine how terror activities have influence on stock return of different economies. Researcher has discussed the results of studies in different stock exchange context. **Bolsa de Madrid** results are aligning with Neumayer (2004) study. The results of study show that Spain is significantly affected by terror attacks. The results of the OLS Regression model suggest that Bolsa de Madrid Stock exchange is being adversely affected by the terror activities in the country. The Value of R^2 represent that 62% variation in the market return is due to the national and international terror activities. Finding shows that when terrorism occurs, it always affects the mind of the investor and ultimately decreases the market return. **Karachi Stock Exchange (KSE)** results are aligning with Alam (2013) study. Terrorist attacks have a bad impact on the stability of the financial markets. Due to such shocks investment, specifically, foreign investment has been reduced. It means that as terror attacks increases, the financial stability and performance of the Karachi Stock Exchange declines. It can conclude that terrorism has a negative relation with the market return. 64 % variation in the market return is due to the terror activity. The remaining variation in the market return of the Karachi Stock Exchange is due to other various factors like political instability and economic instability etc. that are not included in the current study. **Bombay Stock Exchange** results are aligning with Aslam, (2015) study, where market return of Bombay Stock Exchange is badly affected by the terror attacks. The coefficient of the simple regression model is – 0.44, which shows that one unit increase in the terror activity will lead to the decrease in market return by 0.44%. It clearly indicates that the Bombay Stock Exchange is getting the adverse impact from the terrorist activities happening in India. Large numbers of terrorism activities affect the economy of India in general and financial markets in particular. **France CAC 40 Stock Exchange Index** results are aligning with Bas et al. (2017). Terrorism cannot give fruitful results to any nation as the case with France. Though in the

France case, less terror activities occur but at times when the terrorism occur, it always affects the mind of the investor and ultimately decreases the market return. The results of the OLS Regression model suggest that France CAC 40 Stock exchange is being adversely affected by the terror activities in the country. The Value of R^2 represent that 68% variation in the market return is due to the national and international terror activities. **London Stock Exchange (LSE)** results are align with Bas et al. (2017) OLS Regression analysis suggests that LSE is least affected by the terror activities. As to high security measure, the country faces less terror shocks. The coefficient of the model is -0.018 which shows a small change in the market return due to terror activity. Though, the market is getting negative impact from the terror shocks. There are also other factors that affect the market return of the London Stock Exchange like political situation etc. **New York Stock Exchange (NYSE)** results are aligning with Neumayer (2004) study. The results of the regression model suggest that the return of New York Stock Exchange is negatively related with the terror activities. The coefficient of the regression model represents one unit increase in the terror activity which could lead to decrease of market return by 0.65%.

4.1. Concluding Remarks

The basic purpose of this study was to analyze the impact of international and local terror activities on financial markets of the Spain, UK, USA, France, Pakistan and India by using time series data from 2001 to 2018. By using OLS regression analyses, this study analyzed that terrorist's attacks can significantly impact the economic and financial situation of a country. The decline in the stock markets clearly shows that beyond the personal injuries and loss of life of the victims, terrorism has real economic cost that decreases the firms' profits.

4.2. Implications and Recommendations

Using the obtained results future researchers and policy makers can generate policies and managerial implications for national security, security trades and portfolio allocation. Taking into account terror actions as a factor impacting financial stock markets, people can better manage their portfolios and get the least effect of these shocks.

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POLICY TRUSTS IN PUBLIC POLICY IN THE SLOVAK REPUBLIC*

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Abstract. The research study offers an analysis of public opinion of citizens of the Slovak Republic focused on trust in politics and politicians, while the authors try to look for possibilities of increasing the political participation of Slovaks. Among other things, the analysis of public opinion showed that citizens of the Slovak Republic are not active in political participation. Most of the polled Slovaks do not try to influence politics other than by participating in elections, with only a third of those polled actively participating in the elections. Demanded citizens are not satisfied with the current state of the political scene in Slovakia, as well as with the current investigation of political cases. Research has also shown that Slovaks would be willing to participate in elections on a regular basis in cases where ordinary people care about politicians or if politicians are honest and reliable people who deliver on promises, (such as no-policy politics).

Keywords: Slovak Republic; politics; public opinion; political culture; active participation; trust

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JEL Classifications: F50, F68, Z11

Additional disciplines: political sciences

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1. Introduction

According to Jaroslav Čársky (2018), public confidence in political leaders is an indicator of the distinction between moral and responsible politicians from populists. As Bulanda (2017, p. 31) states, political power has always been expressed through the embodiment of political self and its presentation through laws. "The construction of a political personality is based on a historical context, expressing its own characteristic features of political subjectivity and political representation" (Bulanda, 2017, p. 31).

Public opinion polls on the credibility and non-credibility towards politicians are very popular among the public (Lincényi, Fabuš, 2018). Since the beginning of public opinion polls, the term public opinion has generally been used to refer to survey results (Chandler, Munday, 2011, p. 344).

Politicians are aware of the importance of mass media surveys, as the media have a significant share in the creation of the political scene, as they raise the media, political and public agenda. (Lincényi, 2015, p. 488) As stated by P. Juza (2019), public opinion and public theory of democracy tend to assume that today's large-scale democracy can retain all the benefits of itself and still have the advantages and opportunities of democracy to a small extent. So it is a differentiation between responsibility and populism, which is actually the godfather of political irresponsibility. "A thorough look at democratic ideals and practice is bound to reveal a large number of problems that probably have no definitive solution. One of the consequences of changing the dimension of democracy is praising the once so utopian democratic ideals. (Juza, 2019).

However, several experts point out that opinion polls are increasingly using as a tool for public opinion manipulation. Tibor Môcik is of the opinion that the degree of influence of polls depends on various criteria, like the influence of the mass media, on the social status of a particular person or his / her education. "In addition to general education, it is necessary to take into account the possibility of education that specifically targets media literacy of media recipients and the improvement of their ability to detect media manipulation."

2. Methodology and methods

The main aim of the submitted research was to analyze the current public opinion of Slovak citizens with a focus on trust in politics and politicians. The secondary research goal was to look for possibilities for increasing active participation of Slovaks in politics.

In the case of further planning and design of research, we preferred the concept of research questions to the identification of research problems. We identified the following research questions (VO):

VO1: What is the active participation of Slovak citizens in political life?

Explanation VO1: We think that the Slovaks are most active in parliamentary and presidential elections and vice versa least in European and regional elections. We rely on the results of statistics of the Statistical Office of the Slovak Republic for the last period. The answer to this research question will be determined through questions 1 to 5 of our questionnaire.

VO2: What is the current credibility or non-credibility of politicians among Slovak citizens?

Explanation VO2: We assume that the most trusted politicians will be former President Andrej Kiska, Prime Minister Peter Pellegrini and Chairman of OĽANO party Igor Matovič. On the other hand, the most untrustworthy politicians should be former triple Prime Minister Robert Fico, Chairman Marian Kotleba of the ĽSNS party and chairman of the National Council of the Slovak Republic Andrej Danko. These results were brought by the agency AKO in the same period when the questionnaire was collected. We will find out the answer to the research question through the questions 6, 7, 8 and 10 of our questionnaire.

VO3: What are the main options to help citizens be more willing to participate in politics?

Explanation VO3: We believe that citizens will be more interested in politics when politics is not associated with corruption cases, and when large cases such as the Gorilla case or the Kuciak case are properly investigated and accountable to the guilty parties. The answer to the above we will investigate through questions number 9, 11, 12 and 13 of our questionnaire.

The questionnaire was used as the main research method for data collection. The questionnaire was administered by 50 trained experienced interviewers personally in the field. The questionnaire consisted of 13 quantitative questions.

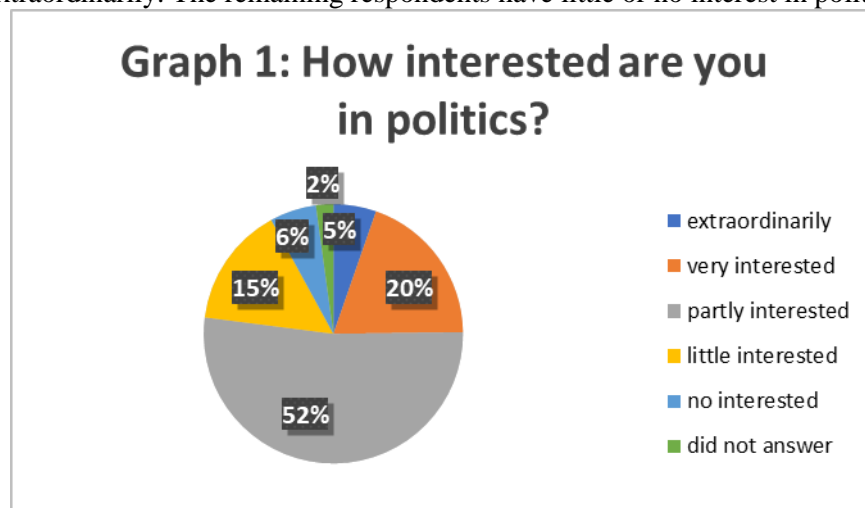
The survey was conducted in the first quarter of 2019 on a research sample of 879 respondents. The research sample consisted of 397 men and 480 women, with 2 respondents not giving their gender.

Looking at the research sample by age, 288 respondents were 18-25 years old, 215 were 26-35 years old, 148 were 36-45 years old, 90 were 46-55 years old, 66 were 56-65, 62 aged 65 and over, with ten respondents not responding.

Respondents from the research group came from Bratislava region (47), Trnava region (65), Nitra region (44), Trenčín region (456), Žilina region (91), Banská Bystrica region (70), Košice region (82), Prešov region (22), with two respondents not mentioning the region of origin.

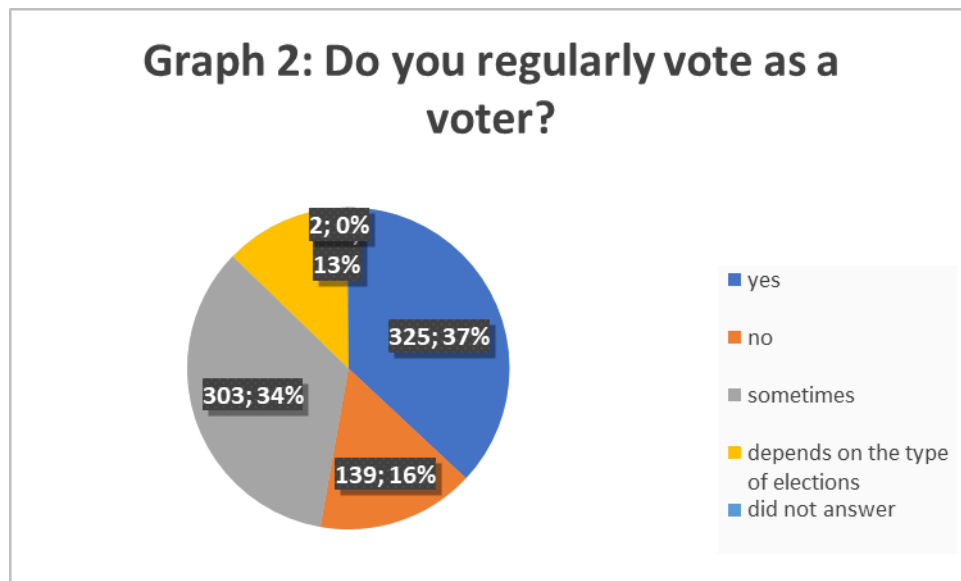
3. Analysis of results

Research has shown that for most addressed Slovaks, politics is not a priority in their lives. More than half of respondents are partly interested in politics (52%), while a quarter of respondents are very interested in (20%) and 5% are interested extraordinarily. The remaining respondents have little or no interest in politics. (More: Graph 1)

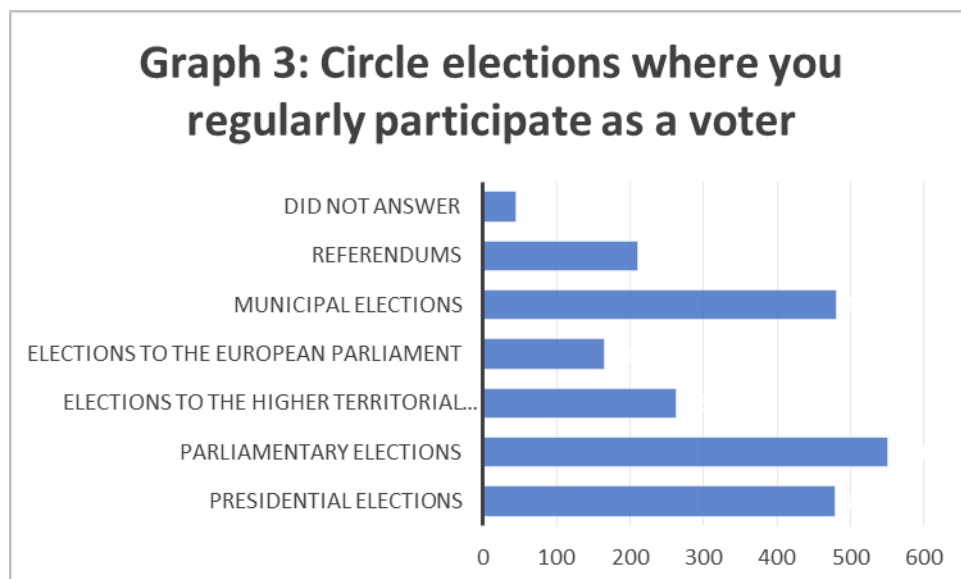


Source: Based on own research results

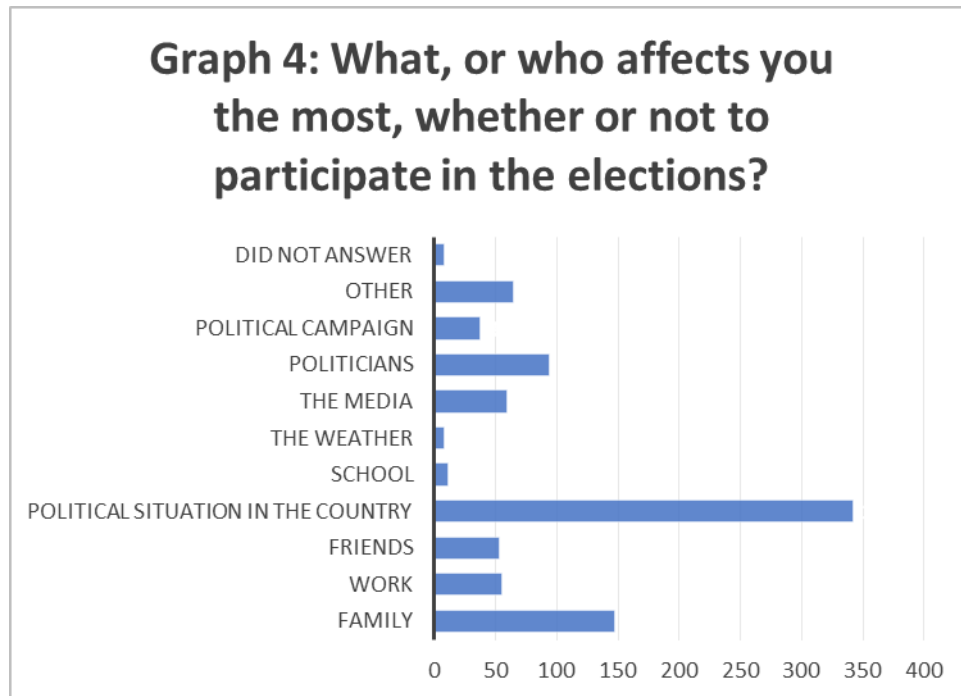
Slovaks have a slightly higher interest in politics in the case of elections. One third of respondents regularly participate in elections as a voters (37%), another third of respondents sometimes participate in elections (34%), part of respondents (13%) participate in elections according to a particular type of election. The remaining 16% of respondents said they did not vote regularly. More in Graph 2.



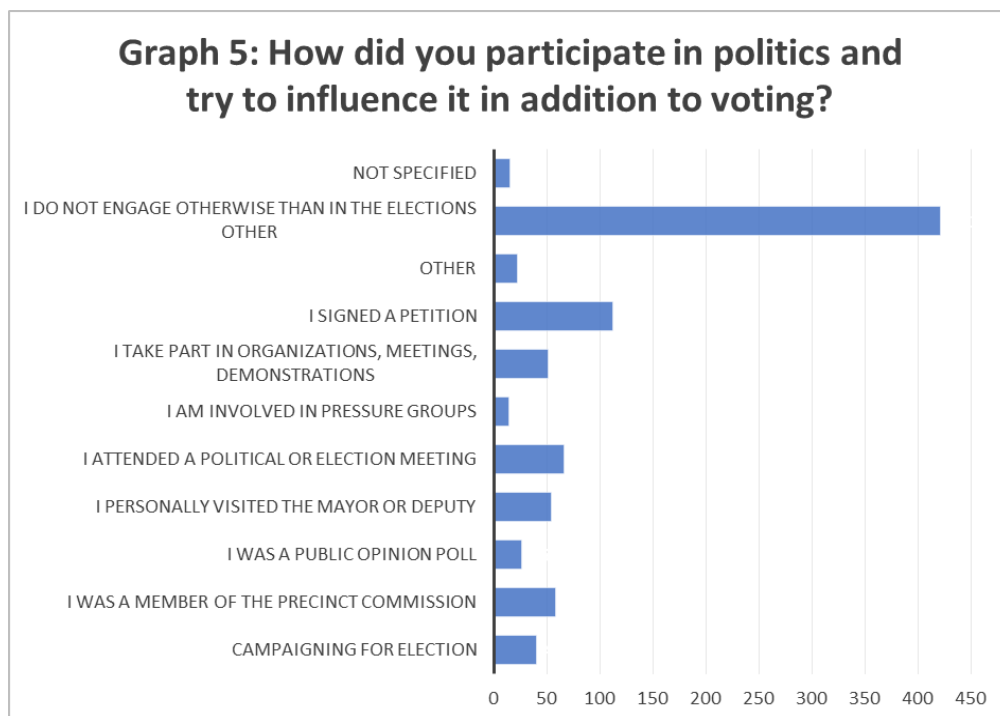
In the following question, we found out which elections they regularly participate in as voters, and it was possible to pick several elections on this issue. The research showed that Slovaks participate most in parliamentary elections (550 respondents), municipal elections (480) and presidential elections (479 respondents). On the contrary, the least interest is in the elections to the European Parliament (166 respondents), in referendums (211) and also in the elections to the Higher Territorial Units (263 respondents). 45 respondents did not answer. More Graph 3.



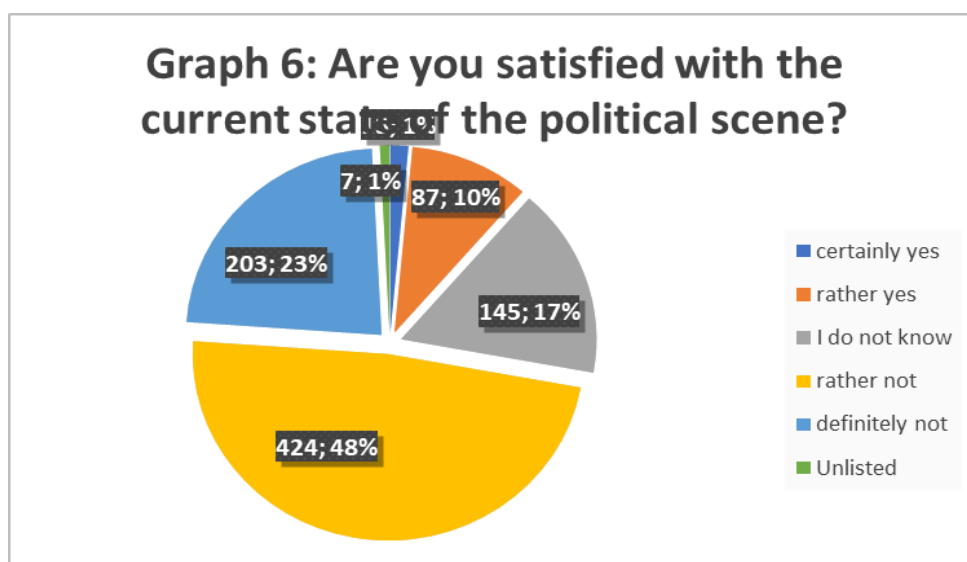
Furthermore, we asked what the respondents are most influenced to take part in or not to vote for. The research clearly showed that the Slovaks (342 respondents) decide whether or not to vote, based on the political situation in the country. The respondents are also influenced by the family (147 respondents) or politicians (94 respondents). According to the interviewees, the weather (8 respondents), school (11) or political campaign (37 respondents) have the greatest influence on their participation in elections. More in Graph 4.



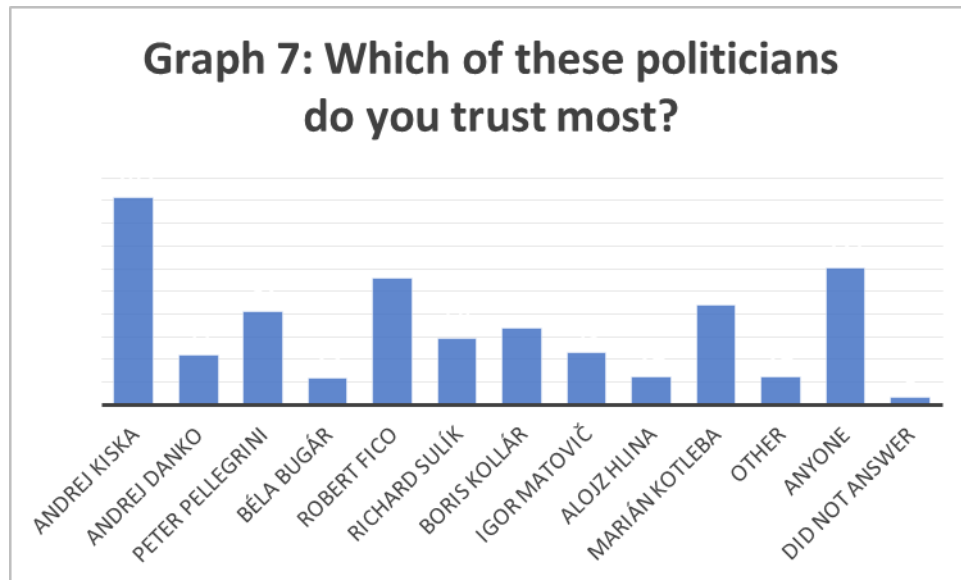
In the fifth question, we surveyed the interviewees how they participated in politics and tried to influence it in addition to voting. Research has shown that the majority of respondents do not engage otherwise than in the elections (421 respondents). Other respondents actively participated in politics by signing a petition (112), attending a political or election meeting (66), or being a member of a precinct election commission (58 respondents). The lowest active participation in politics was seen in engagement with pressure groups (14) or in opinion polls (26 respondents). More in Graph 5.



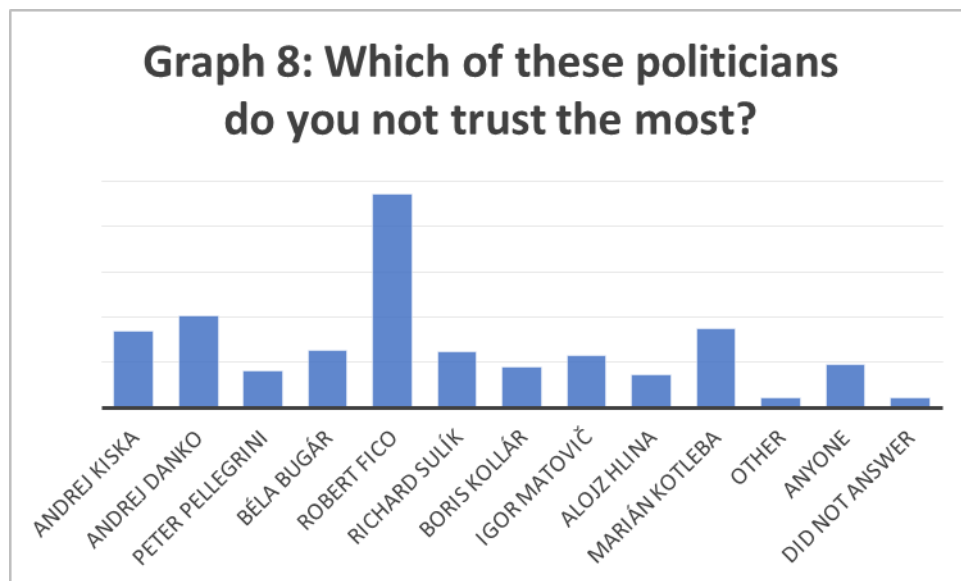
Research has shown that most respondents are certainly not, or rather, not satisfied with, the current state of the political scene. The opposite opinion was 11% (10% - earlier yes, 1% - definitely yes). A significant number of respondents could not comment on the question (17%) (See Graph 6).



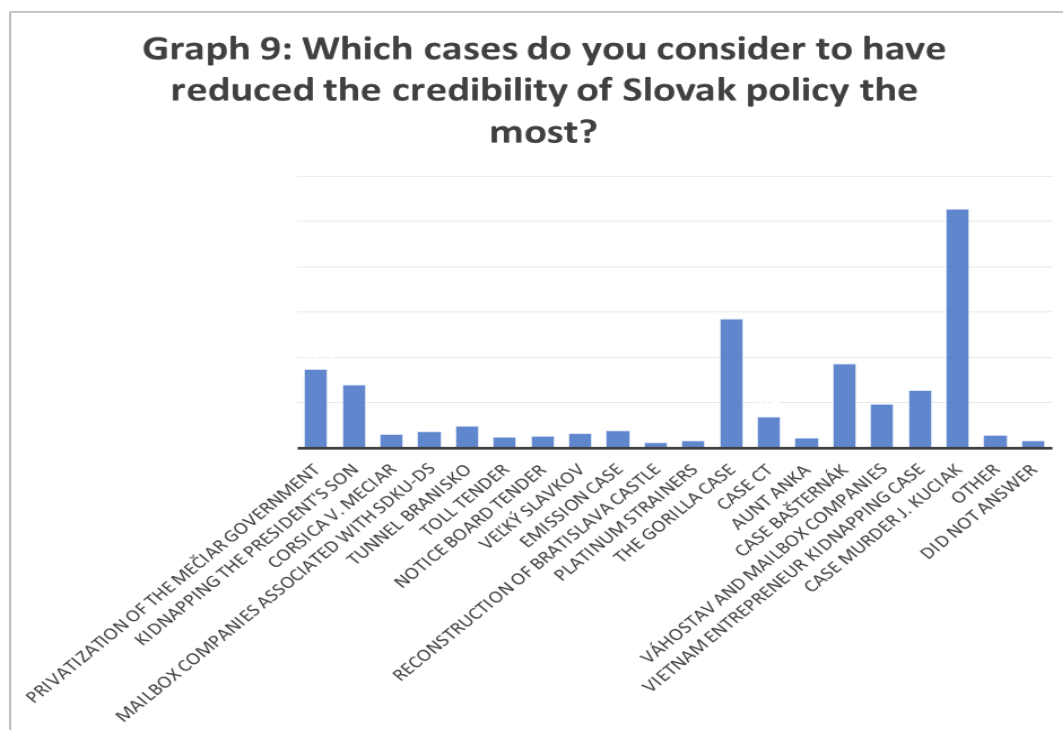
In the next question we found out which of the selected politicians the Slovaks trust most. The survey showed that the interviewees most trust the former President of the Slovak Republic Andrej Kiska (183 respondents), and subsequently nobody (121), while the former triple Prime Minister Robert Fico (112) came third. On the other hand, the interviewees have the least confidence in Bela Bugár (23), Alojz Hlina (24) and other politicians (24). Only one answer could be ticked on this question (See Graph 7).



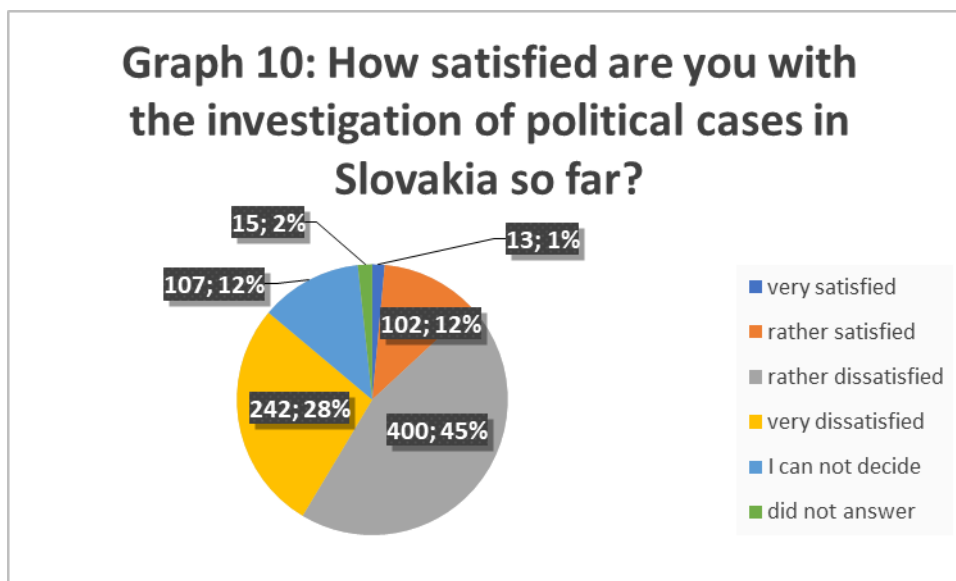
In the following question, on the contrary, we asked which of the selected politicians the Slovaks do not trust the most. Only one answer could be ticked on this question. The research showed that the interviewees do not trust the former three-time Prime Minister Robert Fico (235 respondents), the National Council chairman Andrej Danko (101 responses) and the chairman of ĽSNS Marián Kotleba (87 respondents) (See Graph 8).



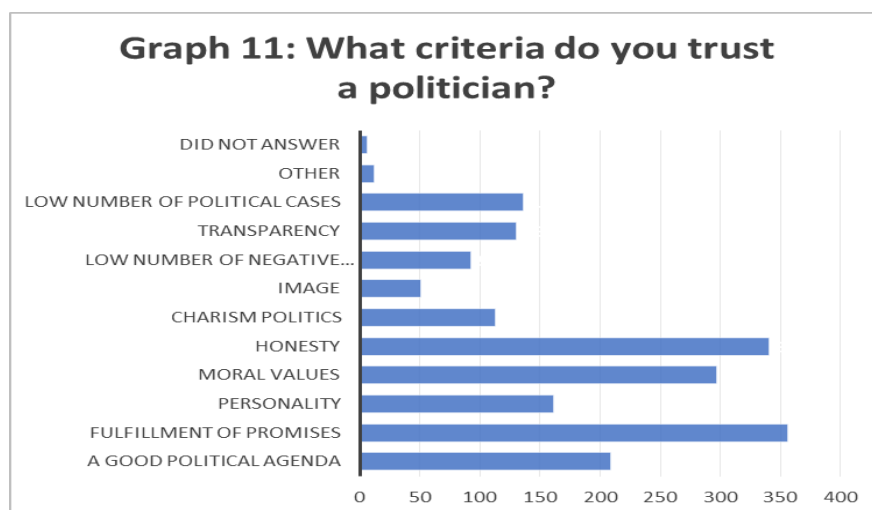
In the research we also found out which cases according to the interviewees most significantly reduced the credibility of Slovak policy. 3 cases could be ticked on this issue. Research has shown that the case that most harmed the credibility of politics in Slovakia was the case of the murder of J. Kuciak. Respondents ranked Gorilla (285 respondents) in second place and Bašternák (185 responses) in third place (See Graph 9).



Most of the addressed Slovaks (73%) are rather dissatisfied or very dissatisfied with the previous investigation of political cases in the Slovak Republic. 13% of respondents are of the opposite opinion who are very satisfied or satisfied with the current case investigation. The remaining respondents could not answer or did not want to comment (See Graph 10).

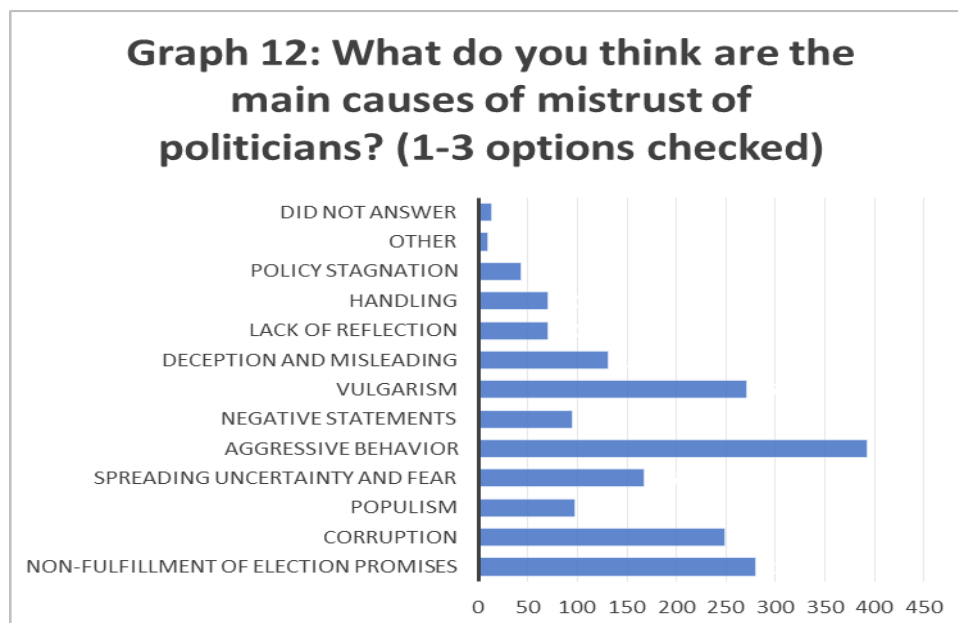


In the eleventh question we found out according to which criteria the Slovaks trust politicians. The research showed that the people trust Slovak politicians according to the criteria of fulfillment of promises (356 respondents), honesty (341 answers) and moral values (297 answers). On the contrary, the least important criteria for trusting politicians are different (12 responses), image (51 responses), low number of negative speeches (92 responses). Respondents could choose 1-3 answers. (See Graph 11)

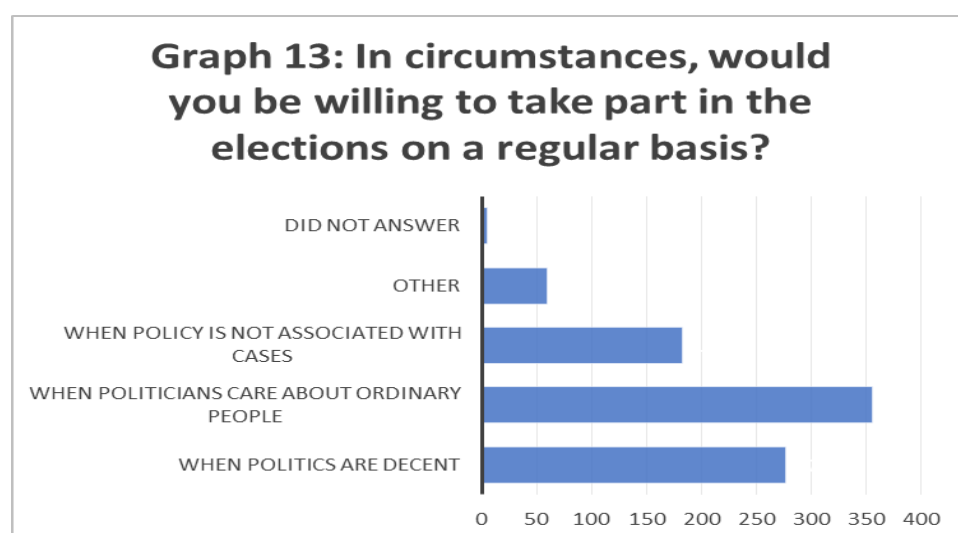


We also asked what the main causes of mistrust of politicians are. The research showed that according to the addressed Slovaks, the biggest causes of mistrust of politicians are aggressive behavior (393 respondents), non-

fulfillment of election promises (280 answers) and vulgarism (271 answers). On the other hand, according to the asked people, at least the distrust of politicians is due to other causes (9 respondents), manipulation (70 responses) and lack of reflection (70 responses). Respondents could choose 1-3 answers. (See Graph 12)



In the last thirteenth question, we found out under what circumstances Slovaks would be willing to participate in the elections on a regular basis. Most respondents would be willing to participate in the elections if politicians care about ordinary people (355 respondents). (See Chart 13).



Discussion

In the first research question, we thought that the Slovaks actively participate most in the parliamentary and presidential elections and vice versa in the elections to the European Parliament or the elections to the HTU. This statement was confirmed to us in part, as research has shown that Slovaks are most involved in parliamentary elections, municipal elections and presidential elections, with the least interest in elections to the European Parliament or in regional elections. It should be noted, however, that in the case of municipal and presidential elections, almost the same turnout was recorded, with a minimal difference between the participation in referendums and in the elections of the HTUs. For most of the addressed Slovaks, politics is not a priority in their lives, as only 20% of those surveyed are very interested in politics, the remaining respondents are partly, not at all, or almost not at all interested in politics. One third of Slovaks regularly vote as an elector, while another third of respondents sometimes vote. The research clearly showed that most Slovaks decide whether to vote on the basis of the political situation in the country. On the other hand, most respondents did not try to influence politics other than by participating in elections.

In the second research question, we thought that the most trusted politicians would be former President Andrej Kiska, Prime Minister Peter Pellegrini and Chairman Oľano Igor Matovič. On the other hand, the most untrustworthy politicians should be former triple Prime Minister Robert Fico, Chairman Marian Kotleba and chairman of the National Council of the Slovak Republic Andrej Danko. This statement has also been partially confirmed to us. The demanded Slovaks have the greatest confidence in the former President of the Slovak Republic Andrej Kiska, but subsequently in nobody, and the third place was taken by former Slovak Prime Minister Robert Fico. On the other hand, we confirmed that the Slovaks do not trust the former triple prime minister of the Slovak Republic Robert Fico, the chairman of the National Council Andrej Danko and the chairman of ĽSNS Marián Kotleba. The research also showed that most of the respondents are certainly not, or rather not, satisfied with the current state of the political scene. We also found out from the research that most of the addressed Slovaks are rather dissatisfied or very dissatisfied with the previous investigation of political cases in the Slovak Republic.

In the third research question, we argued that citizens would be more willing to participate in politics when politics was not linked to cases, and when large cases such as the Gorilla case or the Kuciak case were properly investigated and accountable to the culprits. This statement has not been confirmed to us, as citizens expect more honest politicians to deliver on promises than politics without a case. The demanded Slovaks consider the murder case of J. Kuciak, the case of Gorilla and the case of Baštrnák to be the biggest three cases that have reduced the credibility of Slovak politics. On the other hand, respondents would be willing to take part in the elections on a regular basis if ordinary people care about politicians or if there are decent people in politics. The main three causes of mistrust of politicians are aggressive behavior, non-fulfillment of electoral promises and vulgarism. The three most intensive criteria by which the citizens trust the politicians are the fulfillment of promises, honesty and moral values.

Conclusion

The sociological research of the public opinion of the citizens of the Slovak Republic shows the following points and conclusions:

Citizens of the Slovak Republic are not active in political participation. Most of the interviewed Slovaks did not try to influence politics other than by participating in elections, with only a third of those polled regularly participating in elections as voters. Most Slovaks opt for voting on the basis of the political situation in the country, most often taking part in parliamentary, municipal and presidential elections.

The research also showed that most of the Slovaks who were interviewed are not satisfied with the current state of the political scene in Slovakia, as well as with the current investigation of political cases. Addressed respondents most trust the former President of the Slovak Republic Andrej Kiska and, conversely, the least trust the former triple Prime Minister Robert Fico.

Based on the carried out research, we can say that respondents would be willing to participate in the elections on a regular basis if ordinary people care about politicians or if there are decent people in politics. Demanded citizens expect more honest politicians to deliver on promises than politicians without a case.

This study does not claim a comprehensive view of the analysis of public opinion of Slovaks on the issue of credibility of politicians in public opinion in the Slovak Republic.

This topic offers several additional processing options. First of all, it will be very interesting to analyze the public opinion of Slovaks on the issue of the credibility of politicians the year after this study, or in the longer term. It would also be interesting to compare the results of opinion polls in individual EU Member States.

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ASSESSMENT OF COMPETITIVENESS OF REGIONS OF THE REPUBLIC OF KAZAKHSTAN*

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Abstract. In modern science, there are a large number of techniques focused on the assessment of competitiveness through the analysis of certain resources in the region. However, accounting of human resources in such assessments is not used as a prior factor in identifying regional competitive advantages. Competitive advantages affect not only the efficiency of individual sectors of the economy but also the overall social and economic development of the country. Assessment of the competitiveness of the region should include one of the main parameters of the human resource development level. Therefore, the forecast for the competitiveness of the region should take into account the pace of human resources development. The methods used in Kazakhstan for assessing the competitiveness of a region considers only the assessment of human resources in its structure but do not take into account the level of their development over time, as well as the multi-factorial nature of their components. The work explains and analyzes rating model for assessing of the competitiveness of the regions of Kazakhstan (the National Chamber of Entrepreneurs of the Republic of Kazakhstan). The authors proposed a methodology for ranking the regions of Kazakhstan based on an assessment of the development of their human resources that affect the competitiveness of the region. It includes an analysis of demographic, labor and social and economic indicators reflecting the state of human resources.

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JEL Classifications: R11, O18, P48

1. Introduction

The different level of social and economic development of the regions depends on various factors (geographical, climatic, demographic, etc.). In economics, the relevant problem is the analysis of factors that affect the crisis of individual territories and the search for tools aimed at increasing their competitiveness in the national and international markets. Particularly, this issue is of urgent demand in developing countries (e.g. Orlova et al., 2018; Ragulina et al., 2018; Kiseľáková et al., 2018; Selivanova-Fyodorova et al., 2019).

Many studies of the Kazakhstani economy are of a formal nature since they consider the concept of underdeveloped regions, the factors responsible for the appearance of social and economic problems and the typical ways of solving them. The issues of assessing the competitiveness of regions, the search for competitive advantages of territories, especially by improving the quality of human resources, are not studied enough.

2. Theoretical discussion

The open type of Kazakhstan economy provides the interconnection and interdependence of regions because the commodity sector is the main sector that drives the economy. In regions, which are rich in natural resources, there is a slight economic recovery that resulting in the standard level of well-being of residents (Almerekov, et al., 2018). Reverse processes are observed in non-extractive areas with high population density and the availability of human resources. This generates a differentiation in the development of territorial units of the country.

The reason for the division of the economic space of Kazakhstan into separate regions is the presence of the large extent of territories and theirs heterogeneity. There are 16 territorial entities in the Republic, including 14 regions and 2 independent units: Astana and Almaty. In the framework of regional policy, they are divided into 6 groups. The basis of the grouping that originates from the Concept of regional policy of the Republic of Kazakhstan is the principle of difficulty.

This classification of regions is relevant in modern conditions. In Table 1 the analysis of indicators of social and economic development of the region of Kazakhstan is presented.

Table 1. The main social and economic indicators of the regions of Kazakhstan (according to data for 2017)

Regions share, percent	Group					
	I	II	III	IV	V	VI
In the total population	12	6	21	30	8	23
In GRP	27	17	21	16	7	12
In production	9	30	26	15	10	10
In the production of agriculture	1	2	20	30	18	29
In fixed investment	18	30	13	18	7	14

Source: Compiled by the author based on data from the Committee on Statistics of the MNE RK

The first group includes Almaty city and Nur-Sultan city (Astana) which are the largest financial, economic and social centers. Their distinctive characteristics are a high level of human resources, a stable level of citizens' well-being, a developed industrial sector and the availability of scientific and technical potential. Their regional policy provides the comprehensive expansion of infrastructure, the formation of business centers and the development of tourist destinations.

The second group includes 2 areas which are rich in mineral resources - Atyrau and Mangystau. The standard of living of their inhabitants is the highest in the Republic of Kazakhstan.

The third group is represented by 3 regions: Karaganda, East Kazakhstan, and Pavlodar. They are distinguished by the wealth of mineral resources. The real sector of the economy of these regions is dominated by light industry and engineering and by the mining and manufacturing industries which are based on local raw materials. Regional policies in of the regions of the second and third group are focused on the development of transport and communications, increasing the share of small and medium-sized businesses in the agro-industrial sector, developing programs for industrial-innovative development of the manufacturing industry. Environmental protection is a separate area of regional policy, dedicated to the territories rich in raw materials, especially for those that are in the Caspian Sea shelf zone.

The fourth group included Kostanay, Aktobe, Zhambyl and South Kazakhstan regions. The common characteristics of these territories are the availability of mineral resources and agricultural land. The level of human resources development and their average per capita income is lower than in developed regions. The key direction of the regional policy is the development of transport and processing directions in agriculture, the expansion of the potential of large economic entities.

The fifth group includes North Kazakhstan and West Kazakhstan regions. Mechanical engineering and agriculture predominate in the structure of their real sector of the economy. The oil and gas industry is one of the weak sectors of the regions. The regional policy provides for the modernization of engineering and defense industry, the development of areas related to agriculture.

The sixth group includes Almaty, Akmola and Kyzylorda regions. The main field of activity of the regions is connected with the development of agriculture. In terms of human resources and per capita income, these regions lag behind the cities of Almaty and Nur-Sultan (Astana), and regions of the second and third group. The exception is Kyzylorda region (oil field development zone). The main directions of regional policy are focused on the development of entrepreneurship that provides services for agriculture and on the expansion of new industrial productions. These activities will give a chance to improve the well-being of residents.

Increasing competitiveness in regional policy is based on the economic development of each of the 16 regions. This provision is enshrined in the Forecast scheme of territorial and spatial development of the country until 2020.

3. Research results and discussion

The rating model for assessing the competitiveness of the regions of Kazakhstan that is based on indices was developed by the Agency for the Study of Return on Investment operating under the National Chamber of Entrepreneurs of the Republic of Kazakhstan (Competitiveness of the regions of Kazakhstan, 2018). An index approach is the foundation of this rating (Aubakirova, 2019). The integrated competitiveness index is calculated by summing the weighted average for each group of indicators.

During the determination of the components of the region's competitiveness indices, adequate indicators are chosen that reflect the competitive advantages and innovativeness of the economy. They must be statistically reliable and objective (the subjective opinion of the researcher in the interpretation should be reduced to zero). When selecting indicators, the availability of statistics is taken into account.

The competitiveness rating strategy is used as a basis for calculating indices. It provides for the accumulation of private indicators in a single integrated value, characterizing the relative positions of the studied criteria. Scaling is used to organize indicators that are measured in different units. It envisages their conversion into immeasurable values from 0 to 1 (0 indicates the worst result, 1 is the best). Scaling is based on formulas (1) and (2).

$$(1) K_n^i = K_n^i = \frac{Y_n^i - Y_{\min}}{Y_{\max} - Y_{\min}}$$

$$(2) K_n^i = \frac{1 - Y_n^i - Y_{\min}}{Y_{\max} - Y_{\min}}$$

where,

Y_n^i – n -th indicator of the region i ;

Y_{\min} – the minimum value of the indicator for all regions of the sample;

Y_{\max} – the maximum value of the indicator for all regions.

Formula (1) is used if the maximum value corresponds to the best result. Otherwise, apply the formula (2). Let us determine the arithmetic average of indices necessary for the calculation of the integrated coefficient (3).

$$(3) K_{\text{arithmetic average}} = \sum_{n=1}^m K_n^i$$

The result is transformed by the formula (4):

$$(4) K_{\text{arithmetic average}} = \frac{K_{\text{arithmetic average}, n}^i - K_{\text{arithmetic average}, \min}^i}{K_{\text{arithmetic average}, \max}^i - K_{\text{arithmetic average}, \min}^i}$$

This transformation is necessary for scaling indicators in the range [0; 1]. Thus, the best value of the indicator will be assigned 1 in the study, the worst - 0. Other regions will be located in the taken range.

Transformations made it possible to rank the regions of the Republic of Kazakhstan by a general indicator of competitiveness and by private indices, which evaluate a particular sphere.

According to the level of development of competitiveness, 3 groups can be identified:

1. Absolute competitiveness. The coefficient takes a value in the range from 0.66 to 1.
2. Stable competitiveness. The index ranges from 0.33 to 0.65.
3. Minor competitiveness. The index takes a value from 0 to 0.32.

The first group included Almaty city, Nur-Sultan city (Astana) and Atyrau region. The third group is represented by Almaty, Zhambyland Kyzylorda regions (Fig.1).

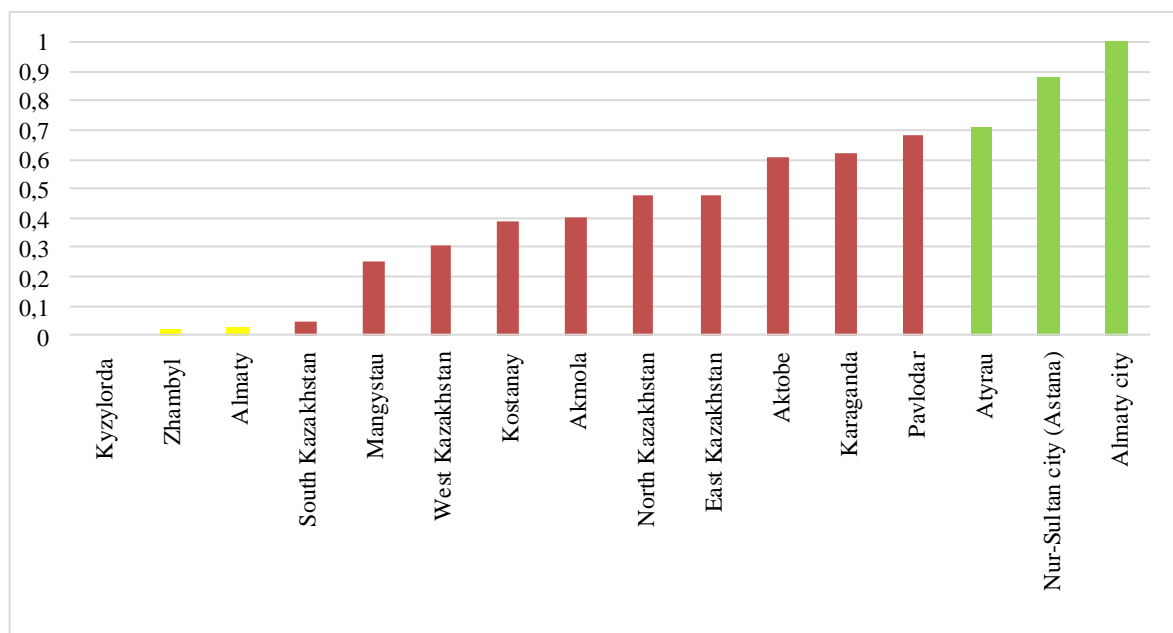


Fig. 1. Regional Competitiveness Index in 2017

Source: Compiled by the author according to the National Chamber of Entrepreneurs of the Republic of Kazakhstan

According to the methodology of the above-mentioned Investment Return Research Agency operating under the National Chamber of Entrepreneurs of the Republic of Kazakhstan, the region's competitiveness index is made up of the following indicators (Table 2).

Table 2. Key indicators of the competitiveness index of the regions of Kazakhstan (according to data for 2017)

Region	GRP, billion euros	Investments in fixed assets, billion euros	Human Development Index	Industrial output, billion euros	The number of small businesses, units
Akmola	2,81	0,28	0,5	1,06	8994
Aktobe	5,73	0,32	0,1	4,04	13972
Almaty	6,09	1,73	0,5	2,01	14101
Atyrau	14,7	1,65	0,6	1,39	8745
West Kazakhstan	5,78	1,03	0,3	4,85	8670
Zhambyl	3,34	0,41	0,1	0,95	7675
Karaganda	10,7	2,1	0,3	5,87	21780

Kostanay	4,52	0,98	0,2	1,93	10345
Kyzylorda	3,60	0,61	0,3	1,85	6609
Mangystau	8,29	1,76	0,1	5,86	11286
South Kazakhstan	7,88	1,05	0,2	2,2	24300
East Kazakhstan	7,83	1,33	0,2	4,5	18720
Nur-Sultan city (Astana)	14,2	2,4	0,7	1,45	49450
Almaty city	29,23	1,3	0,8	2,28	99325
Pavlodar	5,92	2,7	0,4	4,5	43316
North Kazakhstan	2,75	0,48	0,3	0,61	37340

Source: Compiled by the author according to the National Chamber of Entrepreneurs of the Republic of Kazakhstan

The maximum value of the competitiveness index is observed in Nur-Sultan city (Astana), Almaty city and Atyrau region. However, the level of human resources development in the Atyrau region is not high in comparison with the other two.

According to these indicators, the most competitive regions are Nur-Sultan city (Astana), Almaty city and Atyrau region. They are distinguished by high rates of GRP per capita, investments in fixed assets, the number of small businesses, and a high level of human resources development.

Regions with stable competitiveness include Aktobe, East Kazakhstan, North Kazakhstan, Akmola and Kostanay regions. The common characteristics of these regions are developed energy infrastructure.

The regions located in the south of Kazakhstan are less competitive. They are South Kazakhstan, Kyzylorda, Zhambyl, Mangystau, Almaty and West Kazakhstan regions. But at the same time, the latter region shows an above average human development index in comparison with other regions of this list.

Often economists point out that in order to increase the competitiveness of a developing country, it is necessary to create clusters based on the available resources of the regions (Neethling, 2017; Radjenovic, 2017; Камалова, 2016; Hennig, 2015). However, between the social and economic development of individual territorial units, there are serious imbalances. 37.5% of regions have low competitiveness. None of them could show a high level of productivity, even regions with a high level of human resources development (Sagimbekov, et.al., 2014).

Another significant study on the assessment of the competitiveness of the regions of Kazakhstan was conducted by the “SANDZH” Research and Development Center for the Regional Development Department of the MNE of Kazakhstan. The regions were ranked according to key statistical indicators for the period of 2013 and 2017. This made possible to determine the competitive advantages of each territorial unit and zone of possible growth and development. The analysis is based on indicators that are available on the Committee on Statistics of the MNE RK.

The methodological base is represented by 19 indicators grouped into 3 categories: economic, social and investments in education and health care. The latter, as we justified in the first section of this work, is the basis for the development of human resources. To illustrate the results in the same units of measurement, they are accounted for in percentage or in proportion. The alignment of regions in accordance with the obtained values allows determining their problems in comparison with other territories. The interpretation of results is the next:

1 - 6 place — regions with good competitiveness. Intervention by the executive is not required.

7 - 10 place — regions with stable competitiveness. The executive branch controls its social and economic development and implements targeted measures to improve efficiency in certain sectors of the economy.

11 - 16 place— regions with low competitiveness. Regular government intervention is required to improve the effectiveness of regional policies.

In the study, the regions were ranked into the following groups (table 3.):

1. Leader: Nur-Sultan city (Astana), Almaty city, Atyrau, Pavlodar, Aktobe and Mangistau regions. Their rank in the rating is from 1 to 6 places respectively.
2. Middle: Almaty, West Kazakhstan, Karaganda, Kyzylorda regions. Their place in the ranking is from 7 to 10 inclusively.
3. Outsider: East Kazakhstan, North Kazakhstan, Kostanay, Akmola, South Kazakhstan, Zhambyl regions (from 11 to 16 places).

Table 3. Ranking of the regions of Republic of Kazakhstan

Region	The final place in the rating	Place in the ranking of economic development	Place in social development rating	Place in the ranking of investments in education and health
Nur-Sultan city (Astana)	1	5	1	1
Atyrau	2	1	4	4
Almaty city	3	3	7	2
Aktobe	4	2	9	3
Mangystau	5	4	2	5
Pavlodar	6	6	11	7
West Kazakhstan	7	8	10	7
Karaganda	8	10	12	6
Almaty	9	11	3	14
Kyzylorda	10	14	6	12
East Kazakhstan	11	7	16	10
Kostanay	12	9	15	9
North Kazakhstan	13	13	13	11
Akmola	14	12	14	13
South Kazakhstan	15	15	5	16
Zhambyl	16	16	7	15

Source: Compiled by the author according to SIC “SANDZH”

As a result, the ranking showed that a high level of investment in education and health care, as the main directions of human resources development, is characteristic of the regions that occupy the first places in the final competitiveness rating. The analysis allows for identifying strengths and weaknesses. For example, Nur-Sultan city (Astana), not being a region of the extractive industry, is in the fifth place in the rating of economic development, that is because of the indicator of innovative development and an effective non-productive sector of the economy.

Almaty city is characterized by social problems such as a high level of crime and high prices for the grocery basket. The cause of the first problem is the presence of a large number of migrants (a large city in the border area). The second is the result of an excess of demand for goods and services over supply (caused by residents' incomes above average). Nevertheless, in Almaty city, the growing investment in education, a high level of literacy and life expectancy is above average, and such trend allowed the city of republican significance to come out on top in the final ranking.

Atyrau and Mangystau regions included in the TOP 5 of the ranking, also have a number of problems. Basically, they are connected with the raw material production orientation of the regional economy. They are characterized by low indices of the volume of the industry per person and high prices.

The lowest level of investment in education and health care is in the South Kazakhstan and Zhambyl regions. Also, these regions took the last places in the final competitiveness rating.

South Kazakhstan region occupies 15th place in the final ranking. However, according to the integrated social indicator, the region is in the list of top 5, which is due to the low level of mortality from cancer and positive population growth.

Zhambyl region is in the last place. The reason for it, apart from the problems of education and health, is the low level of well-being of residents, and problems in the economic development of the region. In terms of crime, it ranks 7th place.

In addition to the research of “SANDZH” Research and Development Center, we used the scale of variation for assessing differences between macroeconomic indicators. It is characterized by a significant error, the maximum and minimum value of the indicator may differ significantly from other values. But in the result, it illustrates the most complete representation of regional heterogeneity. Table 4 demonstrates an indicator of the magnitude of variation by region with the largest gap.

Table 4. The scale of variation for the most significant indicators of the development of the regions of Kazakhstan (for example, individual regions for 2017)

GRP per capita, €						
Maximum value	Atyrau	6878,2	Atyrau	6878,22	Almaty city	12526,9
Minimum value	Zhambyl	338,49	South Kazakhstan	670,71	North Kazakhstan	2425,5
The ratio		20,3		10,2		5,2
Nominal wages (on average per month), €						
Maximum value	Atyrau	449	Atyrau	449	Almaty city	565,9
Minimum value	Zhambyl	189	South Kazakhstan	225,6	North Kazakhstan	35,4
The ratio		2,37		1,99		15,9
Nominal income of citizens, €						
Maximum value	Atyrau	249,4	Atyrau	249,4	Almaty city	343,2
Minimum value	Zhambyl	93,1	South Kazakhstan	73,1	North Kazakhstan	62,5
The ratio		2,7		3,4		5,5
Investments in education, thousand. €						
Maximum value	Atyrau	1058,4	Atyrau	1058,4	Almaty city	1716
Minimum value	Zhambyl	465,5	South Kazakhstan	365	North Kazakhstan	375
The ratio		2,27		2,9		4,57
Investments in healthcare, thousand. €						
Maximum value	Atyrau	1356	Atyrau	1356	Almaty city	2200
Minimum value	Zhambyl	666	South Kazakhstan	894	North Kazakhstan	660
The ratio		2,4		1,6		3,3

Source: Compiled by the author according to the Committee on Statistics of the MNE RK

The directions of regional policy are determined by the chosen development scenario. Many researchers agree that in the context of the modernization of the economy, structural policy is an effective tool.

Conclusion

Despite a large amount of research (Eraydin, 2015; Klaster, 2017; Jakobsen, 2017), there is no agreed definition of the term “regional structural policy”. In a broad sense, its meaning is accepted as an instrument of influence of the executive authorities of a territorial unit on all structural elements of the economic system (Brimbetova, 2011). The regional structural policy is subdivided into subtypes (innovation, investment, etc.), one of which should be a policy on the development of human resources in order to increase the competitiveness of the region (Zhunuskanov, 2017).

A high level of competitiveness of a region cannot be achieved without the development of human resources and their rational use. The latter is necessary for lagging regions since they have a number of serious problems:

- imbalance between supply and demand for human resources;
- lack of financial and material resources to implement human resource development strategies;
- the lag of human resources development from the requirements of an innovative economy;
- the discrepancy between plans to accelerate the development of human resources and the pace of sustainable development.

Thus, the assessment of the competitiveness of the region should include one of the main parameters of the level of human resource development. Therefore, the prognostic assessment of the competitiveness of a region should be focused on the pace of human resource development. The methods used in Kazakhstan for assessing the competitiveness of a region provide for the assessment of human resources in structural level but do not take into account their level of development over time.

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**Publisher**<http://jssidoi.org/esc/home>**STRATEGIC COMMUNICATION FOR WOMEN ENTREPRENEURS: A CASE STUDY OF INDIA*****Maharaja Thandabhani**

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Abstract. Small and Medium Enterprises (SMEs) play a significant role in all economies and are key agents of employment, innovation and growth. Strategic communication is something different from normal communication as it involves with certain intelligent way of communicating the clients and counter parts. The implications of future of small industries, globalization, performance, perspectives and challenges would insist on prompt and prudent way of communicating and are to be confronted by women entrepreneurs. To crack the challenges and overcome the negative impacts of communication successfully, strategic communication becomes a vital part of business and entrepreneurs should familiarize such type of business communication for better decision-making in all functional areas of business. If information asymmetry exists, clients may respond by negatively leading to miscommunication or misinterpretation which will have bad effects on organization and business negotiations. The concept and source of communication should be adapted to have more clarity and transparency to make the receiver understand the information and message so as to make him/her respond appropriately. The consequence of inappropriate communication, or weak communication would exhaust the time and energy of the receiver leading to refusal of the clients or business partners. The fact is that most of the entrepreneurs from small and medium industries in India have not developed adequate expertise in strategic communication which may create setbacks in their business performances. This article analyses the profiles of the SME women entrepreneurs and their perception and expectation on strategic communication and their strategic communication components which are analyzed to derive the results.

Keywords: strategic communication; women entrepreneurs; communication components; small medium enterprises

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JEL Classifications: L26, L63, L96

1. Introduction

Small and Medium enterprises play a significant role in all economies and are key agents of employment, innovation and growth. Small and medium firms play a key role in transition of the developing countries. These firms typically account for more than 90% of all firms outside the agricultural sector, constitute a major source of employment and generate significant domestic and export earnings. As such, women SME development emerges as a key instrument in the small and medium enterprises and economic development of our nation.

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Communication is necessary at every stage of a business life cycle. It is required to help women SMEs set up and expand their operations, and to develop new products. India has a well developed communication system, comprising Social media, mobile networks, supply chain operators, logistics companies, banks and financial institutions, courier services, ICT companies and other corporate companies. The growing significance of Small and Medium Enterprises (SMEs) for employment and income generation, and the development of women entrepreneurs have led various businesses and international organizations to support their development and expansion (e.g. Morris et al., 2002; Argenti, 2003; Bala Subrahmanya, 2004; UNCTAD 2014; Iacob, Hristache, 2017; Akhter, 2017; Jimenez–Marin et al. 2018; Njaramba et al., 2018; Prodani et al. 2019; Benešová, Hušek, 2019).

2. Communication for women entrepreneurs

One of the major challenges faced by the women SMEs is access to timely and strategic communication. Access on a global basis to modern communication technology is possible for the women entrepreneurs like their male counterparts. When it comes for communicating strategically, there lies the question how far the women entrepreneurs could communicate strategically in every business situation to become successful. Their capability in communicating strategically has become the most critical determinant of international competitiveness.

The international business situation demands the need for strategic communication of women SMEs to be internationally competitive in terms of quality, delivery, after-sales service, price, etc. Strategic communication would be a prerequisite in all areas of business to bring about transformation in the business. The problem is that the availability of adequate communication skills to act upon the entrepreneurial positions and to strike a balance between the business requirement and the strategies to be applied through effective communication becomes critical for Indian women entrepreneurs.

3. Objective

The article has the following objectives.

1. To identify and analyze the association between the profile of the Women SME entrepreneurs and their perception of communication on various factors of their business footings.
2. To examine the level of expectation on various factors in strategic communication among the women SME entrepreneurs and its association with their profile.
3. To ascertain the effectiveness of communication over the perception and expectation of women SME entrepreneurs.

4. Method

In this paper, the descriptive, empirical research and related research designs have been administered. This study analyzes the expectation and perception on strategic communication among the Women SME entrepreneurs of Coimbatore district, Tamil Nadu state in India. With that their profiles have been analyzed by applying Correlation.

Systematic sampling technique has been used in this study. A sample size of 435 women SME entrepreneurs was finally filtered to 172 SME women entrepreneurs and contacted directly to get their responses through interview method. Seven such communication components namely Completeness, Courtesy, Correctness, Clarity, Consideration, Conciseness and Creativity have been identified and applied in this study. These strategic communication components and their relationship with the selected profile of the women SME entrepreneurship were analyzed and results, discussion and conclusion were made.

A questionnaire was administered among the women SME entrepreneurs in order to get their responses. The responses were analyzed and tabulated to derive the results and discussion.

5. Analysis

Degree of relationship between selected profiles of the women entrepreneurs and their level of perception on strategic communication and its components

The relationship between the selected profiles of the women entrepreneurs and their level of perception on strategic communication is found by using correlation analysis.

Table 1. Degree of relationship between selected profiles of the women entrepreneurs and their perception on completeness

No.	Independent variables	'r' value	'p' value
1.	Age	-0.436	0.000*
2.	Educational Qualification	-0.690	0.000*
3.	Working Experience	-0.238	0.000*
4.	Number of employees working in the company	0.247	0.000*
5.	Annual Turnover	-0.036	0.457 ^{NS}

Note: * - Significant at 1% level; NS – Not Significant

It is noted from the table 1 and figure 1 that among the five selected profiles of the women entrepreneurs, only one factor viz. number of employees working in the company have positive correlation with the perception on completeness.

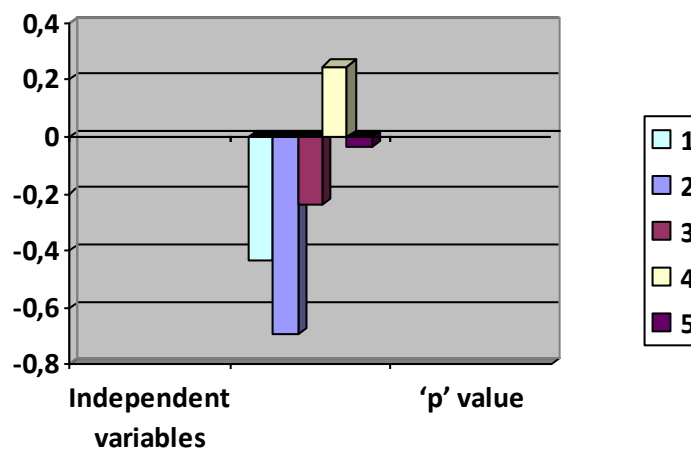


Fig. 1. Completeness

Source: Table 1

Table 2. Degree of relationship between selected profiles of the women entrepreneurs and their perception on courtesy

No.	Independent variables	'r' value	'p' value
1.	Age	0.545	0.000*
2.	Educational Qualification	0.000	0.996 ^{NS}
3.	Working Experience	0.403	0.000*
4.	Number of employees working in the company	-0.360	0.000*
5.	Annual Turnover	-0.094	0.049**

Note: * - Significant at 1% level; ** - Significant at 5% level; NS – Not Significant

It is divulged from the table 2 and figure 2 that among the five selected profiles of women entrepreneurs, two factors viz. age and working experience have positive correlation with the perception on courtesy.

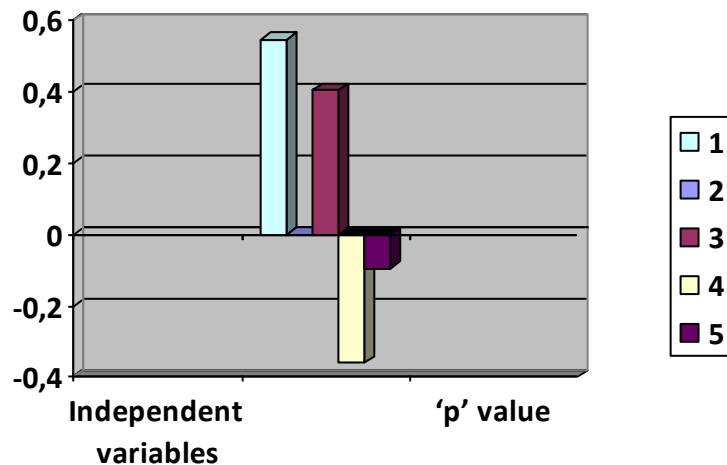


Fig. 2. Courtesy
Source: Table 2

Table 3. Degree of relationship between selected profiles of the women entrepreneurs and their perception on correctness

No.	Independent variables	'r' value	'p' value
1.	Age	-0.427	0.000*
2.	Educational Qualification	-0.059	0.219 ^{NS}
3.	Working Experience	0.338	0.000*

No.	Independent variables	'r' value	'p' value
4.	Number of employees working in the company	-0.574	0.000*
5.	Annual Turnover	-0.024	0.612 ^{NS}

Note: * - Significant at 1% level; NS – Not Significant

It is observed from table 3 and figure 3 that among the five selected profiles of the women entrepreneurs, only one factor viz. working experience has positive correlation with perception on correctness.

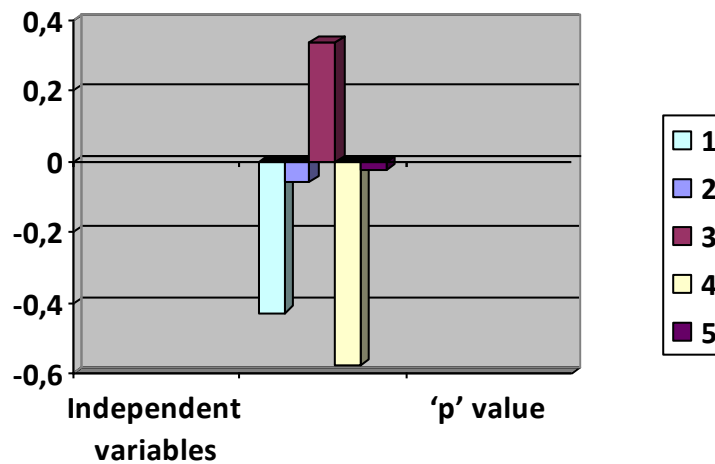


Fig. 3. Correctness

Source: Table 3

Table 4. Degree of relationship between selected profiles of the women entrepreneurs and their perception on clarity

No.	Independent variables	'r' value	'p' value
1.	Age	0.464	0.000*
2.	Educational Qualification	0.354	0.000*
3.	Working Experience	-0.206	0.000*
4.	Number of employees working in the company	-0.116	0.015**
5.	Annual Turnover	-0.025	0.607 ^{NS}

Note: * - Significant at 1% level; ** - Significant at 5% level; NS – Not Significant

It is observed from the table 4 and figure 4 that among the five selected profile of the women entrepreneurs, two factors viz. age and educational qualification have positive correlation with the perception on clarity.

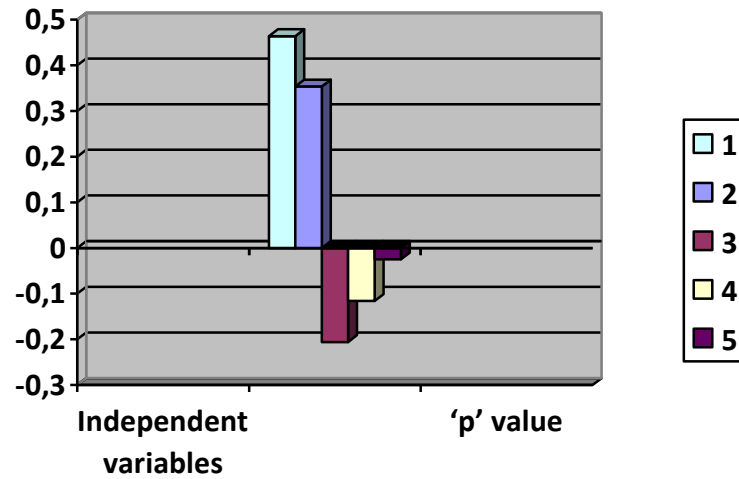


Fig. 4. Clarity
Source: Table 4

Table 5. Degree of relationship between selected profiles of the Women entrepreneurs and their perception on consideration

No.	Independent variables	'r' value	'p' value
1.	Age	-0.037	0.437 ^{NS}
2.	Educational Qualification	-0.564	0.000*
3.	Working Experience	0.321	0.000*
4.	Number of employees working in the company	0.018	0.714 ^{NS}
5.	Annual Turnover	-0.290	0.000*

Note: * - Significant at 1% level; NS – Not Significant

It is inferred from the table 5 and figure 5 that among the five selected profiles of the Women entrepreneurs, only one factor viz. working experience have positive correlation with the perception on consideration.

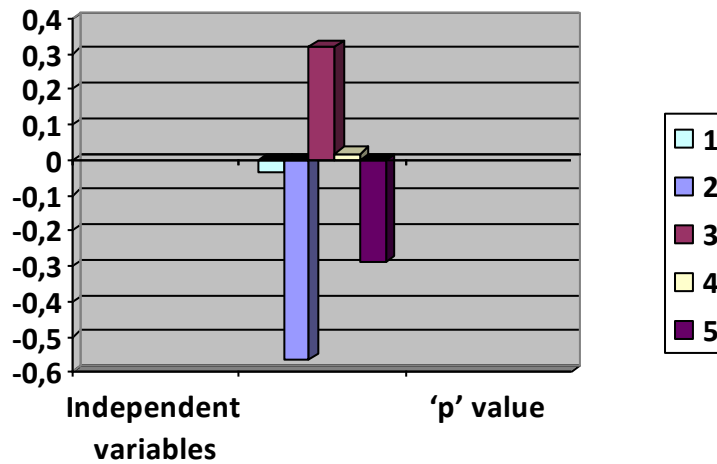


Fig. 5. Consideration
Source: Table 5

Table 6. Degree of relationship between selected profiles of the women entrepreneurs and their perception on conciseness

No.	Independent variables	'r' value	'p' value
1.	Age	-0.010	0.840 ^{NS}
2.	Educational Qualification	-0.017	0.718 ^{NS}
3.	Working Experience	0.408	0.000*
4.	Number of employees working in the company	-0.301	0.000*
5.	Annual Turnover	0.523	0.000*

Note: * - Significant at 1% level; NS – Not Significant

It is inferred from the table 6 and figure 6 that all the five selected profiles of the Women entrepreneurs, two factors viz. working experience and annual turnover have positive correlation with the perception on conciseness.

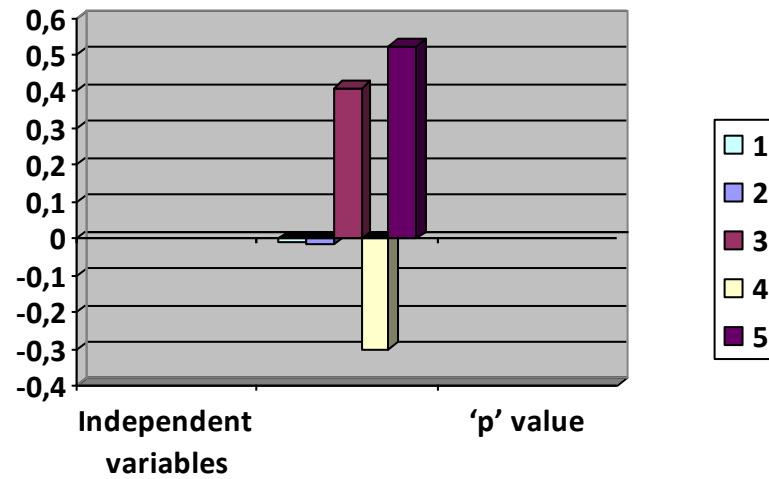


Fig. 6. Conciseness

Source: Table 6

Table 7. Degree of relationship between selected profiles of the Women entrepreneurs and their perception on creativity

No.	Independent variables	'r' value	'p' value
1.	Age	-0.133	0.005*
2.	Educational Qualification	-0.083	0.085 ^{NS}
3.	Working Experience	0.166	0.001*
4.	Number of employees working in the company	0.047	0.331 ^{NS}
5.	Annual Turnover	0.344	0.000*

Note: * - Significant at 1% level; NS – Not Significant

It is noted from the table 7 and figure 7 that among the five selected profiles of the women entrepreneurs, two factor viz. working experience and annual turnover have positive correlation with the perception on creativity.

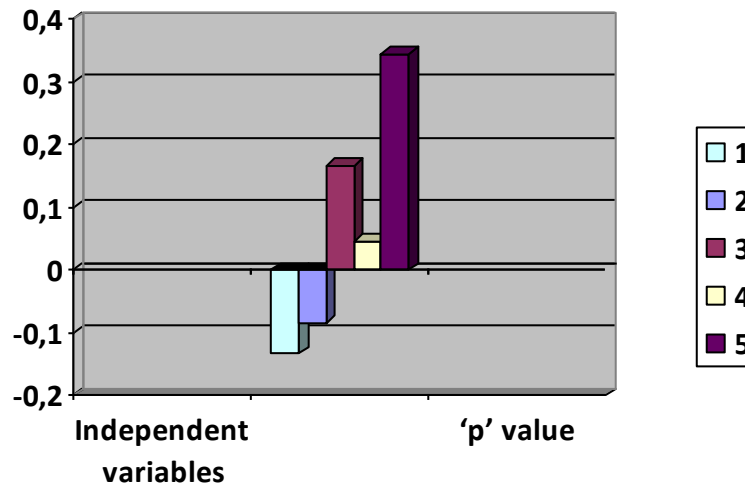


Fig.7. Creativity
Source: Table 7

Degree of relationship between selected profiles of the women entrepreneurs and their expectation on strategic communication

The relationship between the profiles of the women entrepreneurs and the expectation on strategic communication components is found by using correlation analysis. The independent variables are namely age, educational qualification, working experience, number of employees working in the company and annual turnover.

Table 8. Degree of relationship between selected profiles of the women entrepreneurs and their expectation on completeness

No.	Independent variables	'r' value	'p' value
1.	Age	0.356	0.000*
2.	Educational Qualification	0.084	0.080 ^{NS}
3.	Working Experience	0.121	0.012**
4.	Number of employees working in the company	0.339	0.000*
5.	Annual Turnover	0.229	0.000*

Note: * - Significant at 1% level; ** - Significant at 5% level; NS – Not Significant

It is inferred from the table 8 and figure 8 that among the five selected profiles of the women entrepreneurs, four factors viz. age, working experience, number of employees working in the company and annual turnover have positive correlation with the expectation on completeness.

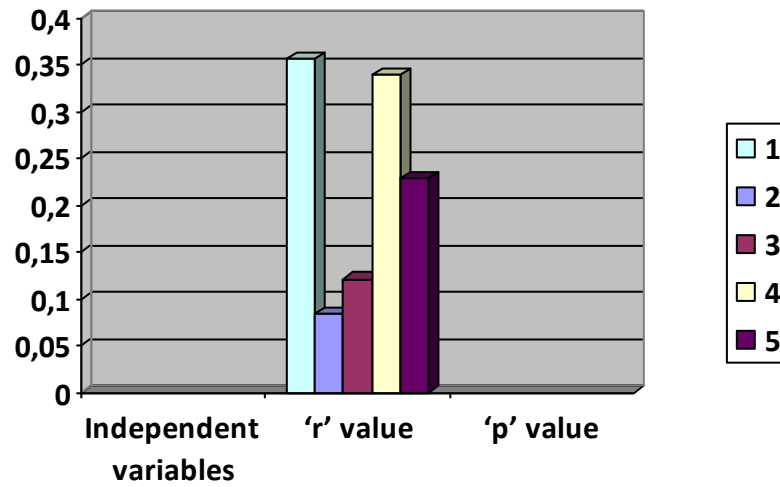


Fig. 8. Completeness
Source: Table 8

Table 9. Degree of relationship between selected profiles of the women entrepreneurs and their expectation on courtesy

No.	Independent variables	'r' value	'p' value
1.	Age	-0.039	0.412 ^{NS}
2.	Educational Qualification	0.220	0.000*
3.	Working Experience	0.229	0.000*
4.	Number of employees working in the company	0.176	0.000*
5.	Annual Turnover	0.281	0.000*

Note: * - Significant at 1% level; NS – Not Significant

It can be revealed from the table 9 and figure 9 that among the five selected profiles of the women entrepreneurs, four factors viz. educational qualification, working experience, number of employees working in the company and annual turnover have positive correlation with the expectation on courtesy.

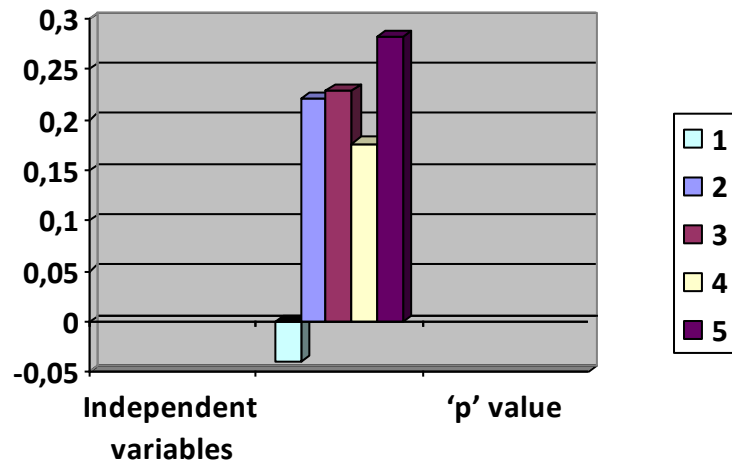


Fig. 9. Courtesy
Source: Table 9

Table 10. Degree of relationship between selected profiles of the women entrepreneurs and their expectation on correctness

No.	Independent variables	'r' value	'p' value
1.	Age	-0.124	0.010*
2.	Educational Qualification	0.031	0.513 ^{NS}
3.	Working Experience	0.278	0.000*
4.	Number of employees working in the company	0.277	0.000*
5.	Annual Turnover	-0.122	0.011**

Note: * - Significant at 1% level; ** - Significant at 5% level; NS – Not Significant

It is noted from the table 10 and figure 10 that among the five selected profiles of the women entrepreneurs, two factors viz. working experience and number of employees working in the company have positive correlation with the expectation on correctness.

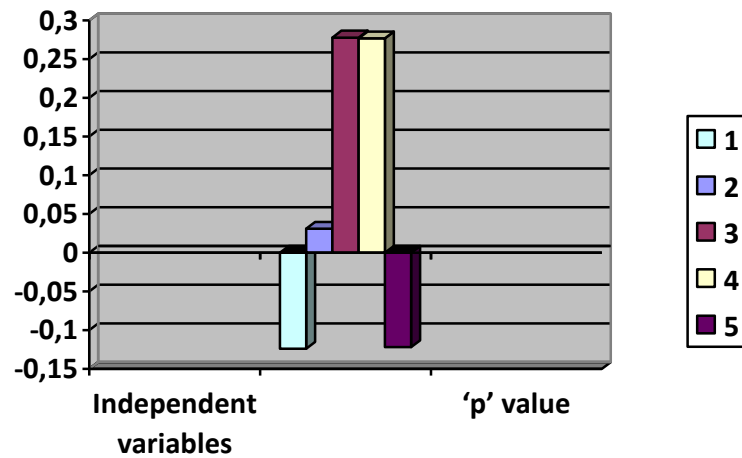


Fig.10. Correctness

Source: Table 10

Table 11. Degree of relationship between selected profiles of the women entrepreneurs and their expectation on clarity

No.	Independent variables	'r' value	'p' value
1.	Age	0.510	0.000*
2.	Educational Qualification	0.120	0.012**
3.	Working Experience	-0.041	0.397 ^{NS}
4.	Number of employees working in the company	0.445	0.000*
5.	Annual Turnover	0.345	0.000*

Note: * - Significant at 1% level; ** - Significant at 5% level; NS – Not Significant

It is observed from the table 11 and figure 11 that among the five selected profiles of the women entrepreneurs, four factors viz. age, educational qualification, number of employees working in the company and annual turnover have positive correlation with the expectation on clarity.

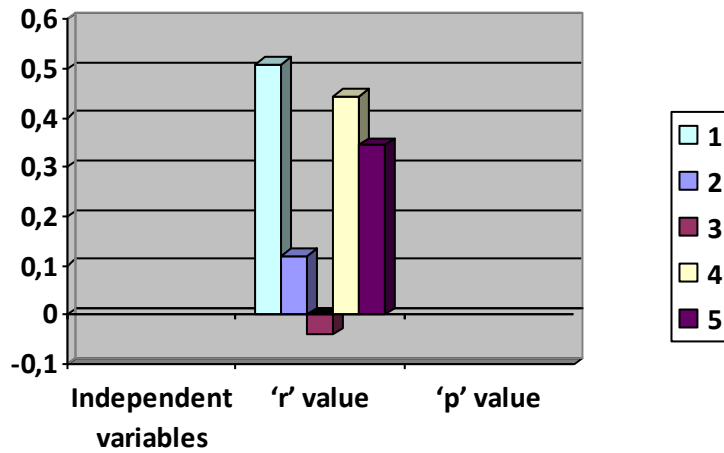


Fig. 11. Clarity
Source: Table 11

Table 12. Degree of relationship between selected profiles of the women entrepreneurs and their expectation on consideration

No.	Independent variables	'r' value	'p' value
1.	Age	-0.008	0.863 ^{NS}
2.	Educational Qualification	0.330	0.000*
3.	Working Experience	-0.084	0.082 ^{NS}
4.	Number of employees working in the company	0.418	0.000*
5.	Annual Turnover	0.352	0.000*

Note: * - Significant at 1% level; NS – Not Significant

It is divulged from the table 12 and figure 12 that among the five selected profiles of the women entrepreneurs, three factors viz. educational qualification, number of employees working in the company and annual turnover have positive correlation with the expectation on consideration.

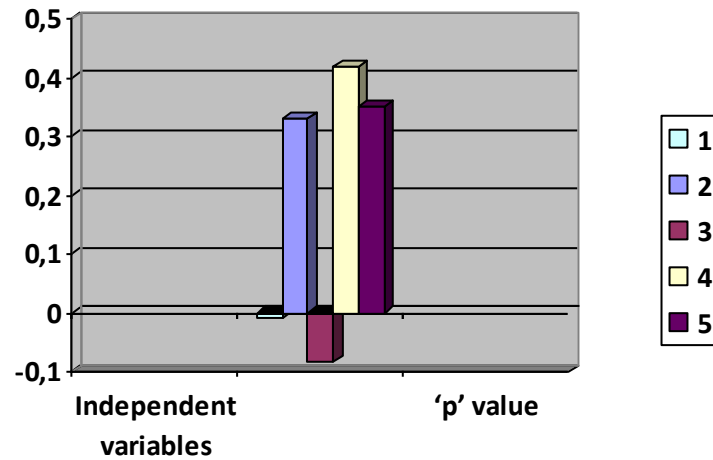


Fig.12. Consideration
Source: Table 12

Table 13. Degree of relationship between selected profiles of the women entrepreneurs and their expectation on conciseness

No.	Independent variables	'r' value	'p' value
1.	Age	-0.033	0.491 ^{NS}
2.	Educational Qualification	0.489	0.000*
3.	Working Experience	0.219	0.000*
4.	Number of employees working in the company	0.036	0.448 ^{NS}
5.	Annual Turnover	-0.102	0.033**

Note: * - Significant at 1% level; ** - Significant at 5% level; NS – Not Significant

It is inferred from the table 13 and figure 13 that among the five selected profiles of the women entrepreneurs, two factors viz. educational qualification and working experience have positive correlation with the expectation on conciseness.

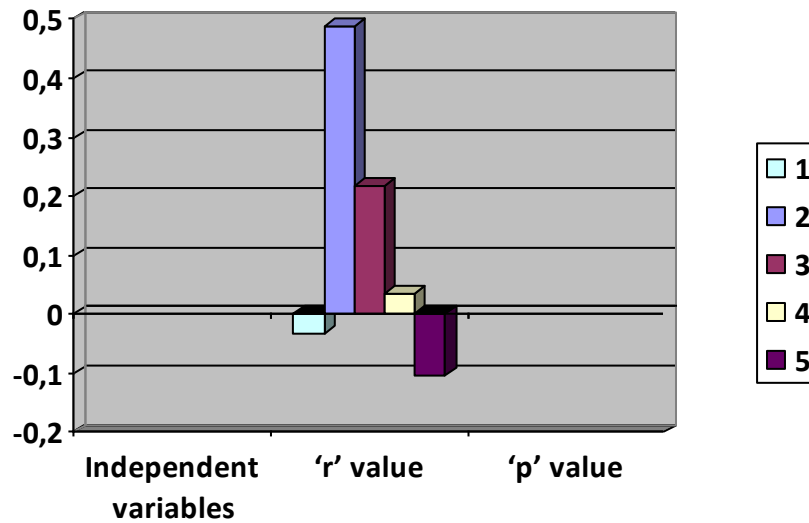


Fig.13. Conciseness

Source: Table 13

Table 14. Degree of relationship between selected profiles of the women entrepreneurs and their expectation on creativity

No.	Independent variables	'r' value	'p' value
1.	Age	0.010	0.835 ^{NS}
2.	Educational Qualification	0.228	0.000*
3.	Working Experience	0.327	0.000*
4.	Number of employees working in the company	0.345	0.000*
5.	Annual Turnover	0.103	0.011**

Note: * - Significant at 1% level; ** - Significant at 5% level; NS – Not Significant

It is noted from the table 14 and figure 14 that among the five selected profiles of the women entrepreneurs, four factors viz. educational qualification, working experience, number of employees working in the company and annual turnover have positive correlation with the expectation on creativity.

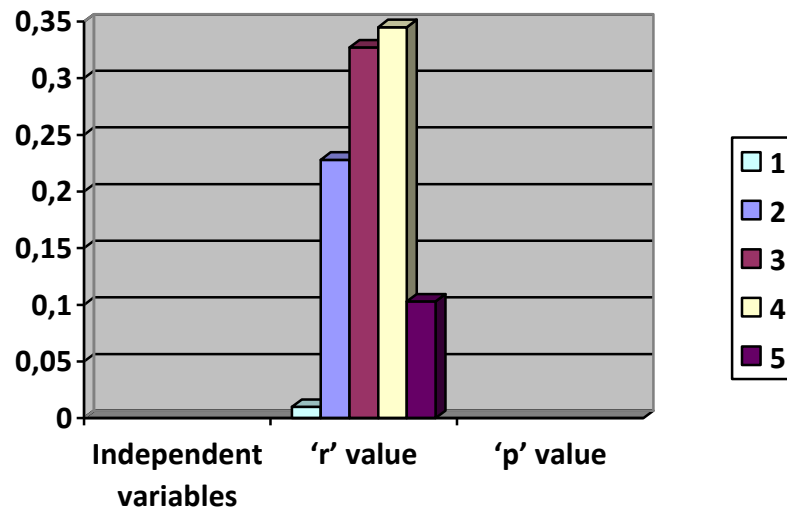


Fig. 14. Creativity
Source: Table 14

Results

From the research paper, it is noted that even though the small size enterprise women entrepreneurs are having above 10 years experience in their business they are expecting more completeness on both the entrepreneurs and services to the clients. The clients and counterparts may provide administrative as well as technical help to women SMEs through resorting to proper strategic communication based on the 7c's of communication. Women entrepreneurs and their role towards the components of communication can help in protecting the relationship with their clients to great extent that increases the effectiveness of communication and make it to be strategic in nature for the women entrepreneurs once they have a very right perception and their expectation.

- Regarding the installed capacity, production, and extent of demand and so on and they are unable to assess the present condition and future prospects of women SMEs. So, it is recommended to the women SMEs, they should apply all the communication components required to communicate that give more effect and to facilitate the women entrepreneurs to achieve the desired responses. Hence, as the strategic communication of the women entrepreneurs has been powered through applying the communication components rightly would automatically formulate strategies over their communication and increase the clients' interest over the organizations and respective entrepreneurs.
- Strategic communication practices should be one of the important practices especially for women SMEs even though they may hire administrative assistants. Small firms may not be able to appoint assistants for this purpose who can assist the women entrepreneurs in strategic communication. So, it is recommended that women entrepreneurs should undergo necessary communication practice and training to enhance their communication potential. It is not only important for the entrepreneurs to update their knowledge in every source and channel of mainstream communication throughout the business period, but also to enhance their power of communication through training opportunities and mentoring in the communication field. These only can synergize the effectiveness of the women entrepreneurs' communication.

Conclusion

Strategic communication should be understood in Small and Medium Enterprises (SMEs) and due importance to been given to practice especially the women entrepreneurs. In his article, "Perceptions of SME Growth Constraints in Nigeria", Charles 2002, identifies that one of the constraints for entrepreneurs is effective communication. By considering its sheer size, it is felt that the concept of women entrepreneurs have become crucial and it is the very time to generalize the importance and need to improve the communication skills and update their knowledge over communication ICT resources and channels available in the business field.

This may also minimize the cost and time of communication. But, the counterparts do not consider the women SME entrepreneurs and their credentials unless they are good at communicating their counter parts to make the communication more effective. Obviously, this study identifies seven communication components by which the strategic communication of the women entrepreneurs could be enhanced if properly applied and taken up as an exercise could open even the gateway for efficient global .

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