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The Changing Political-Economic Landscape and Its Impact on Country's Competitiveness

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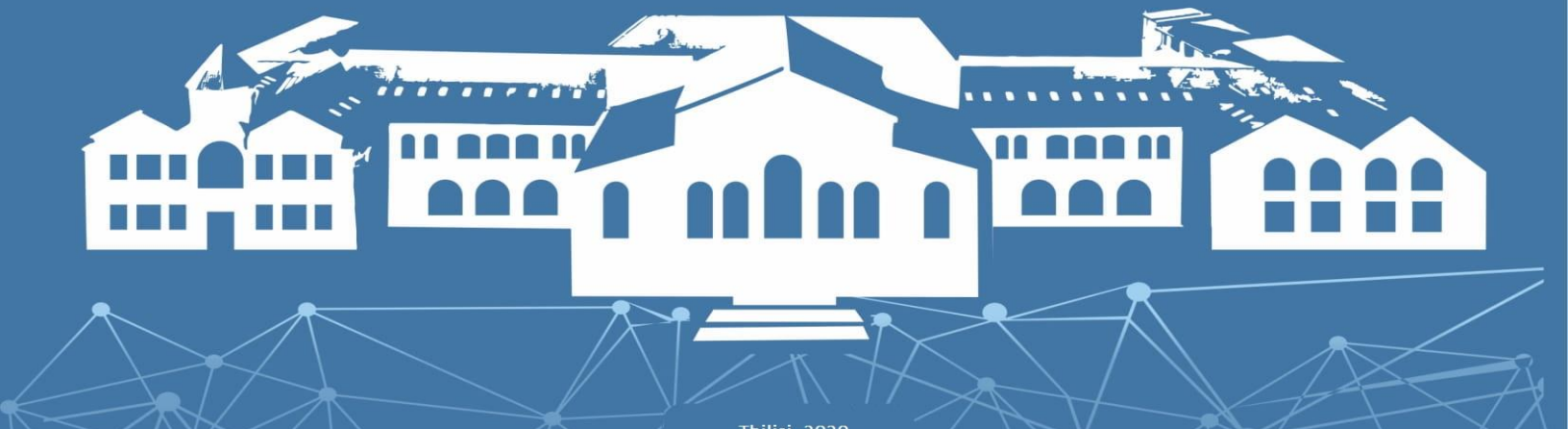

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რედაქტორი: ნინო მაჩურიშვილი, პოლიტიკის მეცნიერების დოქტორი, კავკასიის უნივერსიტეტი

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Energy Security Challenges of the EU and Eastern Partnership Countries in the Changing Regional Context

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Abstract

In the 21-st century, maintain national identity is impossible without ensuring energy security goals not only on national but also on the regional level. Keeping the importance of energy security component in mind, Paper researches the complexity of interconnections between energy import dependence and national security challenges. Through analyzing recent vulnerabilities within the European Union (the EU) and Eastern Partnership countries on construction of the Nord Stream natural gas pipelines, paper identifies two key challenges: increasing dependence of Europe on Russian gas and losing energy transit functions of Ukraine, guaranteeing from its part future political and economic instabilities in central Europe. However, these threats on its turn accelerate further cooperation among these countries toward import diversification. Meanwhile, the new legal status of the Caspian Sea creates additional incentives for this cooperation within the scope of the Southern Gas Corridor Concept and opens new chances for the revitalization of the Trans-Caspian Gas Pipeline Project.

Based on this, central question of the paper is: how the perception of energy import dependence on Russia as a common foreign threat, accelerated the EU and following Eastern Partnership countries – Ukraine, Georgia and Azerbaijan to act in one voice towards revitalization of Trans-Caspian gas pipeline project stagnated for a decade due to unfavorable geopolitical situation.

Using qualitative research strategy and concentrating on one particular case of cooperation, the paper delivers relevant findings, according which high degree of energy security interdependence existed within the European regional security complex, develops the common understanding of foreign energy threats and accelerates to act in one voice against existed threats. In this situation, elaboration of a common approach towards foreign energy threats and coordinate activities in this direction will be the most effective way to face future security challenges.

Introduction

Considering the fact that today the demand on energy resources in the world is increasing and energy supply is becoming more unstable (which is consequently reflected in the prices of energy resources), ensuring energy security is assuming ever greater importance. Relevantly, energy factor makes a serious influence on political and economic relations among the energy supplier, consumer and transit countries. This factor is consequently reflected in countries' international political behavior, and this in its turn gives rise to new geopolitical changes. Recent vulnerabilities in the EU on significantly increased energy import dependence on Russia, Ukraine-Russia armed conflict, political and economic instabilities in Caspian and Black Sea region brought into the agenda the need of elaboration common approach and strategies against these new challenges.

In this regard, to formulate future energy security strategy goals for the EU and Eastern partnership countries in this changing regional context first was analyzed the reasons for such high import dependence. Aftermath identified main obstacles in cooperation with Central Asian energy supply countries and described the geopolitical reasons that played a crucial role in stagnation of Trans-Caspian gas pipeline project back in 2009. After identification main challenges and through the analyzing new factors raised with the new legal status of Caspian Sea in 2018, the study suggests possible problem solution against the monopolized supply of energy resources as a threat to the entire world and a source of political manipulations.

I. Theoretical Fundamentals

For research purposes, was applied research sources, mainly attributable to the empirical literature: Energy legislative acts; State policy documents and directives of the EU and Eastern Partnership countries; Annual reports of relevant international energy organizations and statistic offices; Energy sector strategic action plans of beneficial countries, official statements of Heads of Governments; Analytical works and field researches; Official correspondence;

In order to answer following research question: How the perception of energy import dependence on Russia as a common foreign threat, accelerated the EU and following Eastern Partnership countries – Ukraine, Georgia and Azerbaijan to act in one voice towards revitalization of Trans-Caspian gas pipeline project stagnated for a decade due to unfavorable geopolitical situation, we apply the qualitative method, which made it possible to concentrate on one particular case and make conclusions under the general analysis of the process development. Research findings discovered through this methodology shows that main accelerator for future energy cooperation among consumer and transit countries is the existence of such foreign threats, which concerns to each country's energy security aspects.

Furthermore, only in case of such threats is possible to find a common approach to the problem and elaborate mutually beneficial strategy. This statement gives us the basis to formulate the following hypothesis: high degree of energy security interdependence existed within the European regional security complex, develops the common understanding of foreign energy threats and accelerates to act in one voice against it. The theory used for the explanation of this research phenomenon is Regional security complex theory, developed by Barry Buzan (Copenhagen School of security studies) back in 1991 and later upgrated by Ole Weaver. According to Buzan central idea of this theory is that: Since most threats travel more easily over short distances than long ones, security interdependence is normally into regionally based clusters: security complexes. Process of securitization and thus the degree of security interdependence is more intense between actors inside such complexes than they are between actors inside the complex and outside of it' (Buzan 1991, Ch.5). In other words, the regional security complexes can be seen as a group of security dilemmas concentrated into a certain geographical area, where essential threat perceptions by states are so interlinked and create such strong security interdependence, that security of a one-state cannot be easily separated from security of another (Buzan 1991,190).

Busan did not analyze regional energy security complexes separately, he considered such complexes within the regional economic complexes (Buzan 1991, ch.6). According to this approach, energy complexes are formed after energy-related interaction between two or more states in a limited geographical area, which includes an energy dependency relationship between the states involved and perception of this dependency as a threat. The energy interaction includes transactions such as production (export), purchasing (import) and transit of energy. Therefore, in energy security complexes regional distribution of energy resources and regional energy dependencies could be regarded as parallel to the distribution of military power in political-military based security complexes. In regard to our research topic, direct threats conditioned by Ukraine-Russian energy disputes were perceived from the EU side as a potential threat to the European Union countries national security. Furthermore, particularly this factor plays the main role in further acceleration of energy cooperation with Caspian Sea countries with the aim to decrease energy dependence on Russia as on the main source of threats.

II. Delimitation

This research work only covers the survey of energy relations among the EU, Caspian region countries and three Eastern Partnership countries: Azerbaijan, Georgia, and Ukraine, as main actors who suffered by political and economic pressure from Russia. This research work did not study the role of energy factor in the causes of political or military conflicts ongoing outside the determined geographical region and is particularly concentrated on analyzing energy processes ongoing among the EU, Black Sea and Caspian Sea region. Meanwhile, the research is focused only

on the role of the Trans-Caspian pipeline project as a key instrument for ensuring the security of supply for beneficial countries and does not overview the energy security chllanges of particular one country separately.

III. Literature Review

In the literature review reflecting the research point of hypothesis, namely - that high degree of energy security interdependence existed within the European regional security complex, develops the common understanding of foreign energy threats and accelerates to act in one voice against existed threats, scholars introduce a different point of views. Interesting point was developed by Leo Kabouche in the article: 'The Energy Briefing: Despite Caspian Sea agreement, obstacles to Trans-Caspian pipeline remain', where author stated that changed legal status of Caspian Sea was a result of joint actions of the EU and US preventing Russian energy interests in the Caspian Region (Kabouche, 2018). Peter Zeniewski in his work „Commentary: A long-term view of natural gas security in the European Union" states that instead of the EU's attempt to follow common energy strategy goals, The European Union still lucks common approach towards avoiding foreign threats like rising import dependence. Dualism in the energy policy of European countries creates a friendly environment for Russia to implement its energy projects without serious objection from the Eu side (Zeniewski, 2019). On the contrary, in article „A 'last-minute' transit contract? Russia-Ukraine-EU gas talks" by Szymon Kardaś, Agata Łoskot-Strachota and Sławomir Matuszak, authors argues that the EU's active involvement in the negotiation process with Russia and Ukraine on Ukraine's energy transit volumes, is another proof of perception energy crises of Ukraine as a common foreign Threat (Kardaś, Łoskot-Strachota, and Matuszak, 2019).

IV. Energy Security Challenges of Europe in the 21st Century

Worldwide Energy resources have often been a reason for war and confrontation. In recent years, multiple energy crises in held central Europen was clear evidence of the fact of how important is the component of energy security for the country's national security. The rapid growth of the EU's energy demand sets the agenda, not only for the utilization of new energy resources but also for review existed relations with supplier countries and discovering alternative ways of secure supply. Being the world's second-largest economic union, the EU consumes 1/5 of the world's total energy production and is heavily dependent on imported energy resources (Eurostat, 2018).

According to European Commission statistical data in primary energy imports of the EU, with a share of 72 % dominates crude oil, followed by natural gas with 23 % in 2018 (Eurostat, 2018). Meanwhile, crude oil import is more diversified than natural gas and Russia remains the largest

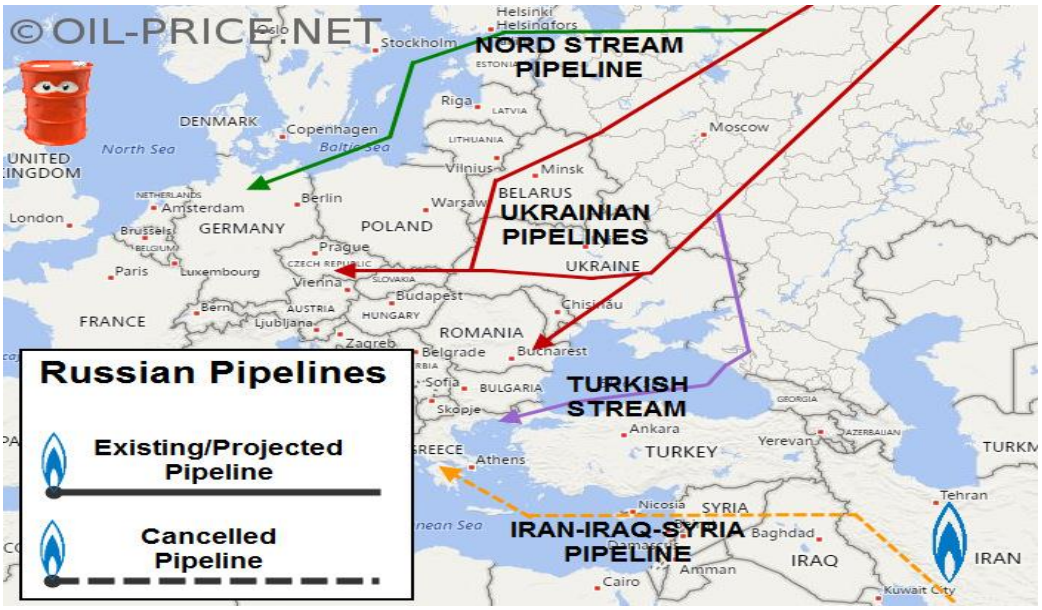
supplier of oil and natural for Europe followed by Norway and Algeria (Eurostat, 2018). Taking into account rapid growth of energy demand of the EU countries and multiply energy crisis developed between Russia and Ukraine during 2006-2014 years, such heavy dependence on energy imports creates a serious energy security challenges not only for the EU but for East and Central European countries as well.

Thereof, elaboration of common approach towards this challenge and find alternative ways of secure supply is a main goal of energy strategy of the EU. In this regard, the Energy Roadmap 2050, adopted by the European Commission in 2012, clearly demonstrates the main tasks of energy strategy, namely: diversification of supply routes as well as suppliers and supply sources. To this end, the development of new energy transport infrastructure and identification priority projects of common interest became the main aim of the Commission (2050 Energy Strategy, 2012).

Ukraine-Russia energy crisis followed by political tension and armed conflicts once again proved the importance of finding alternative suppliers. Despite the fact that Russia has developed a strong energy infrastructure ("North Stream 1-2" and "Yamal-Europe" pipelines) in Europe and owns enough energy reserves to fully meet the EU's demand for natural gas, the attempt from its side to use the energy as a political leverage, is perceived by the EU as the precondition of future political and economic instability. This prompted the EU to review its energy policy and develop a new approach toward Russian threats.

Meanwhile, this decision was accelerated by the recent vulnerabilities related to the development of „Nord Stream 1“ and „Nord Stream 2“ natural gas projects (total capacity 110m3, main operator Gasprom - Russian gas company). Several European countries perceived the construction of these projects as a direct threat to their national security. Besides the EU's increased dependence on Russian energy, after the realization of these projects, Central and Eastern European energy transit countries face the real risk to lose their transit function.Ukrainine was the first who faced this challenge. As far as Ukraine-Russia transit agreement expires by the end of 2019, Russia intends to redirect total Ukrainian transit volumes to the Nord Stream 1 and Nord Stream 2 pipelines. Consequently, Ukraine and other transit countries (Belarus, Moldova, Poland) lose both transit revenues as well as their geopolitical significance (Figure 1). It is noteworthy that on June 2018, Naftogaz (Ukrainian gas company) initiated new appeal proceedings against Gazprom, through which it is claiming a 12 billion USD compensation in exchange for reduced transit volume caused by the implementation of the North Stream 2 and the Turkish Stream Natural Gas Projects (OSW Comments, 2019).

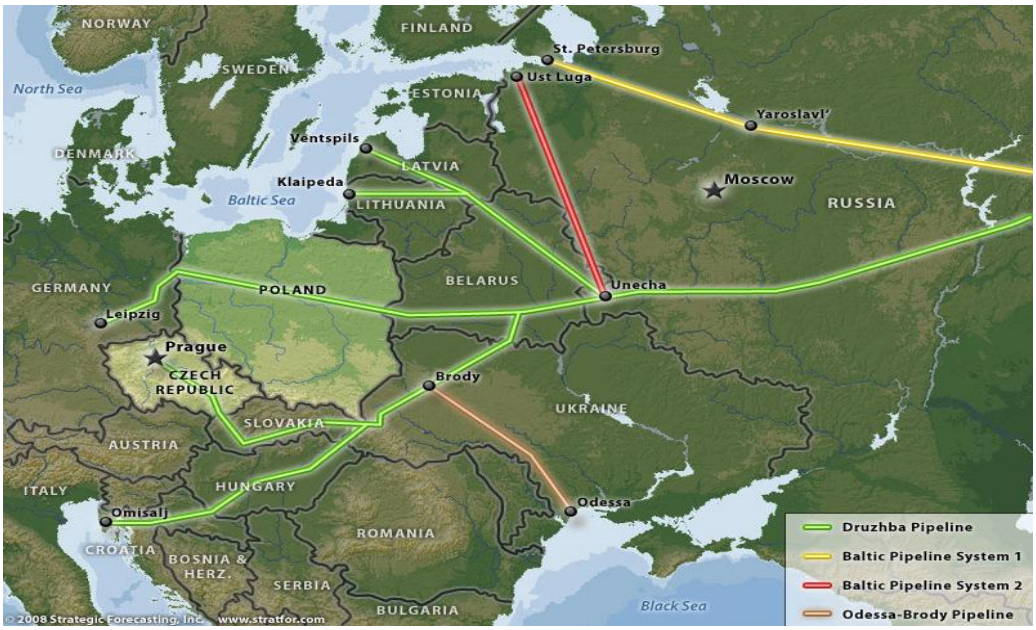
Figure 1: Map of alternative energy routs from Ukraine



V. The Era of New Opportunities

It is important to underliene that the complex energy relations between the EU and Russia, caused by growing energy dependence on Russia, had already been established back in the '70s of the previous century when after two oil world crisis the EU faced the urgent need for alternative ways of energy sources supply. The Soviet government, which had not previously operated in the World Energy Market for years, decided to get involved in the trade again and started transportation of increased volumes of Energy resources to European countries which has led to a growing dependence of the European industrial sector on Russian oil and gas products (Figure 2).

Figure 2: Russian oil pipeline system



However, the collapse of the Soviet Union led the EU to start thinking about further diversification of supply routes and suppliers from the energy-rich Caspian Sea region. Since 1992, the European Union through dfferent cooperation instruments and platforms has started active energy cooperation with the Caspian and Black Sea countries, such as TRACECA program, aimed at promoting the creation of Europe-Caucasus-Asian transport corridor, especially developing new energy transportation routes from the Caspian Sea region to the European region. TRACECA program was followed by program "INOGATE", oriented on the promotion of oil and natural gas transportation from the Caspian Sea region to the European region and the lates programme on energy cooperation EU4Energy.

Within the framework of this programs, by high officials from European Commission and partner countries, was iniciated gas pipeline projects titled "Feasibility Study of the Trans-Caspian-Black Sea Gas Corridor Project" in 2007 and later in 2009 the "Pre-investment Project for the Trans-Caspian-Black Sea Gas Corridor" in 2009. The purpose of these projects was to study the expediency of construction of a new gas transit corridor from Kazakhstan and Turkmenistan to Azerbaijan and Georgia via the Caspian Sea and then through the Black Sea region to the EU energy markets (Figure 3). Within the scope of the project, 3 separate transport volumes were considered for throughput capacity 30, 50 and 70 billion cubic meters natural per year over a period of 30 and 40 years (INOGATE, 2007).

Figure 3: Trans-Caspian pipeline options

However despite the great willingness and political inspiration of the EU and the project beneficiary countries, in that period the implementation of the trans-Caspian pipeline project has been hampered by a number of complex reasons:

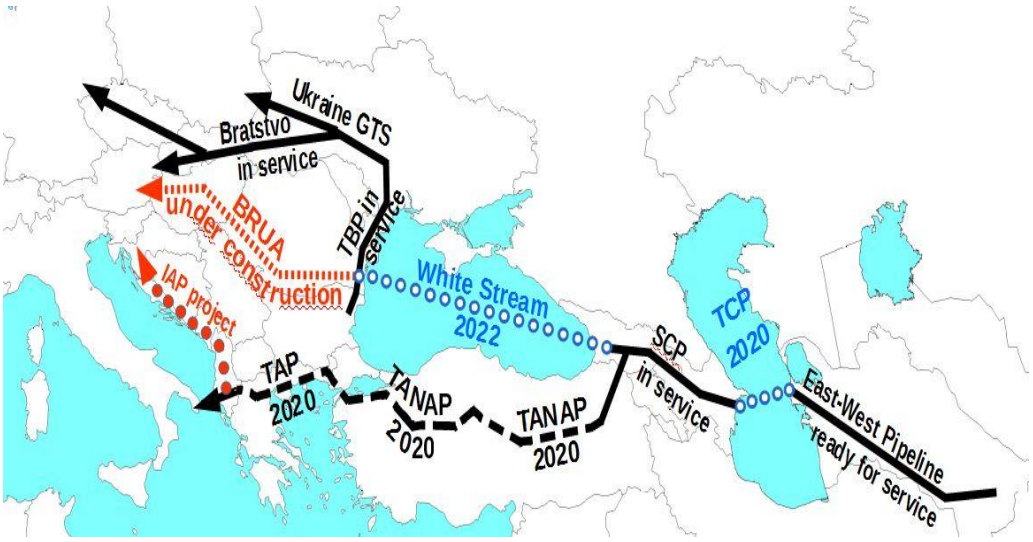
1. Ongoing disputes around the Caspian Sea legal status, stipulating multiply border disputes among the neighboring countries around see territories, covering untapped oil and gas reserves;
2. Post-soviet political instability and strong Russian and Iranian influence in the region, attempting to avoid strengthening of political and economic influence of the West in Caspian Sea countries, as well as aggressive energy investment policy of China in the Central Asian countries significantly impedes EU access to Central Asian energy resources;
3. Technical-economic difficulties connected to the realization of energy fields, such as strong climate condition, luck of investment and advanced technologies, as well as no proven data on reserve capacities;
4. Discovery new hydrocarbon fields in Azerbaijan (Shah-Deniz field);
5. Low motivation from Turkmen's side to share financial responsibilities for the implementation of the Trans-Caspian pipeline project;
6. Absence of strong interest of US at that time in the region and luck of a common energy security strategy among the EU countries.

All these factors led to the freezing of the Trans-Caspian project for almost a decade and concentrating the EU's focus on transporting only Azerbaijan's energy resources through the South

Gas Corridor projects initiated by the European Commission in 2009 within the "Eastern partnership" energy security platform. Three major projects are currently underway within the mentioned corridor: the South Caucasus Pipeline Extension Project (SCPX), the Trans-Anatolia Pipeline Project (TANAP), which replaced the Nabucco Project and Trans-Adriatic Pipeline Project ((TAP)). To support the development of further production Sangachal terminal and promote the second phase of the Shah-Deniz gas field in Azerbaijan are other main components of this concept. (European Commission, 2008). Development of this infrastructure played later key role in rehabilitation of Trans-Caspian pipeline Idea.

The second real attempt of implementation the trans-Caspian pipeline project was the development of "White Stream" project within the Southern Corridor, which was considered to be the second sub-direction of the trans-Caspian Project. For this purpose, on 13 November 2008, the European Commission decided to create a new Caspian Development Corporation to provide gas supply to Europe from Azerbaijan and the Caspian Sea region via Georgia directly to Romania and forward first to Ukraine, then Moldova, Slovakia and other European countries (Figure 4). The "White Stream" was officially recognized as the Project of Common Interest of the EU (EC, 2013).

Figure 4: White Stream Project



However, this second attempt to implement the trans-Caspian pipeline was unsuccessful as well. Due to technical and financial expediency, the EU gives the advantage to trans-Anatolian pipeline and trans-Adriatic pipeline projects. It worth to mention, that in 2016 the Turkmen side reaffirmed its readiness, despite the existed opposition from Iran and Russia, to supply additionally 40 billion m^3 natural gas per year to Europe. However by that period the European Union was not ready to accept the financial obligations required for such large volumes and on its turn Turkmenistan did

not agree on transportation less volume based on economic considerations.

VI. New Caspian Derby

The agreement signed by the presidents of five countries in Aktau on August 12, 2018, played a crucial role in the identification of the Caspian Sea legal status (VOAnews, 2018). This was a significant decision in terms of security, as regards the new Convention, the contracting States restrict any military representation (military vessels) in the Caspian Sea (EaP Think Bridge, 2018). From Russia and Iran the main concern was about to avoid the future military presence of NATO and US in the Caspian region and weaken the political influence of the West.

In terms of Energy, after the adoption of the declaration, new energy projects appeared in a more realistic perspective based on the statement, that bottom energy deposits will be determined by mutual agreements. it allows the signatories to build submarine pipelines as long as they comply with environmental standards. The new status of the Caspian Sea gives Central Asian countries the ability to independently supply their resources on the international market. In particular, if Turkmenistan will be able to reach an agreement with Azerbaijan in connection with the construction of the export gas pipeline, it will not need permission from Moscow (Figure 5).

Figure 5: Oil and Gas fields in the Caspian Sea

However, the Russian side still retains some leverage to hinder undesirable projects - the Convention implies the consent of all five parties in ecological issues in the realization of large projects. Consequently, Moscow still has some leverage to influence, however, it is much weaker than it was before. Nevertheless, the new status of the Caspian Sea and the changing political and

economic environment in Europe may create the possibility of a successful implementation of the Trans-Caspian pipeline project. Regional security complex theory can clearly explain ongoing main grounds of geopolitical changes in the Caspian Sea region. As it was mentioned before, the regional energy security complex formed in Europe after increased interdependence among energy supplier, transit and consumer countries. During the first energy crisis between Russia and Ukraine in 2006, the EU suffered from existed vulnerabilities between supplier and transit countries as well. Beside the fact that the EU started to look at new possibilities of diversification energy transit routs from Caspian region much earlier, the decision on construction Nord Stream 1 pipeline with capacity of 55 bln Cubic meter (almost half volume of Ukraine‘s transit capacity) and later Nord Stream 2 and Turkish Stream pipelines totally avoiding the transit role of Ukraine, accelerate the European Commission to take more drastic steps.

However despite Europian countries‘ desire to stay less dependent solely on such unreliable energy partner as Ukraine, the annexation of Crimea by Moscow in 2014, longlasting armed conflicts in Ukraine, political and economic stagnation of this country was clear evidence for the EU that dependent on Russian gas is a direct threats to Europe. However almost a decade past from 2006 until 2014, before the EU imposed sanctions on Russia. Energy crisis in 2006 had vulnerable impact mostly on eastern European countries and the EU was not as strict as it should be towards Russia's attempt which used Energy as a political lever against Ukraine. However, later on, war and large scale political instabilities in one of the Eastern Partnership Country-Ukraine was perceived by the EU as the main threat to its political stability. With strong political support from US the European countries started to act in one voice and beside the sanctions, arranged to start negotiations with Caspian Sea region countries namely, with Turkmenistan, Azerbaijan and Kazakhstan for enhancement strong cooperation in Caspian region. Georgias support as a reliable transit country has an outmost importance for the EU. For Russia, this was clear evidence of US desire strengthen it‘s a military presence in Caspian Sea Region in order to control further the Central Asia region, at the same time to minimalize Iranian threats and to exploit waste energy resources of Caspian Sea.

To avoid the threats of strengthening Western influence in Caspian, Russia and Iran accepted on the new Legal status of the Caspian Sea, giving energy independence to central Asia countries in exchange of their own Military safety. This on its turn, created new prospectives for the implementation of the Trans-Caspian pipeline project, bringing meanwhile increased energy security feelings for Eastern partnership countries – Georgia, Azerbaijan and Ukraine and for Europe as well.

Conclusions

To sum up, in the revitalization of energy cooperation among the Eu and Caspian Sea countries the following important components have been identified:

1. As a result of the implementation of the North Stream 1 and the North Stream 2, the EU's increasing dependence on Russian energy resources and thus decreasing the European energy security quality;
2. Russia-Ukraine's military-political and energy confrontation and the danger of losing Ukraine's transit functions become a main incentive to for the EU to start more active cooperation with partners;
3. The dissatisfaction of the Eastern European countries (Romania, Bulgaria, Hungary) as a result of the abolition of the "South Stream" Project and their willingness to implement alternative energy projects bring its benefit as well;
4. Also, Turkey's willingness to fully load the semi-empty trans-Anatolian pipeline and to acquire the role of the energy hub in the region by transporting additional volumes of energy resources from Central Asia plays a key role;
5. New opportunities of cooperation was opend for Azerbaijan and Turkmenistan in the energy fields and added Azerbaijan's strong desire and political ambitions to strengthen its positions in the region as a strong energy player;
6. Turkmenistan, in its turn, as a result of some economic crisis in recent years, was trying to acquire new markets of natural gas, in order to decrease further dependence on Russia and China.

Most significant factor in promoting the EU’s energy cooperation with Caspian Sea countries is the US-enhanced interests in the region - in a greetings to the Novruz Bayram celebration that was sent to Turkmenistan at the beginning of this year, Trump hoped that as a result of the change of the Caspian Sea status, Turkmenistan would be able to see new opportunities for transportation of natural gas to Europe. The administration of the US government sees the possibility of reduction European energy dependence on Russia by boosting EU energy security and reducing Russian influence in the European region, especially in Eastern Europe. However, Russia still contradicts the implementation of the project, perceiving it as a direct attempt of the West to disseminate its influence in this region. Taking into consideration all of the above factors, in the second half of 2018, a series of talks in Brussels between the Turkmenistan delegation and the representatives of the European Commission has again been renewed and the trans-Caspian gas pipeline was considered as part of the expansion of the Southern Gas Corridor. New possibilities was created for Eastern Partnership countries as well, namely:

Azerbaijan's involvement in the project will further strengthen its position towards Iran and Russia, who perceive Azerbaijan as a state supporting the US and Israel. Its economic benefits will increase and will strengthen its political status in the region as a strategic partner of the EU. Azerbaijan has already demonstrated the maximum effort and a large pre-transition of the Trans-Caspian highway

or other additional energy projects, with mobilization of almost $ 50 billion in a transapical pipeline implementation.

As for Georgia, this project enables it to contribute significantly to the energy security of European countries. Involvement in the project will strengthen the country's geostrategic role in the region. It also creates an opportunity for the country to develop energy sector industries and to use the possibilities created by the Free Trade Agreement with the European Union. It is noteworthy that both routs of the trans-Caspian project will pass through Georgia, which in turn will increase the country's transit potential. Consequently, transit earnings will be increased. It is worth to note that Georgian Oil and Natural Gas Corporation owned by the Government of Georgia purchased 10% of the Trans-Caspian Pipeline Management Company and 10% shareholders of the "White Stream" pipeline. This fact once again proves Georgia's strong motivation to play an active role in improving the energy security of the region.

For Ukraine, which is facing the risk of Russia's energy policy discriminatory measures, implementation of "White Stream" project as one direction of Trans-Caspian pipeline will increase countries energy security degree. It is noteworthy that within the framework of the "White Stream" project, the construction of a new pipeline was initially discussed via the Black Sea bottom in the direction of the Crimea peninsula in Ukraine. However, after the 2008 Russia-Georgia conflict and in December of the same year, Russia was deemed to be a volatile region for the implementation of this energy project. According to European experts, Ukraine's Crimea, the main headquarters of the Black Sea Fleet, was possible to settle the main target of the conflict between Moscow and Kyiv, which was later justified. Consequently, Romania's port of Constantia (Route: Azerbaijan / Georgia / Romania) became the priority route for the "white stream" natural gas. However the pipeline will initially supply the Caspian natural gas to Ukraine and Romania, and then will launch an expansion plan to other European countries.

It worth to note that, still remain some challenges that may play a negative role in the project implementation such as: financial and technical difficulties, including identification of most reliable transportation routs and clash of interest of great powers in the region. However new legal status and existing large scale energy infrastructure of Souther Gas Corridor projects together with significant untapped energy potential of Caspian Sea countries can serve as a strong stimulus towards the successful implementation of Trans-Caspian project.

Contemporary Challenges to Democracy and the Liberal International Order

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Abstract

The ongoing paper has the focus on new security challenges to liberal democracy and liberal international order. The security of a country and international order is considered from the view of the Copenhagen school and its new division of 5 security fields (political, military, social economic and environmental security). Climate Change (environmental security) is one of the most current and sensitive issue which is connected and can be spread to the other sectors of the security mentioned above. New technologies can be described as a mean of solution from these new challenges and as a source of threats. Climate change itself was a result of new technological inventions such as coal and oil powered engines by that time in the past. Now new technologies are trying to develop new sources of energy such as solar, wind and water. New technologies such as internet, social media and others provides huge opportunities for unprecedented control of the citizens by non-democratic governments of many countries (Digital Autocracy), spreading of false news through the social media are affecting even the democratic countries' election results and can be used to manipulate citizens' free will. Methodology used in this paper is as follow: comparative analysis and case study. Statistical data and empirical facts are also involved in creating more scientific value of the ongoing paper. Some suggestions will be offered for solving the abovementioned challenges in the conclusion part.

Keywords: Security, Climate Change, New Technologies, Overpopulation, Global Order.

Introduction

Nowadays we differentiate security threats on global and local level but this division of levels becomes more and more blur because these threats and challenges are intertwined and in many cases the results of each-other. For example, the greenhouse gases that are produced in China, India or U.S.A are the local level factors but since they are effecting on the temperature rise of the whole planet can be feel globally at any place and can have the consequences at any state.

These emissions are the result of operating new technologies which consume the energy. And if we need broader and clearer picture of the issue it requires a deeper analysis. In order to achieve this goal a historical overview can be helpful. In the ongoing paper I will discuss about three different issues that represent new challenges to the current Global order and security. These challenges are as follow: Climate change, Overpopulation and new technologies. Let me start with the Climate change and then connect it to the rest of two issues.

I. Climate change

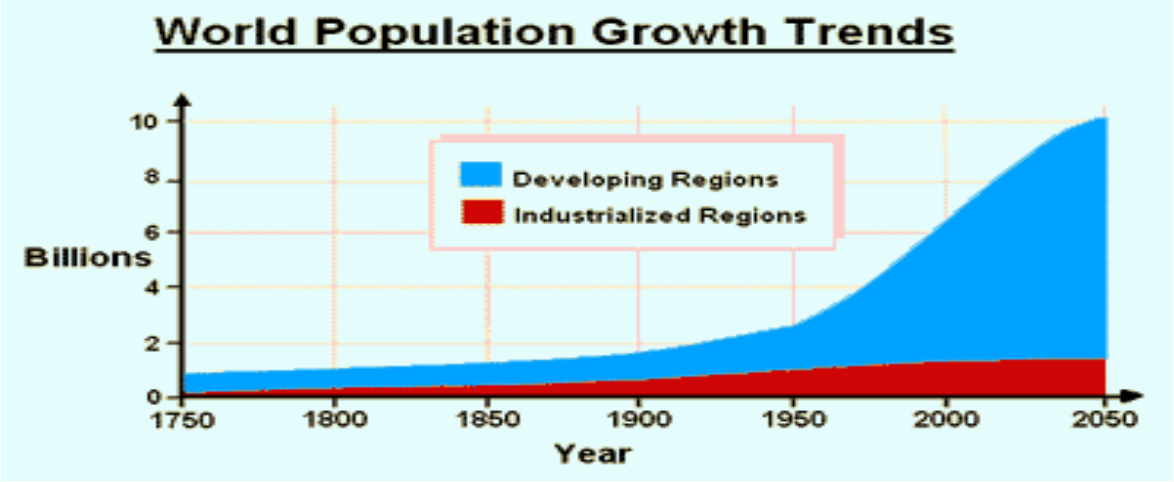
Climate change is connected to the environmental security according to the Barry Buzan one of the famous representative of Copenhagen school. Environment can be considered as the referent object of this certain sector of the security as well the source of threats. That means the following: the object of the securitization (as Buzan explains it) is the environment and if we do not start this process and do not care about the environment it will become a source of environmental security threats like global warming which already causes the rise of global temperature, desertification of lands so that it is impossible to live there, lack of water and so on. (Barry Buzan, Ole Waewer, Jaap de Wilde, 1998) Environmental security is considered nowadays as the most important field of security because if the planet will fail environmentally so will the economic, political, social and military order and it will cause the global catastrophic events and chaos. "In 2017-18, the Australian Senate inquired into the implications of climate change for Australia's national security. The Inquiry found that climate change is "a current and existential national security risk", one that "threatens the premature extinction of Earth originating intelligent life or the permanent and drastic destruction of its potential for desirable future development"." (David Spratt, Ian Dunlop, 2019) In this abstract we can see the seriousness of the issue and further more authors predict that if drastic changes will not occur in next ten years to build a new eco-friendly and zero emission economies globally then we will miss the return point and catastrophic processes will be triggered that brings us to the end of human life and civilization.

The security consequences from climate change include worsening poverty, political instability, and the risk of conflict. These are already affecting large portions of the globe. The regions most at risk from climate change are also those regions with the highest incidents of interstate conflict, radicalism, and terrorism. These regions include South Asia, North Africa, Sub-Saharan Africa, and Central America. Climate change will further exacerbate regional tensions, increasing the risk of conflict, mass migration, and humanitarian emergencies. (Bernard I. Finel and Christine Bartolf, 2019)

II. Overpopulation

Second challenge of the global order and stability is overpopulation which is also connected to the climate change and accelerates it. To add more emphases on the role of scientific achievements and their product new technologies in development of such unwilling process of acceleration of global warming it is important to mention overpopulation problem which is a core reason of demand on usage of natural resources which causes emissions and other type of pollution of environment. "There are many perceived root causes underlying the problem of human overpopulation, but the most often emphasized include, reduced mortality rates, increased fertility rates, and lack of sufficient education. There are various reasons why the mortality rates are dropping throughout the world. As medical prowess increases, the lives of many more people have been prolonged. More and more medical facilities have been introduced, especially in developing countries, which allow much more people to have access to potentially life-saving medicine and treatment." (Maryil, N.A) The author also refers another reason of accelerating the population grows which is connected to the local cultures and tradition to have many children. The problem is also an education and as the diagram shows these factors are evident in the developing world. (See the diagram 1.1) overpopulation cannot be blamed only to new scientific (technological) achievements but it is the result how and for what do we use them. For example if people in different places of the world change their traditional thinking of having many children the consequences will be different and the world population will not grow at such a high pace and this will happen during/with the same technological progress.

Diagram 1. World Population Growth



So until now three issues were discussed: first- technologies triggered global warming, second technologies and scientific achievements made it possible to decrease mortality rate and combined with cultural and other factors increase fertility rate which resulted in extreme high pace of human population growth as it can be seen from the diagram above. Third and the most difficult environmental security challenge to be solved: this is the growing demand of energy food water and other natural resources as a result of overpopulation. Our planet has its limited biosphere and resources what we are exhausting every day with more and more demand. If observed carefully one can discover that the technologies and environment are not the original threats to our security but it depends again how and for what humans are using them. Generally the idea to have a healthy and long-living people which become available by the scientific progress cannot be a negative event but if the humans will not be willing to change their lifestyle to have less babes or plan the families that means that we are using the new technologies to create more burden on the planets biosphere and the pace of global warming. This will have and reversal effects and will threat to the existence of human civilization.

To illustrate better I would compare environmental security threats and the traditional military, political, economic and other threats to each-other: imagine that all the nations and states are on the same bout in the middle of the see fighting or interacting against each-other and absolutely do not care about damaging the bout. Short-run profit focusing politicians and populism which totally ignores the global warming is one of the biggest challenge to environmental security and only improvement of the technologies will not solve this problem people should be willing to invest and use these technologies in a proper way and for a proper goal for sustainable development of our planet and our lives as it was mentioned above.

III. Technological Challenge

But how the climate change and technologies challenge the international liberal order which exists since the end of World War II and which brought long last peace and prosperity to the humankind? Yuval Noah Harari professor of history of Hebrew University of Jerusalem speaks about the three challenges that humanity face today: nuclear war, climate change and technological disruption. I will focus to the last two because the nuclear war is not a new threat it exists already more than a half of a century but it become more real because of last two challenges and it can be avoided if these challenge together with the problem of overpopulation mentioned above can be neutralized. Otherwise we already see the crisis of the liberal order: "People all over the world are now losing faith in the liberal order. Nationalist and religious views that privilege one human group over all others are back in vogue. Governments are increasingly restricting the flow of ideas, goods, money and people. Walls are popping up everywhere, both on the ground and in cyberspace. Immigration is out, tariffs are in. If the liberal order is collapsing, what new kind of global order

might replace it? So far, those who challenge the liberal order do so mainly on a national level. They have many ideas about how to advance the interests of their particular country, but they don't have a viable vision for how the world as a whole should function. For example, Russian nationalism can be a reasonable guide for running the affairs of Russia, but Russian nationalism has no plan for the rest of humanity. Unless, of course, nationalism morphs into imperialism, and calls for one nation to conquer and rule the entire world. A century ago, several nationalist movements indeed harbored such imperialist fantasies. Today's nationalists, whether in Russia, Turkey, Italy or China, so far refrain from advocating global conquest." (Harari, 2018) If the current trend of nationalism strengthens the global liberal order and its institution will become more and more ineffective for dealing with the three current challenges climate change, overpopulation and technological disruption and the world will enter into traditional realism's security dilemma when there is the lack of trust and cooperation which triggers a chain of arms race. In the modern word we can call it the race of dangerous technology development that can be used as a support of authoritarian regimes which will be able to control people to an unprecedented degree in the history. As it is supposed the combination of artificial intelligence and the upcoming biological achievements will create the technological possibility to reach not only the external actions of humans, but the deepest feelings, thoughts and circumstances of human beings. (Harari, "21 Lessons for the 21st Century" | Talks at Google, 2018) We have already seen the misuse of new technologies in case of 2016 U.S. presidential elections through spreading the fake news and other measurements. Let me go deeper to find the core reasons of the current situation: Donald trump was blaming the ruling liberal elite during 2016 presidential election campaign that they are responsible of raising economic inequality and the second main topic of his campaign was the mass migration in U.S.A and the negative consequences of it. If we observe carefully on these two issues one is local/ national level issue and the second is on the international level. But I would say that they are the products of each-other and tightly intertwined: So the rising inequality on a national level for example in Georgia, Mexico or somewhere in Africa causes relocation of people from one country to another to find a better work and living environment. Such a global processes in developed countries destabilizes economic stability of U.S on a local/national level. This is the reason why building the walls and nationalism become popular and helped Trump to win the 2016 presidential elections and become the leader of the masses against the liberal economic elite in U.S. Another example can be seen in European Union (EU): "With the far right now firmly anchored in the new European Parliament, pressure for tougher EU policies on migration is likely to increase. The situation is already grim, and the world is watching every EU move. Italy's decision to arrest Carola Rackete, the captain of the Sea-Watch 3 rescue ship, which sailed into the Italian port of Lampedusa with forty-two asylum seekers on board despite a ban from Rome, is just one example of an EU policy gone terribly wrong." (Judy Dempsey, Shada Islam., 2019) The same factors and processes mentioned above will produce the similar results in other countries as well, which will lead to the international system of fortresses and walls as Harari described. Such a system will not be a global liberal order as we know it since the World War II, but will be a similar system, existed

in 19th century with some elements inherited from the current liberal order for which Political Realism is the best theory to explain. But how is this analyze connected to the main three issues of this paper that are Climate change, new technologies and Overpopulation? - the new technologies such as Artificial Intellect (AI) and robotics will take hundreds of thousand jobs from the middle and low income workers in all over the world this will destabilize social and economic stability with the higher degree and will cause even more migration waves. Climate change will have the same consequences. As it was estimated by the research above if global warming will continue with the current speed, by the 2050 1.5 billion people will be obliged to leave their places because of extreme heat, desertification, lack of water and other extreme weather factors. They will move to the environmentally safer places, but will the locals be able to meet them with hospitality?

Conclusions

If humanity wants to avoid such a catastrophic scenario development the leaders of current states both from liberal and non-liberal states have to work together for the sustainable and better future of the world. But leaders such a Donald trump who won the elections by the support of the people angry with inequality actually do not have foreseeable future development plan of the world. Such a leaders have short-run national (local level) plans which will produce worse results in a middle and long-run (if we even will have it) period of time as for the world population as well for their own nation, because it will be extremely hard if not impossible to build the type of walls and security system which will deter 1.5 billion people with no food and future.

Current paper does not give advices how the liberal order should survive but tries to show that global cooperation is essential on the issues discussed above. So the leaders of liberal or non-liberal states must cooperate in order to reach the goal of sustainable environment and development of new technologies in service of people's prosperity and happiness. On the other hand citizens have to support and vote for type of governments that will have the plans for reaching such goals. Citizens and governments of different states can design the better future world through understanding and adapting to new circumstances and policies.

The Role of Media Literacy in the Era of Technological Transformations

George Jologua

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Abstract

The following paper intends to demonstrate the role and the importance of Media Literacy in the modern era of technological transformations. The main goal of the paper is to analyze the definition of Media Literacy and to demonstrate the necessity of integration of Media Literacy competence on all levels of Georgian society. Special emphasis is laid on the modern challenges of Media Literacy which are related to narrowing down this highly sophisticated field into a mere instrument for countering certain streams of political propaganda and the so called fake news. The paper intends to highlight the most crucial challenges of the modern mass media which do not fall under these categories and to demonstrate the necessity of integration of Media Literacy competence in formal as well as non-formal education with its full complexity.

Keywords: Media Literacy; Mass Media; Propaganda; Information Management.

I. Alternative Explanations of Media Literacy

A modern day discussion over competitiveness of a society could hardly exclude the role of Media Literacy, i.e. the mindful engagement with the media, as an essential skill for the twenty first century citizen.

For decades, literacy, i.e. the ability to read and write had been observed among the major identifiers of a nation's progress and competitiveness. The transformations in the communication technologies, especially in the past decade, evidently call for the new skills for communication in the modern world globalized by the media. The mere ability to read and write can by no means represent a sufficient skill for communication any more. Hence, the importance of Media Literacy, the ability to read and write through media, the ability to receive and spread information through media, is becoming more and more evident globally.

One of the biggest challenges of Media Literacy is related to its definition. For decades, scholars have been trying to come up with a laconic and precise definition of what Media Literacy represents. The first fundamental definition was proposed at the Aspen Institute Media Literacy Conference in 1992. According to the definition, a media literate person was considered as one who: „can access, analyze, evaluate, and produce both print and electronic media" (Aufderheide, 1993, p.1). The modern institutions engaged in Media Literacy research, such as the Centre for Media Literacy (USA) suggest the following definition: „Media Literacy is a 21st century approach to education. It provides a framework to access, analyze, evaluate, create and participate with messages in a variety of forms – from print to video to the internet. Media Literacy builds an understanding of the role of media in society as well as essential skills of inquiry and self-expression necessary for the citizens of a democracy".

While being quite descriptive, these definitions might not fully describe the practical character of Media Literacy competence. In order to grasp its true meaning, it can be helpful to go on with discussing various aspects of Media Literacy, hoping that by the end of the discussion the reader will have a better understanding of what Media Literacy really means. For this purpose, it can be helpful to discuss the second modern-day challenge of Media Literacy, which is the narrowing down of this highly sophisticated field into an instrument for countering certain streams of political propaganda and the so called fake news.

II. Modern-day Challenges of Media Literacy

The immense role of the new media in the recent developments in the global politics, such as the dissemination and the global reach of the modern-day propaganda and the so called fake news have increased the attention to the field of Media Literacy worldwide. However, the modern Media Literacy related activities are frequently focused solely on the issues of self-protection against political propaganda and the so called fake news. Same tendencies are clearly visible in Georgia as well, where most of Media Literacy activities conducted by Civil Society Organizations are related precisely to the issues of countering anti-Western propaganda and the so called fake news spread through mass media. Considering the sensitivity of Georgian geopolitical challenges, one cannot stress enough the importance of the activities aiming at countering internal or external streams of anti-Western propaganda in Georgia. However, narrowing down the field of Media Literacy into an instrument for countering solely certain streams of political propaganda puts Georgian society at a risk of developing an utterly superficial understanding of Media Literacy and of the modern mass media itself. The suggestion is not to decrease the attention to countering anti-Western propaganda through enhancing Media Literacy competence, but to increase attention to other challenges of the modern mass media which do not fall under the category of anti-Western propaganda.

Media Literacy should by no means be viewed as a currently emerging field being promoted in order to counter the present-day challenges of mass media such as the dissemination of political propaganda and the so called fake news through the new media. Practitioners of Media Literacy have been integrating Media Literacy competence into formal as well as non-formal education for more than thirty years by now. One of the first authors suggesting the fundamental conceptualization of the importance of media education was Len Masterman, which in his book Teaching the Media (1985) stressed the importance of media education, stating that the education systems must follow the complexity and sophistication of the developing media and communication technologies. It might be challenging to name any other book predicting with such an accuracy the evolving challenges in such a dramatically developing field as the media and communication technologies.

In Teaching the Media Masterman suggests seven reasons for his argument over the importance of media education:

1. The high rate of media consumption and the saturation of contemporary societies by the media.
2. The ideological importance of the media, and their influence as consciousness industries.
3. The growth in the management and manufacture of information, and its dissemination by the media.
4. The increasing penetration of media into our central democratic processes.
5. The increasing importance of visual communication and information in all areas.
6. The importance of educating students to meet the demands of the future.
7. The fast-growing national and international pressures to privatize information (original emphasis) (Masterman, 1985, p. 2).

Even before the development of modern communication technologies such as the internet, as we know it today and the digital media, Masterman urged the educators to take into account media saturation and the constantly increasing amount of time public spent interacting with and through media. He called for questioning the belief that media were merely providers of news and entertainment. Instead, Masterman suggested to view media as the Consciousness Industries.

Interestingly enough, after more than thirty years since the publication of Teaching the Media some of the most prominent institutions working on Media Literacy issues today, such as the Centre for Media Literacy (USA), base their Media Literacy programs precisely on the seven reasons for media education suggested by Masterman.

Reflecting on Masterman's suggestions, let us discuss some of the most challenging issues of the modern mass media which do not fall under the category of political propaganda and the so called fake news. This way the reader will hopefully get a better understanding of what could be left out if Media Literacy competence is not promoted with its full complexity.

The first issue on Masterman's list is the high rate of media consumption and the saturation of the society by the media. If access to information had been among social challenges throughout centuries, today the case has changed dramatically and the challenge has become not the access but rather filtration and management of the immense amounts of information which a modern day citizen receives through mass media daily. Therefore, Media Literacy educators should enhance the competence of information management in accordance to the demands of the modern technological era when a modern citizen has access to virtually all of the information accumulated by humankind at a distance of a laptop or a smartphone.

The second issue suggested by Masterman underlines the ideological importance of the media and their influence as consciousness industries. This point can be viewed as the most challenging issue for Media Literacy educators as it requires a deep understanding of media's ideological influence on societies not solely with regards to political but to commercial issues as well. Media Literacy researchers and educators should pay a special attention to the ideological influences of the commercial messages spread through mass media: how do the messages received through advertisements shape our ideology? How do the stereotypes affirmed in advertisements shape our views? For instance, how does the frequent portrayal of women on the advertisements of washing products shape our values and lifestyle? The challenges of media's ideological influences demand the most accurate examination as the effects are often immersed deep in the subconscious levels of human minds.

The third issue underlined by Masterman is the growth in the management and manufacture of information and its dissemination by the media. Here the attention should be driven to the political propaganda and the so called fake news which are carefully manufactured with the aim of not informing the public but rather of shaping the public opinion according to the goals of the manufacturer. Media Literacy educators should enhance the competence of critical evaluation of information sources and of the hidden values and agendas in media messages. Special attention should be driven to the issues of the new media, which are online platforms and social networks where the distribution of the so called fake news takes place predominantly. Media Literacy researchers should critically evaluate the advantages and disadvantages of the new tendencies of adopting the social networks as primary information sources by public.

The next topic suggested by Masterman is related to the increasing penetration of media into our central democratic processes. Here again the challenges of the modern day political propaganda should be addressed, with special regards to the role of mass media and especially the social media during elections. In case of Georgia, special attention should be dedicated to the anti-Western propaganda spread through mass media and on the ways of detection and effective countering of the disinformation spread respectively. On the other hand, international cases of media's negative interventions into the democratic processes should be examined as well. For instance, the famous case of Cambridge Analytica which revealed that, to put it down simply, one could simply buy

electoral votes through the services of a licensed company operating legally and using social networks as the primary channel for targeting the audiences.

Another major issue of Media Literacy underlined by Masterman is the importance of visual communication and information in the media. Deconstruction and the critical evaluation of the hidden messages in media products should be among the top priorities of Media Literacy educators, in relation to both political and commercial messages spread through mass media. Special attention should be paid to the issues of how the visual images stay in public's memories and how they shape the public opinion.

The last issue underlined by Masterman concerns the national and international pressures to privatize information. Media Literacy researchers and educators should address the issues concerning the modern tendency of accumulation of the global information in the hands of a few companies. The researchers should question – if the accumulation of power in the hands of a few might represent a threat to a democracy – then what threats might contain the accumulation of the global information and data in the hands of just a few companies?

The only Media Literacy approach of crucial importance not included in Masterman's suggestions is the participatory approach promoting self-expression through media product creation. The reason of this exclusion is obvious – by the time when Masterman published Teaching the Media in 1885, the media itself had not yet developed to the point where the public interaction would be so easy and common as it is today. Nowadays virtually every citizen with an access to media can be a producer and a distributor of information and therefore, the modern Media Literacy educators should by all means enhance the essential skills for media product creation. Research has shown that if Media Literacy is taught with the sole focus on the negative effects of media without underlining the media's necessary existence in a democratic society, the learners might be prone to develop cynical attitudes towards the media and become defensive towards media's role in society and democracy (Mihiliadis, 2008, p. 7). Therefore, it is of crucial importance to promote civic engagement and participation through mass media.

Conclusions

By the end of the discussion, let us touch upon another challenge of Media Literacy in Georgia particularly, which is the lack of sufficient in-depth, academic research of the field. As far as the observation suggests, the majority of the materials implemented through Media Literacy interventions in Georgia represent translations of foreign authors. Considering the sensitive character of media's influence on societies, it is of crucial importance to conduct in-depth research on the specific needs of Media Literacy competences in Georgian society particularly.

The academic institutions as well as the donor organizations in Georgia must pay a special attention to the promotion of local in-depth, academic research of Media Literacy. This would serve as a fundamental step on the way to integrating Media Literacy competence on all levels of Georgian society, be it in a form of formal or non-formal education. Number 6 on Len Masterman's aforementioned list was „the importance of educating students to meet the demands of the future" (Masterman, 1985, p. 2) and that must be the concern of Georgia right now. The educational institutions of the absolute majority of the developed nations have adopted Media Literacy competence among top priorities and have integrated the elements of Media Literacy into formal and non-formal education in various ways and forms. And so must Georgia. With the sole focus on the issues of anti-Western propaganda and the so called fake news Media Literacy interventions in Georgia are at a risk of leaving out some of the most challenging issues of the modern day mass media which do not fall under these categories. If Georgia wants to take its place among the developed nations, then it must prepare their youth for the challenges of the developed world precisely.

Impact of Technology on Destination Brand Awareness

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Abstract

The research paper assess the impact technology has on Destination Brand Awareness. Brand awareness is the strength of the brand's presence in the mind of the target audience and is an integral part of the Consumer-Based Brand Equity (CBBE) model. In combination with the Brand Image, Quality, and Loyalty, Brand Awareness contributes to the destination competitiveness and overall country performance.

For addressing the intent, from the Travel & Tourism Competitiveness Index (TTCI) of the World Economic Forum are selected pillars that evaluate online and digital performance of the destination and is assessed their relationship with the destination brand awareness. According to the conducted analysis is determined that "Internet use for business-to-consumer transactions" is the major pillar from applicable TTCI sub-indexes which establishes destination brand awareness; therefore improving performance of this sub-index will have positive effect on the performance of the brand awareness.

It has been also determined that Georgia as a tourism destination performs significantly poorly in this pillar compared to direct regional competitors. In addition, findings indicate that Croatia is the strongest performer in the region and therefore is appropriate for Georgian tourism stakeholders to closer assess models and systems used by the Croatian tourism sector.

Finally, based on the literature review is acknowledged that in spite of the multiple changes and shocks, ranging from health concerns to natural disasters and manmade crises, tourism, although vulnerable, has always bounced back, proving its resilience and capacity to rebound. Global tourism sector not only proven to be resilient, but also shows that is capable to continuously grow.

Keywords: Destination, Brand Awareness, Tourism, Competitiveness, Georgia

Introduction

In 2016, Travel and Tourism directly contributed US$2.3 trillion and 109 million jobs worldwide. Taking its wider indirect impacts, the sector contributed US$7.6 trillion to the global economy and supported 292 million jobs. This was equal to 10.2% of the world's GDP, and approximately 1 in

10 of all jobs (WTTC, 2017). This is a result of the extraordinary growth of the international tourism for the last six decades. Role of tourism is critical in Georgia as well as in neighboring markets.
Decision making in tourism is increasingly influenced by on-line sources and on-line business to business and business to consumer communications and marketing. Fast and reliable digital connectivity is one tool to enable business expansion, encourage investment and to reach potential markets and opinion formers; countries with fast broadband connections have a competitive advantage which is becoming more important as social media and internet access takes a prominent role for promoters as well as in generating tourist awareness, branding, influencing decision making and purchases (Dupeyras, 2013).

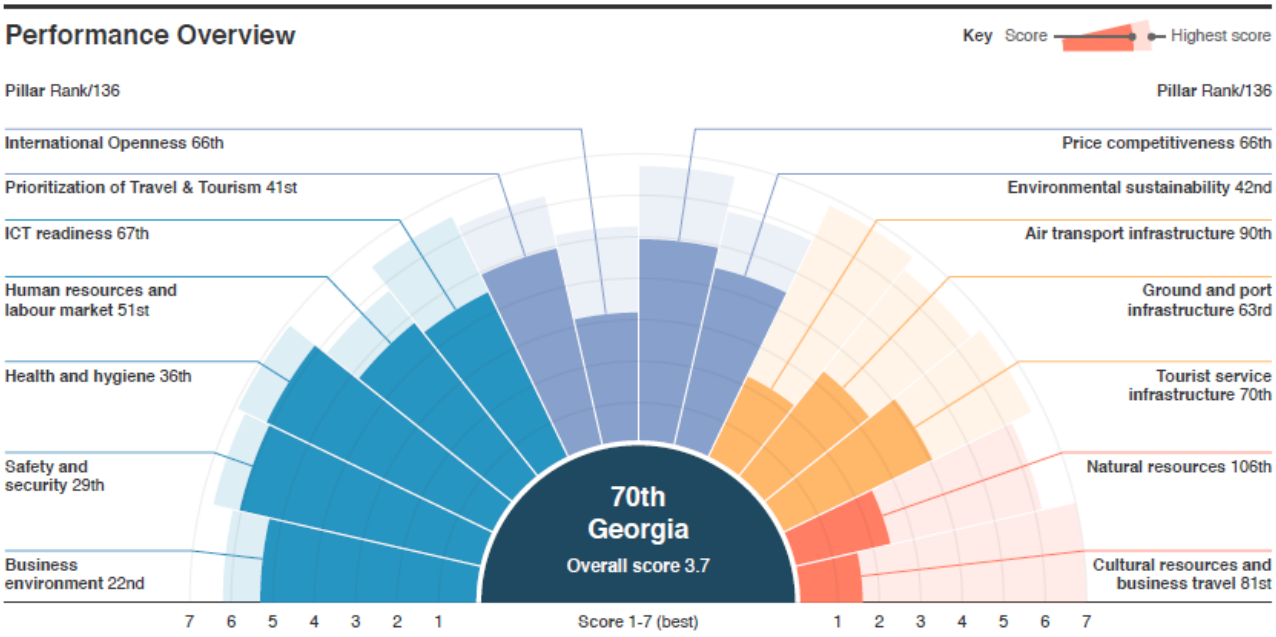
It is interesting to know what role does branding and the concept of brand equity plays in establishing competitive advantage for destination and its broader competitiveness. By assessing brand equity of destination is possible to evaluate effectiveness of destination promotion and marketing, and efficiency of country tourism strategy.

I. Travel & Tourism Competitiveness Index

The most recognized and comprehensive competitive ranking system in the field of tourism is the Travel & Tourism Competitiveness Index (TTCI) of the World Economic Forum (WEF, 2015) (WEF, 2017). Initially compiled in 2007, TTCI measures "the set of factors and policies that enable the sustainable development of the Travel & Tourism sector, which in turn, contributes to the development and competitiveness of a country". Most of the data set for the TTCI is statistical data from international organizations, with the remaining third based on survey data from the World Economic Forum's annual Executive Opinion Survey. The methodology is based on 14 pillars. Overview of those pillars and Georgia's overall performance according to TTCI 2017 is provided in the Figure 1. Results are self-explanatory and locates country ranking in comparison with other destinations

According to the TTCI 2017, Georgia is ranked as the 70th economy out of 136 (WEF, The Travel & Tourism Competitiveness Report, 2017). This is slight improvement from 2015 result, where Georgia was 71st economy out of 141 (WEF, The Travel & Tourism Competitiveness Report, 2017).

Figure 1. TTCI 2017 Performance Overview of Georgia



II. Bloom Consulting Country Brand Ranking

Another assessment system which can be used to assess destination competitiveness is the Bloom Consulting Country Brand Ranking (Bloom Consulting, 2017). Boom Consulting analyzes the success of 193 unique Country and Territories Brands, as well as their relative performance as compared to others. Moreover, Boom consulting collaborates with the World Economic Forum to measure the National Brand Appeal of Countries from a tourism perspective.

The Country Brand Ranking developed by the Bloom Consulting uses algorithm, comprised by key variables, such as: the economic performance of a country's tourism sector, and its online and digital performance.

III. Online Performance and Effect of New Technologies

Innovations and new technologies are revolutionizing the tourism industry. For example, the study by Boston Consulting Group estimates that 95% of people use digital resources to organize a trip. Travelers use an average 19 websites and mobile applications—not only for booking, but also searching for information, making plans and sharing experiences of the trip. Internet is increasingly seen as a necessity during a trip: a Tripadvisor survey found that 74% of the respondents mentioned "free wi-fi" as the main benefit when deciding about accommodation.

Global benchmarking survey TRAVELSAT, conducted in 2011 and based on data from more than 15 000 international tourists from more than 30 market and visiting a destination for the first time

and identified that availability of information on the web is the third most important influencer on the decision process (TCI Research, 2011).

IV. Possible Threats for Tourism Sector

The study "Adapting to Uncertainty— The Global Hotel Industry" conducted by Deloitte LLP (Oaten, Quesne, & Harry, 2015) identifies four common demand shocks - economic volatility, political instability, terrorism and pandemics. Same time, results of collected studies as well as WEF report of 2015 indicate that in spite of the multiple changes and shocks, ranging from health concerns to natural disasters and manmade crises, tourism, although vulnerable, has always bounced back, proving its resilience and capacity to rebound (WEF, 2015).

Based on conducted analysis, global tourism sector not only proven to be resilient, but also shows that is capable to continuously grow. Growth trends and recovery speed could be different country by country and situation by situation. Sections above described recent shock cases from all over the world and also demonstrated that most of destinations returned to its initial or above stage after crises was gone. Occasion of shocks can temporarily shift segments visiting the destination, this can also shrink the level of average spending per tourist. It is logical to also expect that depending on the length of the crisis and recovery, some tourism related businesses will get bankrupt and leave industry, resulting in increase of unemployment and decrease of incomes.

V. Customer-based Brand Equity

Destination branding is one of the major tools used to differentiate a country's tourism offering. This acknowledges branding as a powerful part of the marketing mix of a country to improved its competitiveness and promote distinctiveness, resulting in increased attractiveness of tourists.

Issue of destination branding is multiple times referenced in the Travel & Tourism Competitiveness Index (TTCI) of the World Economic Forum (WEF, 2017) and in the Bloom Consulting Country Brand Ranking (Bloom Consulting, 2017) and both systems specify that strong destination brand is prerequisite for destination competitiveness.

It has been also sufficiently indicated that strength of the destination brand depends on availability and content of the online information about the destination. More and more tourists are using online sources to decide where to travel and what to see.

Destination Brand Equity

A destination is understood as an experience supplier and is referred as "a brand name of a place that binds the different product and services provided by a destination together" (Jin, Weber, & Bauer, 2009).

Branding emerged as a means to represent differentiation in competitive market where similar products or services are offered. "A brand is a distinguishing name and/or symbol (such as a logo, trademark, or package design) intended to identify the goods or services of either one seller or a group of sellers, and to differentiate those goods from those of competitors" (Aaker, 1991).
Destination branding is more complex than the just product names and symbols (Pike S. , 2005). It is assumed that tourists see a destination as a product and the concept of brand can be applied to tangible as well as to intangible elements (Murphy, 1998). There are multiple definitions of destination branding, most comprehensive is following: "The marketing activities that support the creation of a name, symbol, logo, word mark or other graphic that both identifies and differentiates a destination; that convey the promise of a memorable travel experience that is uniquely associated with the destination; that serve to consolidate and reinforce the recollection of pleasurable memories of the destination experience, all with the intent purpose of creating and image that influences consumers' decision to visit the destination in question, as opposed to an alternative one" (Blain, Levy, & Ritchie, 2005).

Customer-based Brand Equity Models for Tourism Destination

Different elements form the overall destination attractiveness and destination brand. Considering that leading force for building destination brand is a consumer, Aaker (Aaker, 1991) and Keller (Keller, 1993) developed consumer-based brand equity (CBBE) model, which supports destination professionals a tool to assess how successfully the brand has been positioned in the minds of consumers.
The CBBA methodology initially was applied to destinations in 2006 and identified the following brand dimensions: awareness, image, quality, and loyalty (Konecnik, 2006). It was tested on Slovenia tourism destination from the point of view of Croatian and German tourists.

Brand Awareness of Destination

Aaker (Aaker, 1996) mentioned that Brand awareness is the strength of the brand's presence in the mind of the target audience. In relation to tourism Brand awareness is interpreted as "what someone knows about a destination" (Konecnik & Gartner, 2007). If a customer recognizes a certain brand name, the brand has higher chance of being selected (Tam, 2008). Awareness is an image of the destination in the tourist's minds and is developed beforehand and during the travel into the destination. Brand awareness is an integral part of the brand equity and is seen as a main component of a brand in tourism (Kim & Kim, 2005).
Brand awareness has been assessed in many instances through direct experience that a tourist has had with a place (Konecnik & Gartner, 2007). Brand awareness results in brand equity by creating a brand node in consumer's memory, providing sense of familiarity, and acting as an indication of trust. Brand awareness is the result of consumer's interaction to a brand (Alba, 1987).

Brand Image of Destination

Brand image is emotional perceptions about the brand. In tourism studies brand image is defined as an individual's perception and set of impressions of a place. A destination's image can be developed based on the understanding of a region's characteristics (Jalilvand, 2012) and defined as the expression of knowledge, impressions, and emotional thoughts an individual has of a particular place (Sun, 2013).

In measuring the brand image have been various approaches. Aaker (Aaker, 1992) proposed the brand associations and suggested that brand associations ultimately define the brand's positioning. Keller (Keller, 1993) proposed that brand image is personal expression or self-esteem, later added category of experiential attributes. The brand attitudes are closely interconnected with the overall perceived quality of a brand and still there is no commonly accepted measure for the destination brand image.

Brand Quality of Destination

Brand quality frequently is understood as the concept of the perceived quality by customers relative to alternatives (Aaker, 1991).

In tourism studies, quality is often operationalized as popularity (Lee & Back, Attendee-based brand equity, 2008). Boo et al (Boo, Busser, & Baloglu, 2009) compared brand quality to brand performance, since it is related to how destination meets tourists' functional needs. Destination Brand Quality infers that tourist was treated fairly and honestly.

Frequently brand quality is operationalized through the customer's expectation of the quality considering the expenses. For instance, in the studies by Chen and Tsai (Chen & Tsai, 2007) and Echtner (Echtner, 1993) quality is measured in regards to the extent the price is reasonable for procured services.

Brand Loyalty of Destination

The concept of brand is defined as the commitment to re-buy a product or service in the future. Researchers have incorporated loyalty into their analyses of tourism products. Success in the tourism depends not on the first purchase but on repurchase. "No brand can survive over time without some degree of loyalty" (Sun, 2013).

In tourism, loyalty is frequently investigated in terms of behavioral loyalty, which means repeat visits, and attitudinal loyalty, which is positive feelings towards a destination leading to recommendation (Pike S. , Customer-based brand quity for destinations: Practical DMO performance measures., 2007), (Konecnik & Gartner, 2007) (Boo, Busser, & Baloglu, 2009). It is believed that while a tourist might not visit the destination again, he or she may stay loyal in attitude and provide positive word-of-mouth review.

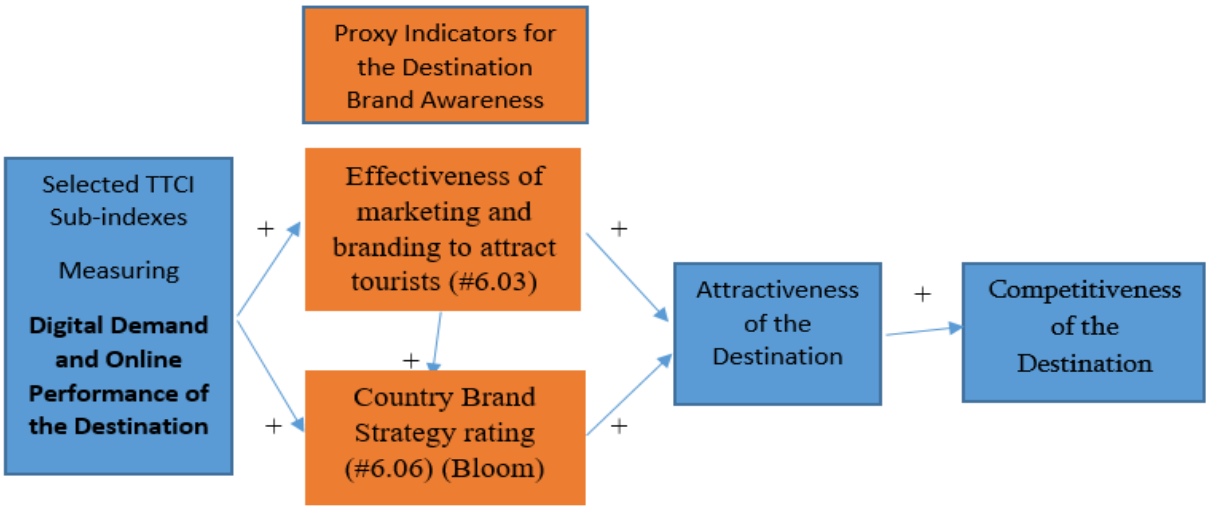
Due to the importance of loyalty for long-term tourism development, multiple studies look into causal relationships between loyalty and its antecedents. Loyalty is dependent on the following

constructs: novelty seeking, pull and push motivation, image, expectations, awareness, quality, experience, positive and negative emotions and satisfaction (Chen & Tsai, 2007).

VI. Factors Influencing Destination Brand Awareness

There are many factors framing visitor's destination brand awareness and different models can be developed on those factors. As a result of literature review the following model was developed to demonstrate relationship between the factors referenced in this study.

Figure 2. The Model Demonstrating Relationship between Digital Demand and Online Performance of the Destination with the Brand Awareness Proxy Indicators.



The pathway relation of dimensions on Figure 2 are as follows:

Digital Demand and Online Performance of the Destination influences Destination Brand Awareness;

Effectiveness of marketing and branding to attract tourists has positive relationship with the Country Brand Strategy rating;

Effectiveness of marketing and branding to attract tourists and the Country Brand Strategy rating have positive effects on the Attractiveness of the Destination and consequently on Competitiveness of the Destination.

This study is targeting first two relationships. Therefore, is proposed to identify sub-indexes from the Travel and Tourism Competitiveness Index (TTCI) of the World Economic Forum (WEF, 2017) interpreting digital demand and online performance of the destination and after assess strength of their relationships with the brand awareness proxy variables.

In this study the destination brand awareness is represented by the following proxy variables: a) Effectiveness of marketing and branding to attract tourists (TTCI index #6.03); and b) Country Brand Strategy rating (TTCI index #6.06).

Variable #6.03 - Effectiveness of marketing and branding to attract tourists

This variable is included in the World Economic Forum's Executive Opinion Survey (Browne, 2014) and measures responses on the questions "How effective is your country's marketing and branding campaigns at attracting tourists? (1 - not effective at all, 7 - extremely effective).

The Executive Opinion Survey 2015 captured the opinions of over 14,000 business leaders in 144 economies between February and June 2015. The country averages for 2015 is combined with the 2014 averages to produce the country scores.

Argument for using this variable as a proxy for the destination brand awareness is that to have effective marketing and branding to attract tourists, respective country should establish strong brand awareness of its destination.

Variable #6.06 Country Brand Strategy rating

This variable evaluates the accuracy of the strategy of NTO by a formula that compares the most popular brandtags for a specific country to the brandtags most heavily promoted by that country's NTO. (Bloom Consulting, 2017)

Argument for using these variables as a proxy for destination brand awareness is that to have effective marketing and branding to attract tourists, respective country should build strong country brand, including through increasing its brand awareness. Same time, these variables measure performance effectiveness of national tourism organization, which in case of Georgia is the Georgian National Tourism Agency (GNTA). Therefore, by looking closer to those variable, is possible to evaluate related performance of the GNTA.

Variables Effecting Destination Brand Awareness

Tourism brand awareness is interpreted as "what someone knows about a destination" (Konecnik & Gartner, 2007). Destination brand awareness is influenced by the information available online about the destination. As highlighted in the earlier chapters, today, tourists are identifying where to travel based on online searches; therefor, online information accessible to travelers, is significant influencer on their preferences and consecutive decisions.

Following sub-indexes were identified from the TTCI ranking (Tables 1) as once that are accessible online to tourists, prior to the visit of the destination and which might be obtained to assess attractiveness, safety, and accessibility of the destination.

Table 1. List of TTCI Sub-indexes Measuring Online and Digital Performance of the Destination

Sub-index
2.02 Reliability of police services
2.04 Index of terrorism incidence
4.04 Treatment of customers
5.01 ICT use for business-to-business transactions
5.02 Internet use for business-to-consumer transactions
5.03 Individuals using the internet
5.04 Broadband internet subscribers
7.01 Visa requirements
8.02 Hotel price index
8.03 Purchasing power parity
9.07 Threatened species
10.06 Number of operating airlines
12.02 Quality of tourism infrastructure
12.03 Presence of major car rental companies
13.01 Number of World Heritage natural sites
13.04 Natural tourism digital demand
14.01 Number of World Heritage cultural sites
14.02 Oral and intangible cultural heritage expressions
14.05 Cultural and entertainment tourism digital demand

Results

Stepwise regression was first proposed by Efroymson (Efroymson, 1960). This is an automatic procedure for statistical model selection in cases where there is a large number of potential explanatory variables, and no underlying theory on which to base the model selection. The procedure is used primarily in regression analysis, though the basic approach is applicable in many forms of model selection. This is a variation on forward selection. At each stage in the process, after a new variable is added, a test is made to check if some variables can be deleted without appreciably increasing the residual sum of squares. The procedure terminates when the measure is maximized, or when the available improvement falls below some critical value.

Having identified dependent (sub-indexes #6.03, #6.06) and independent variables (other TTCI sub-indexes) we should analyze strength of their relationships. The relationship was assessed by the step-wise linear regression method and Table 2 and 3 demonstrates results of the test:

Table 2. Step-wise Regression Model for Dependent Variable: #6.03 Effectiveness of Marketing and Branding to Attract Tourists

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.107	.247		.432	.666
	Quality of tourism infrastructure, 1-7	.865	.048	.792	18.090	.000
2	(Constant)	-.050	.241		-.207	.836
	Quality of tourism infrastructure, 1-7	.850	.046	.778	18.401	.000
	Threatened species	.033	.008	.171	4.037	.000
3	(Constant)	-.354	.232		-1.524	.129
	Quality of tourism infrastructure, 1-7	.734	.048	.671	15.196	.000
	Threatened species	.042	.008	.219	5.401	.000
	Reliability of police services, 1-7	.183	.034	.241	5.387	.000
4	(Constant)	-.421	.229		-1.838	.068
	Quality of tourism infrastructure, 1-7	.698	.049	.639	14.261	.000
	Threatened species	.037	.008	.192	4.704	.000
	Reliability of police services, 1-7	.206	.034	.270	6.002	.000
	Visa requirements	.006	.002	.121	2.873	.005

a. Dependent Variable: Effectiveness of marketing and branding to attract tourists, 1-7

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.792[a]	.627	.625	.55617
2	.810[b]	.656	.652	.53556
3	.837[c]	.701	.696	.50063
4	.844[d]	.713	.707	.49147

a. Predictors: (Constant), Quality of tourism infrastructure, 1-7

b. Predictors: (Constant), Quality of tourism infrastructure, 1-7, Threatened species

c. Predictors: (Constant), Quality of tourism infrastructure, 1-7, Threatened species, Reliability of police services, 1-7

d. Predictors: (Constant), Quality of tourism infrastructure, 1-7, Threatened species, Reliability of police services, 1-7, Visa requirements

The model identifies four variables as the most critical for interpreting the dependent variable #6.03 Effectiveness of marketing and branding to attract tourists. These are: #12.02 Quality of tourism infrastructure, 1-7, #9.07 Threatened species, #2.02 Reliability of police services, 1-7, and #7.01 Visa requirements. It seems strange to see variable #9.07 in the list; however, during conducting other tests, similar importance was indicated by stringency and enforcement of environmental regulations, indicating that environmental protection plays critical role in determining destination attractiveness.

Table 3. Step-wise Regression Model for Dependent Variable: #6.06 Country Brand Strategy Rating

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	47.528	4.561		10.421	.000
	Internet use for business-to-consumer transactions, 1-7	5.548	.941	.389	5.893	.000
2	(Constant)	46.027	4.502		10.223	.000
	Internet use for business-to-consumer transactions, 1-7	4.349	1.009	.305	4.310	.000
	Presence of major car rental companies, 1-7 (best)	1.322	.448	.209	2.950	.004
3	(Constant)	48.298	4.595		10.512	.000
	Internet use for business-to-consumer transactions, 1-7	3.618	1.060	.254	3.413	.001
	Presence of major car rental companies, 1-7 (best)	1.280	.445	.202	2.877	.004
	Cultural and entertainment tourism digital demand	.074	.035	.144	2.086	.038

a. Dependent Variable: Country brand strategy rating

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.389[a]	.151	.147	10.25446
2	.433[b]	.188	.179	10.05780
3	.453[c]	.206	.193	9.97199

a. Predictors: (Constant), Internet use for business-to-consumer transactions, 1-7
b. Predictors: (Constant), Internet use for business-to-consumer transactions, 1-7, Presence of major car rental companies, 1-7 (best)
c. Predictors: (Constant), Internet use for business-to-consumer transactions, 1-7, Presence of major car rental companies, 1-7 (best), Cultural and entertainment tourism digital demand

It was expected that variable #5.02 Internet use for business-to-consumer transactions was critical in predicting Country brand strategy rating. Appearance of additional two variables #12.03 Presence of major car rental companies and #14.05 Cultural and entertainment tourism digital demand was not expected to be more important than others for predicting Country brand strategy rating.

Regression Analysis of Combined Variables

As a final step was assessed dependence of dependent variables and all seven independent variables identified in the earlier sections. Assessment results are presented in the Table 4 and 5:

Table 4. Regression Model for Dependent Variable: #6.03 Effectiveness of Marketing and Branding to Attract Tourists

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.218	.210		-1.036	.301
	Internet use for business-to-consumer transactions, 1-7	-.049	.052	-.046	-.953	.341
	Presence of major car rental companies, 1-7 (best)	-.003	.017	-.006	-.152	.879
	Cultural and entertainment tourism digital demand	.000	.002	.006	.167	.868
	Quality of tourism infrastructure, 1-7	.678	.042	.632	15.989	.000
	Threatened species	.029	.007	.148	4.256	.000
	Reliability of police services, 1-7	.256	.035	.321	7.427	.000
	Visa requirements	.005	.002	.119	3.388	.001

a. Dependent Variable: Effectiveness of marketing and branding to attract tourists, 1-7

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.854[a]	.730	.723	.49665

a. Predictors: (Constant), Visa requirements, Cultural and entertainment tourism digital demand, Presence of major car rental companies, 1-7 (best), Threatened species, Reliability of police services, 1-7, Quality of tourism infrastructure, 1-7, Internet use for business-to-consumer transactions, 1-7

Table 5. Regression Model for Dependent Variable: #6.06 Country Brand Strategy Rating

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	45.810	5.059		9.055	.000
	5.02. Internet use for business-to-consumer transactions, 1-7	3.441	1.236	.216	2.784	.006
	12.03. Presence of major car rental companies, 1-7 (best)	1.961	.403	.304	4.866	.000
	14.05. Cultural and entertainment tourism digital demand	.112	.041	.166	2.736	.007
	12.02. Quality of tourism infrastructure, 1-7	-.896	1.000	-.058	-.896	.371
	9.07. Threatened species	.066	.162	.023	.407	.684
	2.02. Reliability of police services, 1-7	.428	.813	.037	.526	.599
	7.01. Visa requirements	-.004	.037	-.006	-.098	.922

a. Dependent Variable: Country brand strategy rating

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.545[a]	.297	.278	11.67192

a. Predictors: (Constant), Visa requirements, Cultural and entertainment tourism digital demand, Presence of major car rental companies, 1-7 (best), Threatened species, Reliability of police services, 1-7, Quality of tourism infrastructure, 1-7, Internet use for business-to-consumer transactions, 1-7

Merger of those seven variables had small impact on explaining results on the dependent variable #6.03 Effectiveness of marketing and branding to attract tourists; however, it changed level of R Square from 0.206 to 0.297 for dependent variable #6.06 Country brand strategy rating. It is proposed to use all seven independent variables in selected final model.

Those seven indicators are selected as a key factors determining destination brand awareness.

5.02. Internet use for business-to-consumer transactions, 1-7

12.03. Presence of major car rental companies, 1-7 (best)

14.05. Cultural and entertainment tourism digital demand

12.02. Quality of tourism infrastructure, 1-7

9.07. Threatened species

2.02. Reliability of police services, 1-7

7.01. Visa requirements

As a conclusion, in regards to Georgia, country can improve its destination brand awareness by 1. Promoting Internet use for business-to-consumer transactions; 2. Attracting additional major car rental companies; and 3. Improving quality of its tourism infrastructure.

Limitations

This research has multiple limitations. First and most important is assumption that destination brand awareness is possible to approximate with the sub-indexes Effectiveness of marketing and branding to attract tourists and Country brand strategy rating. None of those two variables are directly measuring brand awareness and are considered as a proxy indicators. Their performance can be effected by multiple other factors in addition to the destination brand awareness. However, relationships identified within this work are interesting and can be considered during improving destination attractiveness and its brand awareness.

Information used in the development of the model and in the testing relationships consists of data collected from multiple sources and from periods ranging from 2015 to 2017. This data has different levels of reliability and accuracy.

Another limitation which should be highlighted is usage of stepwise regression analysis in shortlisting variables from the larger group. The principal drawbacks of stepwise multiple regression includes bias in parameter estimation, inconsistencies among model selection algorithms, an inherent problem of multiple hypothesis testing, and an inappropriate focus or reliance on a single best model. However, during selection of individual variables, were used pre judgment that each and every variable was somehow related to the subject of the study; therefore any selected variable was possible source.

Building a smart ecosystem. A view over the European continent

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Abstract

We are used to look at geographical, economic, political or even religious maps of our planet. Cybernetics, which is a relatively new science that forcedly makes its way through already existing sciences, it's creating its own map. Obviously, despite the young age, its complexity does not permit detailing of each component. This article focuses on the digital divide on the European continent. Starting from an analysis on local communities in Romania from 2010 up till now, the intention to extend the study to the entire region and then to the whole continent did not take long to appear, but unfortunately the complexity and lack of resources are proving to be a great barrier. In spite of this, we analysed at a national level (using a series of criteria proposed by the ECDL Foundation, together with those proposed by UNESCO and adapted according to the literature studied) all European countries, which possess as we know, important similarities and differences related to their political, social, and economic contexts. As a result, we created a map of the level of information technology's adoption amongst population. The research questions this study investigates is how contextual features serve to influence the adoption of technology among different countries in Europe – focusing in particular at Romania. Due to the fact that high dispersion of results for indicators within the same country raises many questions, we conclude saying that the success of IT&C projects is to a large extent contingent upon political and economic contexts, while being less related to social contexts. The article also wants to be a scientific debates initiator, whose purpose is to present, in a formal framework: university courses, conferences, seminars, solutions and strategies of increasing the value of the indicators in question.

Keywords: Smart city, technology, IoT

Introduction

Nowadays, the globalization and economic competition should make governments to prioritize education – in all of its aspects: quality, equal opportunities for everybody and lifelong learning. Experts and policymakers are agreeing on the fact that Information and Communication Technology (ICT) helps people around the world to compete, despite the geographical borders, by adding new skills to each learner. Moreover, they emphasize the fact that ICT is a multiplier factor

both for educators and learners. On one hand the educators will decrease their expenditure associated with traditional instruction and they improve themselves by an easy access to other trainings and, on the other hand, the learners get new skills and they might get in contact with teachers virtually even if they are living in rural areas.

Beyond all that, there are few questions on the issue of the usage of Information Technology, most of them related to the learning achievements as well as to the ease of retention. Some researchers believe that computers might change the teaching and learning environment (Tapscott, 2019; Carr, 2010; Baltac, 2016), while others are saying that all that matters is the pedagogy and the ICT is only providing a way to deliver the information from teachers to learners (CLARK, 1994). However, the impact of ICT in education is clear and by that we emphasise the importance of integrating it all-over Europe.

I. ICT in education

Education experts, along with policymakers, are trying for decades to include ICT on the educational reforms around Europe – both at the national level as well as for the entire EU. At the European level, Council of European Professional Informatics Societies (CEPIS) is drawing policies for integrating ICT everywhere, including education. Having as a goal "to promote the development of the Information Society through digital literacy, skills, education & research and professionalism" [CEPIS, 2016] CEPIS task force creates in 1995 the European Computer Driving Licence (ECDL) concept, supported by the European Commission through the ESPRIT research programme, "to examine how to raise the levels of digital literacy throughout Europe" (ECDL, 2016). Moreover, by its mission, it is undoubtable that ICT is seen as a way to eliminate exclusion and to improve the quality of life.

Even though we assist to this growing demand for information technology in the educational sector, most of the statistics lack basic information about the policies (Krumova, 2016). The European Commission is not providing proper indicators to measure the inputs and outputs from ICT investments in education – however, datasets regarding students and their performance (regarding ICT) are available.

Unfortunately, to the authors' knowledge, the data available are focused on pupils, students and other learners that are enrolled in the educational system; but there are others, that are not. According to Eurostat "digital divide refers to the distinction between those who have Internet access and are able to make use of new services offered on the World Wide Web, and those who are excluded from these services." (EUROSTAT, 2016). Therefore, beyond the available statistics, there are other categories of people who are not in contact with technology.

II. Methodology

Digital divide might be measured by technical indicators, as some researchers are doing it: Mobile cellular telephone subscriptions, Internet users, Fixed telephone lines, Mobile broadband subscriptions, Fixed broadband subscriptions and so on (Hîncu et al, 2011), but we assume that beyond the digital divide there are strong financial factors that should be taken into consideration as well as social factors and education policies – how much money the government invest in education, for example. Of course, ample research has already investigated the extent to which certain factors are influencing the digital divide (like GDP-ICT penetration relationships or even education and ICT use); however, to the authors' knowledge little research has attempted to understand what conditions should be present for reducing it.

The most significant obstacle in collecting the data was the huge variety of sources – not all of them providing the same figures. Although, the differences were not significant, we took into consideration the sources mentioned below because they clearly provide the most accurate and up to date figures by being well known international organisations and by that, we assume they are trustable.

Therefore, in this article we looked over statistics made on all twenty-eight European countries by UNESCO Institute for Statistics, Council of European Professional Informatics Societies (CEPIS), Internet World Stats, EMEA Satellite Operators Association (ESOA) by their program Broadband for all and European Commission by the Digital Single Market and Digital Agenda scoreboards. The intention is to explore the relationships between economic and social context and the ICT penetration, considering this as being factors that influence the adoption of technology among different countries in Europe (Hrustek et al, 2016; Männel, 2016) – paying a special attention to the Romanian case.

Firstly we looked at the GDP – to have an overall image over the countries, and GDP per capita to better understand the differences among them and then, we had a look at the state investments in the field of education (as percentage of GDP) and in Research and Development (GERD - Gross domestic expenditure on R&D) in the area of Engineering & Technology.

Secondly, but very important in terms of comparison, we looked for the number of Internet users as percentage of population and if they access the global network by a high-speed connection (Broadband).

At the end we draw maps of Europe, highlighting the differences we found, trying to see if, by overlapping them, there are any correlations among the indicators. We must add here that all of the European nations possess important similarities and, of course, differences related to their political, social, and economic contexts. In addition, little to none of the European nations

possesses a similar timeline with regard to the evolutions of their democracies, which makes comparisons of ICT use in each of them particularly interesting.

III. Results

The existence of data, collected systematically by different organisations, helps researchers to find correlations among them. However, the figures must be understood in the local / national context. In many countries the integration of ICT is not the main priority of the local government compared to other objectives, including infrastructure investment - Romania and Bulgaria is lacking on highway infrastructure for example (highwaymaps.eu, 2016) or ensuring an adequate number of doctors per thousand inhabitants and so on (EUROSTAT, 2016).

In the table below, we present the figures we found by searching the open data bases from the organisations we had in focus for this article.

Table 1. A view over the European countries regarding the GDP per capita and the number of Internet users.

	Country (year of entry)	GDP in billions - PPP$	GDP per capita - PPP$	Government expenditure on education as % of GDP	GERD as a % of GDP	GERD - Engineering & Technology	Internet Users % Population	Broadband % Internet Users	Digital Skills (Basic)
1	Austria (1995)	412	47,824	5.56%	2.98%	NA	83.10%	99.00%	73.90%
2	Belgium (1958)	496	43,992	6.38%	2.46%	NA	85.00%	100.00%	66.00%
3	Bulgaria (2007)	126	17,512	4.07%	0.79%	23.70%	56.70%	90.00%	54.80%
4	Croatia (2013)	92	21,880	4.59%	0.81%	41.13%	75.00%	94.00%	52.60%
5	Cyprus (2004)	26	30,734	6.44%	0.40%	25.44%	95.00%	100.00%	55.10%
6	Czech Republic (2004)	339	32,167	4.11%	1.99%	50.17%	79.70%	98.00%	66.20%
7	Denmark (1973)	265	46,635	8.61%	3.08%	4.63%	96.00%	98.00%	58.40%
8	Estonia (2004)	37	28,095	4.82%	1.43%	9.12%	84.20%	88.00%	72.90%
9	Finland (1995)	223	40,601	7.16%	3.17%	NA	93.50%	93.00%	72.50%
10	France (1958)	2,651	39,678	5.51%	2.25%	NA	83.80%	99.00%	72.10%
11	Germany (1958)	3,848	47,268	4.94%	2.86%	NA	88.40%	97.00%	74.80%
12	Greece (1981)	289	26,680	NA	0.83%	39.88%	63.20%	99.00%	63.50%
13	Hungary (2004)	252	25,582	4.23%	1.37%	53.89%	76.10%	92.00%	61.30%
14	Ireland (1973)	254	54,654	5.34%	1.51%	NA	82.50%	97.00%	59.70%
15	Italy (1958)	2,183	35,896	4.17%	1.28%	NA	62.00%	98.00%	70.90%
16	Latvia (2004)	48	24,286	4.91%	0.69%	34.00%	82.00%	83.00%	62.50%
17	Lithuania (2004)	81	27,730	4.61%	1.01%	15.15%	82.10%	97.00%	62.10%
18	Luxembourg (1958)	58	101,926	4.14%	1.20%	NA	94.70%	100.00%	79.50%
19	Malta (2004)	13	29,526	8.29%	0.84%	29.56%	73.20%	100.00%	65.70%
20	Netherlands (1958)	821	48,459	5.61%	1.90%	41.47%	95.50%	100.00%	69.50%
21	Poland (2004)	993	26,135	4.94%	0.90%	52.88%	67.50%	69.00%	65.00%
22	Portugal (1986)	302	29,214	5.28%	1.20%	41.56%	67.60%	100.00%	65.90%
23	Romania (2007)	424	21,403	2.95%	0.38%	42.25%	56.30%	87.00%	35.60%
24	Slovakia (2004)	157	28,877	4.11%	0.88%	48.76%	83.10%	75.00%	67.70%
25	Slovenia (2004)	64	31,122	5.49%	2.38%	53.66%	72.80%	74.00%	66.70%
26	Spain (1986)	1,603	34,527	4.30%	1.23%	NA	76.90%	98.00%	65.90%
27	Sweden (1995)	455	46,420	7.72%	3.10%	NA	94.60%	99.00%	64.30%
28	United Kingdom (1973)	2,692	41,325	5.75%	1.70%	5.23%	91.60%	100.00%	72.10%

Source: UNESCO Institute for Statistics, Internet World Stats and ESOA, European Commission (2016 figures)

As we can see, regarding the GDP per capita (in PPP$ - Purchasing Power Parity, as we found it on UNESCO Institute for Statistics) – we have to mention here that we used for this study the latest of the statistics provided by each organisation (2016) the values for the European countries are widely spread, starting from the highest level – Luxembourg with 101.926 PPP$ per capita, all the way down to Bulgaria with a GDP per capita approximately six times lower (17.512 PPP$). Furthermore, even thought is not our main focus for this article, we were looking at the correlation between the number of years since a specific country is a European Union member and the GDP per capita. We found that the correlation is positive and very strong (Pearson correlation coefficient, r, being 0.651). We see this as a very important contextual factor that contributes to the success or failure of the digital divide policies among European countries.

According to the table below (Table 2.), beside the correlations we have mentioned above, between the number of years since the European countries acceded EU and GDP per capita (r = 0.651) the next strongest correlation is between GDP per capita and the number of Internet users – being r = 0.584. If we take into consideration that the Educational expenditure is correlated with the number of Internet users by r = 0.530, we might think that the policymakers should pay attention more on the education (especially on the field of ICT) in order to contribute to the social category of factors. This statement is strengthened by the very weak correlation between the Internet users and the Digital skills indicator which: r = 0.064.

What the above discussion suggests is that for the social factors to contribute to the success of digital divide policies, other factors should be take into consideration as well – such as contextual factors.

Table 2. Correlation between the data sets indicators presented in Table 1

		Years in EU	GDP per capita	Education expenditure	GERD from GDP	GERD in E and T	Internet users	Broadband	Digital skills
Years in EU	r =	1	.651(**)	.135	.390(*)	-.287	.330	.507(**)	-.099
GDP per capita	r =	.651(**)	1	.158	.386(*)	-.317	.584(**)	.387(*)	-.186
Education expenditure	r =	.135	.158	1	.527(**)	-.449	.530(**)	.311	.076
GERD from GDP	r =	.390(*)	.386(*)	.527(**)	1	-.180	.535(**)	.236	-.052
GERD in E and T	r =	-.287	-.317	-.449	-.180	1	-.432	-.451	-.279
Internet users	r =	.330	.584(**)	.530(**)	.535(**)	-.432	1	.323	.064
Broadband	r =	.507(**)	.387(*)	.311	.236	-.451	.323	1	.278
Digital skills	r =	-.099	-.186	.076	-.052	-.279	.064	.278	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

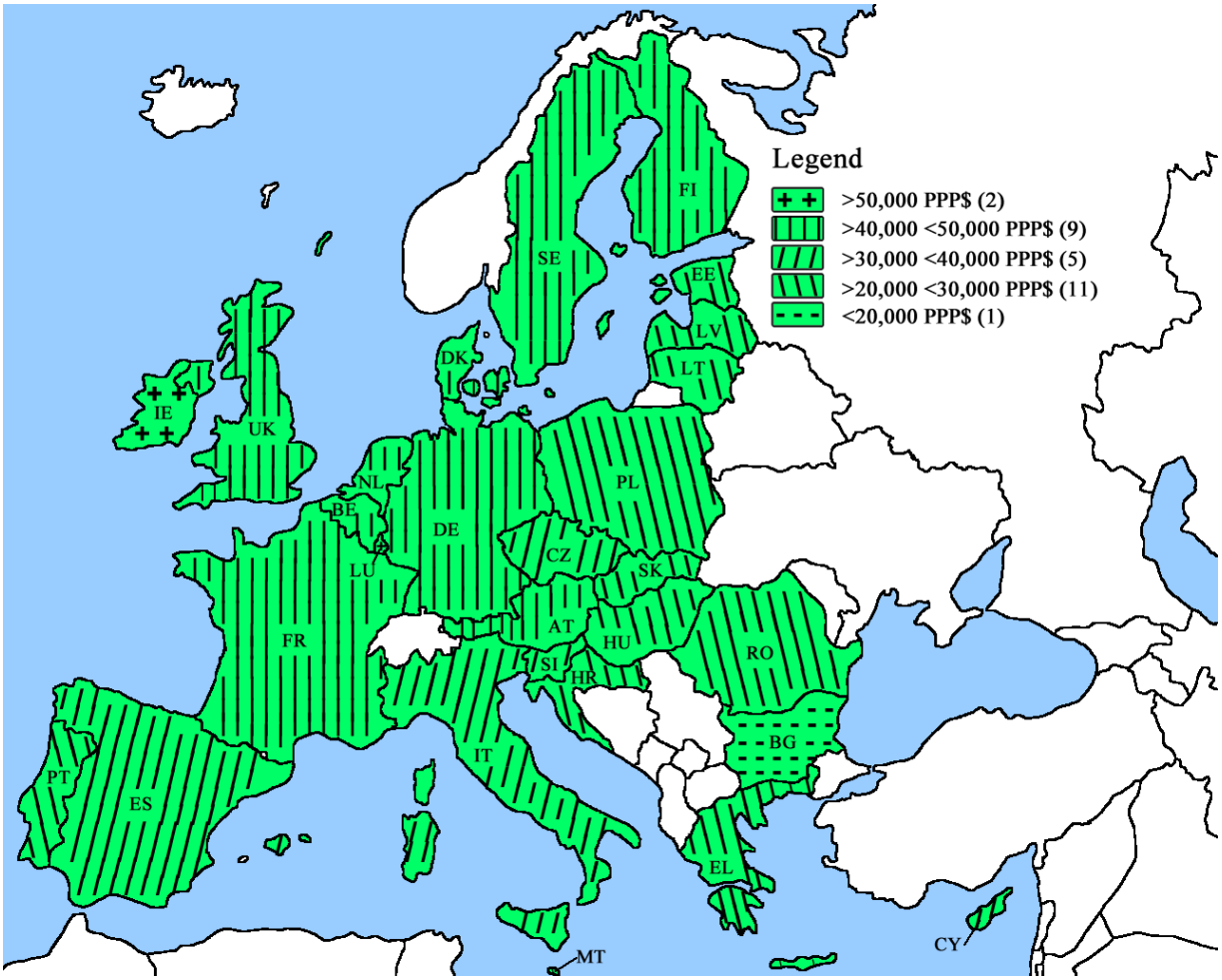

Figure 1. European countries by GDP per capita

On the map above, we can see all twenty-eight European countries by GDP per capita in PPP$ mentioning that France, even though the value for it is 39,678 PPP$, so below 40.000 PPP$ (as on the legend), is has been placed on the upper interval due to the prognoses made by statisticians from UNESCO.

What it is easy to see is the fact that with one exception – Portugal, all of the countries with a value for GDP per capita situated below 30,000 PPP$, are located in Eastern Europe, while all the others are located in Western and Northern part of Europe. An ample body of literature has explored the way in which certain features of an environment influence the sustainability of ICT investments, some taking into consideration the political, social, and economic aspects in such a way that the readers might believe that all of the European countries possesses similar timeline in regard to the evolutions of their democracies. Consequently, it is important for researchers to specify which contextual factors influence the digital divide degree found among the European

countries, rather than aggregate data and general level. However, this article is not focusing on the causes for this segregation; we believe that economists and experts in social sciences are already having the answer for this – we only provide a map with the current situation.

Going further on with our research, we made a different map, this time showing the number of Internet users as percentage from the total number of inhabitants.

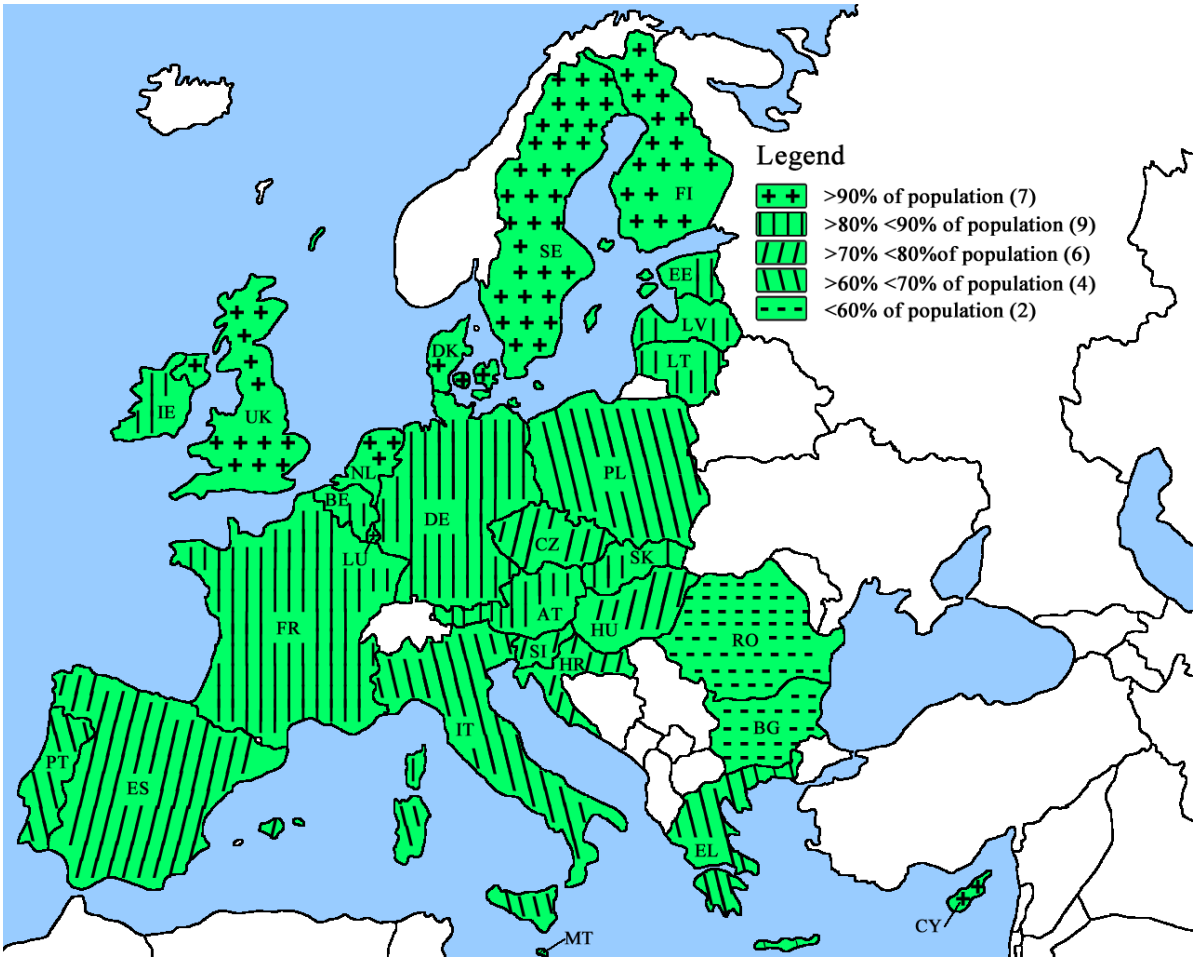

Figure 2. European countries by Internet users

Overlapping those two maps, we can see that twelve countries (43% of the total number of European countries) are perfect match; those are Austria, Belgium, Bulgaria, Czech Republic, Finland, France, Germany, Luxembourg, Poland, Portugal, Slovenia and Spain. As previously demonstrated by the use of SPSS, there is a strong positive correlation in those two sets of data as well – Pearson correlation coefficient, r, being 0.584 between GDP per capita and the number of Internet users as percentage from the total number of inhabitants.

The data specified in the last column of the Table 1. – presenting the connection speed for the Internet users (broadband) shows, with very few exceptions, that high Internet speed connection is available all over Europe no matter the GDP or any other indicators we took into consideration for this study.

While correlating the expenditure for education as well as expenditure in Research and Development in the area of Engineering & Technology with the number of Internet users, we found that r is 0,530 in the first case – showing a medium positive correlation, and -0.432 in the second case – medium negative correlation. That means education must come first. Even though the country is investing in expensive IT solution for people, if they are not prepared to face the technology, the projects fail in achieving their goals.

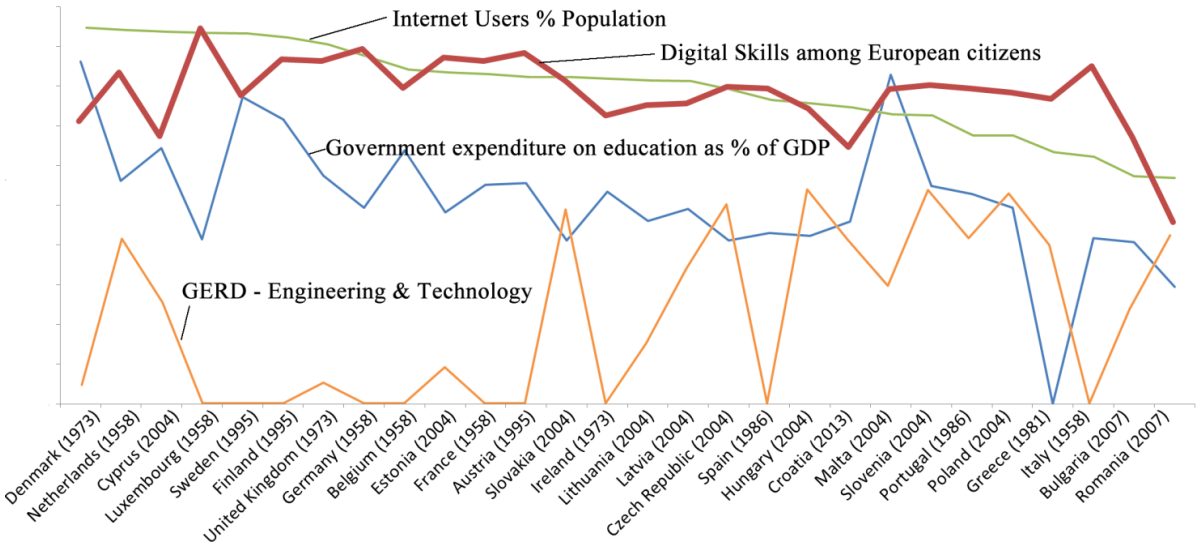

Figure 3. Comparison between Internet users as % of Population, GERD in Engineering & Technology and Government expenditure on education as % of GDP and Digital skills among European citizens

We have to mention here that ten countries did not provide any data about GERD - Engineering & Technology chapter for UNESCO Institute for Statistics; therefore, this correlation might not be very accurate.

On the following map (Figure 4.); we present Europe seen by the number of users with basic digital skills (European Commission, 2016). As we can see from it as well as from the chart presented on the Figure 3., the correlation between the number of Internet users (Figure 2.) and Digital Skills among the European citizens (Figure 4.) is very weak (r being equal to 0.064). That proves the fact

that Internet users are not necessarily prepared for a proper use of ICT. Therefore, we believe that policymakers should be grounded in today's reality, because they are indeed, the only one who can bring about change – nowadays it looks that there are some issues with the resource alignment to the policies intentions. For example, if we are to speak about Romania, even though it has a fast Internet connection (Romania-insider.com, 2016), it is still lacking on other criteria such as Internet users and Digital skills, as we saw from the present study.

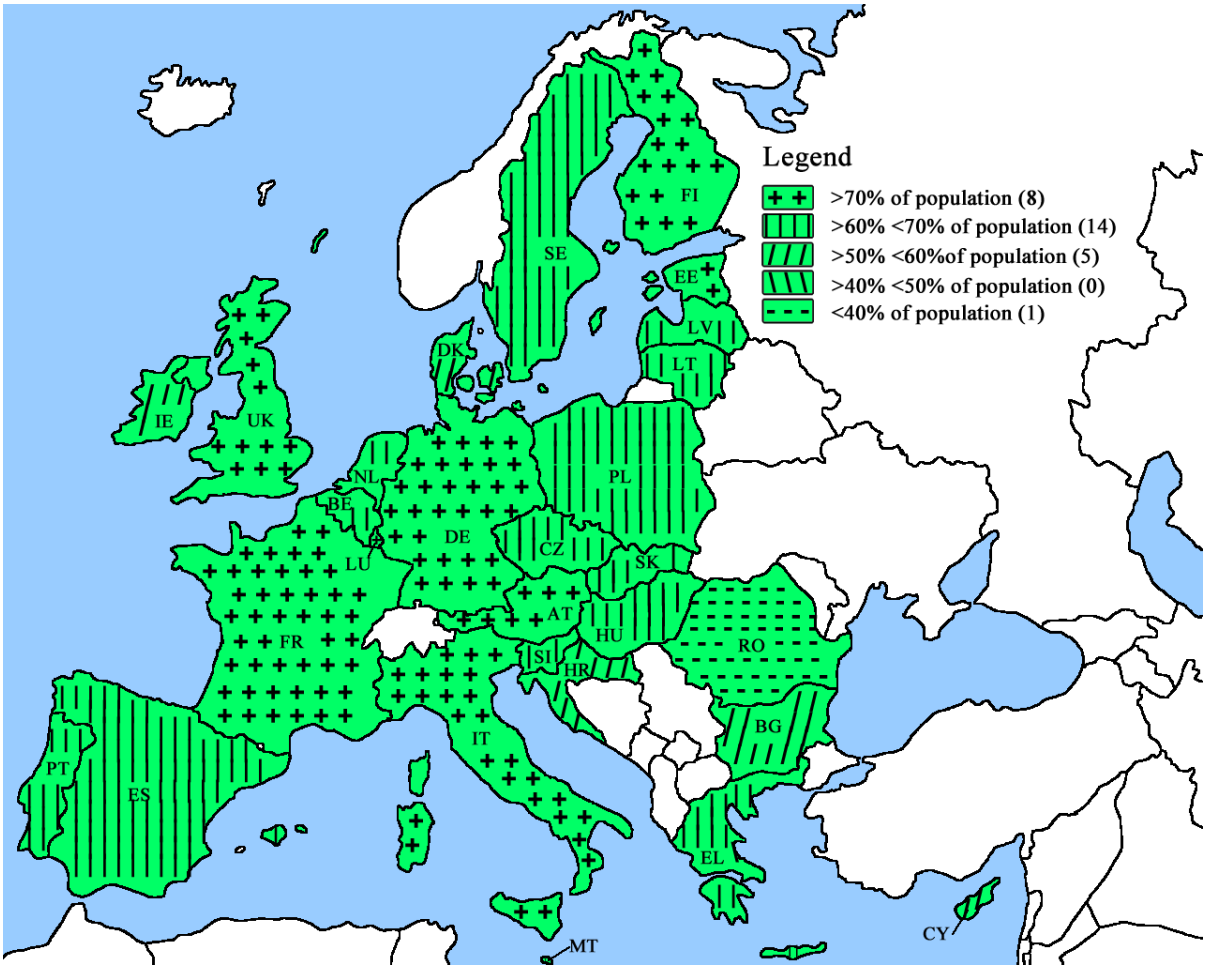

Figure 4. Digital skills in Europe

Conclusions and discussions

This research has attempted to provide a view over the European countries for a better understanding of differences among them regarding the ICT sector development as well as, to briefly present some of the conditions toward the viability related policies. At present, literature

related to this subject, treated the differences among countries only by looking at the differences in figures and not paying attention to some contextual factor (both external and internal), thereby researchers should focus more upon them then looking on the numbers only.

Following ECDL, in the paper Perception and Reality: Measuring Digital Skills in Europe (the study assesses Digital skills and e-literacy in Austria, Denmark, Finland, Germany and Switzerland) we found that people routinely overestimate their abilities (ECDL, 2016). We tend to think that, in Romania at least, policymakers are overestimating citizens as well, and by doing that they don't put too much effort in increasing the level of ICT skills among them.

Some researcher noted that adoption of ICT within a given context is usually seen as contingent upon the prevalence factors related to infrastructure, literacy, income, and perceived needs (Zanello & Maassen, 2011).

ICT Policies and strategies can also fail due to reasons like:

They are viewed as populist gesture for increasing the political capital (Swyngedoouw, 2010);
People from the both sides resist changes that might be seen as imposed (Tyack & Cuban, 1995; Torben, 2013);
Unbalanced approaches (e. g. focus on project itself instead of its goals)
Lack of competences among instructors;
Unbalanced situations between the resource alignment on one hand and policies on the other (Bull et al, 2015).
The authors of this study agree that lacks of resources, political interference, and poor policy design or implementation are important reasons of failure for ICT policies – along with, of course, consistency and long-term perspectives. That should be taken into consideration on further researches.

Taking into consideration the Romanian case, planning and implementing of the ITC policies are spread across various internal actors – therefore having a single coherent vision is difficult, not to mention that this might bring a lack of consistency as well. The involvement of the European Union, who's serving as a source of pressure, makes it even more complicated because the Romanian officials are focusing more on the projects goals and implementation instead on focusing on the social needs. Given the widespread calls for reducing the digital divide applications, researches addressing successful and less successful applications are needed – in order not to repeat the mistakes made already in the past.

According to the data we took into consideration for this research, only two countries matches perfectly on all the three maps – Belgium and Luxembourg, both of them being very high rated. We might think that only they were consistent in their approach (or it was just by accident – we did not study the political context over years neither in those two countries or anywhere else).

However, the correlation we've made should be seen, understood and should be taking into consideration by the policymakers all over Europe. Through such a comparison, it is possible to show differences and similarities between the countries and how these contribute toward to the successful adoption of digital divide applications within the nations.

Beyond the differences, the internal digital-divide on some countries increases rapidly due to the quick adoption of ICT in urban centres versus rural areas. Taking that into consideration, ICT in education should be seen from two perspectives: the first reflects the role of it in providing support to people that cannot access the infrastructure while the other one is regarding the e-learning environment. By the last one, both teachers and the learning process itself is evolving rapidly encouraging collaboration and sharing knowledge.

The findings resulting from such a comparison are fairly intuitive, implying that they should also be easily generalizable to all e-government applications throughout various contexts, ranging from wealth advanced nations to those with fewer resources.

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Further research will bring into the analysis other instruments like ICT in education, e-government, the price for Internet connection and so on, attempting to see if there is any correlation between some indicators already used and those we have just mention.

Analysis of Support Organizations of Georgian Startup Ecosystem

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Introduction

The purpose of this research is to access the entrepreneurial ecosystem in Georgia. Research is not focused on startups itself, but the support organizations that operate in Georgia, which aim to help startups succeed or play important role in development of entrepreneurial environment. This paper efforts to assess the strategy and current situation in support organizations, like universities, research, science, technology and innovation facilitation organizations, government organizations, startup accelerators, different support programs, and identify the challenges they have in serving the purpose of development of entrepreneurial ecosystem in Georgia.

To evaluate the current situation and the potential of the local ecosystem, different players were researched using combined methods; six higher education institutions (two private and 4 public institutions), Startup Accelerators, Fablabs and other support organizations of entrepreneurial ecosystem. Different aspects, as funding, strategy of the ministry of education, functionality of support organization were appraised. To research Fablabs, observation was conducted, as well as telephone and face-to-face interviews. For HEIs and businesses, interviews and questionnaires were used, answers were gathered and analyzed. To access approaches of government and other support organization, their declared strategies and information provided by them to public were analyzed.

In many ecosystems, HEIs and university-based researches are one of the main sources of innovation in an ecosystem. The research identified challenges HEIs are facing, regarding their strategy and research policies that prevents them to effectively contribute to the development of entrepreneurial ecosystem.

Restrictions of this research are that it does not include thorough analysis of all types of support organization. Primary data (interview, questioners and observation) were collected only on HEIs, businesses and fablabs. For government policy conclusion is based on strategic plan declared by government and no implementation was analyzed in a systematic manner. To access funding opportunities and activities of accelerators, only desk research was conducted, and it includes descriptions provided by these organizations only.

I. Science, Technology and Innovation

The development of doing research and materializing innovative ideas does not have long history in the region, particularly because of the recent liberation from the Soviet Union, although 27 years may seem long. After the collapse of the Soviet Union, Georgia faced difficulties; reorganization of the state, stabilization of the economy and the production capacity. Under such conditions Science, Technology and Innovation ecosystem could not remain unaffected: the research demand disappeared, the structure/organization of the Science, Technology and Innovation system did not correspond to the country's and global needs.

Due to this lack of experience, it is difficult to keep up the pace regarding development of research and innovation with the developed world. Government lack the necessary funds to help boost the developmental process due to the requirement of health care and social security.

The main sources of funding of the Science, Technology and Innovation in Georgia are almost exclusively public, with minor contribution from the private sector. In principle the Ministry of Education, Science, Culture and Sport of Georgia provides core funding for the research institutes, while the universities are financed through students' fees. Competitive funding in the form of grants is provided by Shota Rustaveli National Science Foundation and by GITA for research and innovation activities respectively. However, the borderline between core funding and grants is not very clear since there is a feeling that often the grants are equally distributed to all disciplines in order to top-up the (very low) salaries of permanent researchers if not for fully financing some of them.

Shota Rustaveli National Science Foundation of Georgia under the Ministry of Education, Science, Culture and Sport of Georgia, which is main donor for scientific projects funding, launched applied research grant call on 2011 and from 2016 trend of decreasing funded projects is observable: In 2012 Shota Rustaveli National Science Foundation funded 24 projects, in 2013 – 38 projects, in 2014 – 27 projects, in 2015 35 projects, in 2016 – 26 projects, in 2017-2018 – none. (Shota Rustaveli National Science Foundation of Georgia, 2019)

According to the material received from the authorities the main challenges that the Science, Technology and Innovation funding is facing in Georgia include the following topics:

insufficient public and private funding in all Science, Technology and Innovation sectors

lack of coherent budgetary policies and a mid/long-term strategy in support of Science, Technology and Innovation

lack of long-term funding programs;

lack of a well justified and reasonable selection in allocating funds.
Despite the efforts of "Enterprise Georgia", government-funded organization which attempts to provide funding for small business startups to help stimulate the private sector, demand-based researches are rarely funded by any organizations.

II. Higher Education Institutions

Another significant aspect for the subject is education. In our research we focused on higher education. We investigated several public and private HEIs to evaluate the depth of the problem, that slows down the process of the development of entrepreneurial ecosystem. Target groups identified within HEIs are students, researchers and PhD students, academic and administrative staff, startuppers and invited lecturers. We identified challenges HEIs are facing and needs that must be fulfilled to reach the aims of each stakeholder and meet national and regional priorities, in terms of the development of entrepreneurship and entrepreneurial education in Georgia.

Interviews and questioners were used to assess the situation in different HEIs in Georgia. We see the gap between education, research and business. Businesses rarely turn to HEIs for solutions to their problems or for the researches. On the other hand, the researchers conducted in HEI is not view as a source of income or as a need to industries.
In Georgian HEIs, authors of MBA and PhD papers were interviewed. Most of them pointed out that they addressed to topics that are relevant and actual in an academic sense, nevertheless did not focus on commercialization potential of the work.
As for entrepreneurial education and ecosystem, some universities (e.g. Ilia State University, Caucasus University, University of Georgia and Batumi State University) have their own creative labs, where students are welcome to work on their innovative ideas, startup accelerators, Fablabs, etc. Nevertheless, there seems to be the need to integrate the strategies of the lab with universities strategy to make its activities more effective for ecosystem development. The problem in linking lab strategy and HEI strategy is obvious in some cases.
Even in HEIs, where labs' strategy is integrated in university strategy number of researches are very low and very few of them have commercial potential. For example, in case of University of Georgia, there is a startup accelerator "Startup Factory", but it does not have a good connection to education process, it is more like an outsource company running its business in the same building. Even though this HEI has a very big number of MBA and PhD students, none of them work with an accelerator to think of an application of their research.
We analyzed the mission and strategies of some of the HEIs and in most of them we see the same trend; HEIs are more focused on rising good employees rather than innovators, who can turn their ideas into profitable businesses or create innovative solution for the businesses. Even though HEIs

are now trying to keep up with the trend and are opening different units in their spaces to help entrepreneurs, the projects are rarely demand driven.
Other issues and needs identified based on an internal research of HEIs are: some institutions do not promote, or motivate commercialized researches among its research and academic staff, institutions do not have sufficient facilities for training students in modern research and innovation methods, some institutions are not connected to any national innovation and research networks.

For all HEIs following challenges were identified:

– Most of the programs lack effective integration of research and practical component, as well as connection to real businesses. Moreover, there is a lack of orientation on innovation and entrepreneurship. Although these aims are included in curriculums, implementation part is usually poor.
– All universities have many MAUs with different businesses, but in reality, few of them are involved in education or innovation process.
– All HEIs lack experience in connecting researches to businesses and commercializing their research outputs.
– There is an absence of strategy and unit that is responsible to connect education, research, business and integrate it in HEI's strategy.
– Staff does not have an experience to operate units the function of which is to integrate several directions (education, research, business).
– Attitudes are more conservative and HEIs do not have an experience or strategy to motivate innovation and entrepreneurship among academic and administrative staff and students.

For researchers:

– There is a lack of funding
– Lack of communication platform where they can exchange ideas, find businesses that need their works
– Lack of experience of commercialization, trust and knowledge how to protect their intellectual property.

Needs identified for each target group in higher education institutions were:

– Need of more research capacity, skills, knowledge and means of communication to identify the linking points of business needs, it's researches, commercialization strategies. The target groups, who's direct needs are above mentioned factors are researchers, academic staff, PhD students, startuppers.
– Need of skills to create a strategy to integrate researches with entrepreneurship education, moreover to integrate its innovation labs with the rest of the processes within an organization.

The target groups, who's direct needs are above mentioned factors are students, researchers, academic staff, PhD students, administration, invited lecturers.

– Need to create a strategy how to motivate research staff to be more focused on commercialization of their inventions. The target groups, who's direct needs are above mentioned factors are researchers, academic staff, PhD students, administration.

– Lack of strategy to commercialize researches make them more business-demand-driven. The target groups, who's direct needs are above mentioned factors are students, researchers, academic staff, PhD students, administration, invited lecturers.

– Patents universities obtained are provided by National Intellectual Property Center of Georgia "Sakpatenti", which protects IP only in Georgia. Universities need aid to make research activities more internationalized. The target groups, who's direct researchers, academic staff, PhD students, administration.

Other needs and challenges pointed out were:

– Strategy of attracting and involving young staff in scientific-research activities of HEI
– Joint research activities with international partners
– Institutional Cooperation with International Research Units
– Quality assessment mechanism of Research Results of Evaluation;
– Personnel scientific productivity assessment system;
– No research sharing forum in the ownership of HEI

To sum up, the strategy HEIs are following now is not serving progress of innovations and entrepreneurship through education and research commercialization. Labor market requirements are reflected in the study programs, but usually none of the departments is responsible to communicate researches to business or to promote education and researches based on businesses' needs for innovation. Communication is limited on the opposite direction as well. Need to make education/research process more demand driven and focused on innovation was identified, which will contribute to reducing the gap between education, research and business. Moreover, there is a need to improve skills and the competence of students, academic and administrative staff, to make them eligible to be a part of global research society, and promote commercialized and demand-driven researches through trainings, workshops and other knowledge sharing activities. Improving physical environment in institutions involved in entrepreneurial ecosystem could play the positive role (computers, ebooks for digital library and 3D printer, other equipment, improve research facility). Effective communication between institutions, development of the structured networks between business and educators, including key stakeholders, sharing of best practices and expertise, as well as the development of the new communications platform, sharing knowledge and experience with other interested parties, creating communication platform, meetings and conferences and media resources could accelerate the process of development.

III. Businesses

The result of the analysis of business organization (telephone interview of HR managers, higher level manager and middle level managers, based on questionnaires sent in advance) HEIs are more viewed as a source of HR so they cooperate with HEIs to help them identify the skills and knowledge they will need to do their jobs in the future. Students and researchers at HEIs are not viewed as a source of innovation and problem solving for the business.

Representatives of Businesses pointed out in interviews the lack of awareness of opportunities, to use HEIs and research organizations and benefits they might have for them, hence lack of skills to use HEI as an affordable source of innovation. Moreover, the lack of qualified workforce in the labor market is an essential obstacle for about one third of companies introducing innovations. HEIs need to develop new strategy to create and maintain closer link with businesses and have up-to-date information on market demands, moreover, need to improve curriculum that reflects contemporary condition on the market. Businesses need to be in closer communication with HEIs, for their development. Moreover, demand-based researches need to be promoted, that reflect the needs of businesses.

IV. Funding

One of the most important aspects of startup ecosystem is an availability of funding for startups and support establishments. One of the main sources of funds for entrepreneurs is provided by Enterprise Georgia. Enterprise Georgia initiated and implemented State Program “Produce in Georgia”. 441 businesses were supported by this program, some were existing small businesses and some were created during this project. Total investment to these businesses was more than 1 billion Georgian Lari, more than 16,600 new jobs created. (Enterprise Georgia, 2018)

Georgian Innovations and Technology Agency (GITA) offers small grants for prototyping and short-term travel to conference, workshop etc. 84 grant projects were funded, in total there was issued 290 000 GEL. 48 projects were funded within the framework of the small grant program in the direction of prototypes. (Georgia's Innovation and Technology Agency, 2018)

Governmental program Startup Georgia - which allows startuppers to get funding from 15 000. “The program consists of two components: innovative component and high-tech component. Investment Funding is up to 100,000 GEL, the applicant’s share participation is 95%”. (Startup Georgia, 2018)

SC Partnership Fund’s “main objective is to promote investment in Georgia by providing co-financing (equity, mezzanine, etc.) in projects at their initial stage of development”. The number of the projects implemented or under implementation in various sectors with a total value of over USD 2.5 billion. (JSC Partnership Fund, 2018)

Organizations such as USAID, The US Embassy, The Japan Embassy in Georgia, International Trading Centre, EU Commission, etc. provide different grant programs. In terms of research grants, proposals, tenders and other funding possibilities, Georgia is not eligible for many funding or other

opportunities. Most of the funding opportunities are offered for specific matter-related projects, such as development of agriculture in different regions and they rarely address the development of healthy ecosystem that include industries, research organizations and educational institutions.

All the above mention organizations are either government organizations or are using government money. As for private sector, we do not have any important funds provided by businesses other than loans. Startuperi is a TBC Bank program aimed at promoting startups and stimulating new business initiatives. The program includes financial and non-financial support for startups. Financial support consists of loans with low interest rate.

V. Government

National objectives declared by the Government of Georgia are discussed in Georgia Strategic Plan 2020, which was developed based on EU commission recommendations. "Both government and private sector spending on research and development remain low, which is reflected in various international evaluations and ratings: the 2013 edition of the Global Innovation Index (GII) ranks Georgia 73rd, the 2012 edition of the Innovations Capacity Index (ICI) ranks Georgia 44th (out of 131 countries), and the 2013-2014 edition of the World Economic Forum's "Global Competitiveness Index" (GCI) ranks Georgia in the following positions (out of 148 countries surveyed):

Capacity for innovation—118th; and
Company spending on R&D—128th

The Government will facilitate research and development with a view to developing the private sector and improve competitiveness; this implies supporting applied research by increasing state funding and introducing various instruments to do so. The Government will also improve access to funding—especially for SMEs, which are the drivers of innovation." (Government of Georgia, 2016)

As mentioned in strategy of Georgia for the near future, the state strives to "facilitate formation of a common space for education and research through improving doctor's degree level and streamlining legislation, which regulates integration of learning and research in tertiary education system. Moreover, the State strives to promote commercialization of researches and in order to achieve that, it is crucial to deepen connections between the private sector and the educational system, science and technologies systems, "with a view to introducing applied R&D in practice and improve the efficiency of its commercialization." effective integration of learning and research and development of research culture in higher educational institutions are mentioned to be the top priority of the country. Furthermore, in Georgia the priorities of the country, that project is addressed to are "The training of workforce that has adequate qualification, improvement of

auxiliary infrastructure needed for R&D in tertiary education and scientific establishments, as well as research laboratories and integration of R&D processes in tertiary education system. A unified system for monitoring the research activities in tertiary education and scientific-research establishments and result-oriented funding models will be launched." (Government of Georgia, 2016)

VI. Fablabs

Fablab, also known as Factory Lab, is high-tech workshop equipped with tools which offers customers the digital fabrication. We tried to investigate, if Fablabs and startup accelerators that were established using different grant projects are sustainable after the completion of the program that funded them. Furthermore, our goal is to identify, if such labs that are operated by HEIs have higher survival rate after the completion of the grant projects.

As we researched the Georgian startup ecosystem, it was identified that there are 24 Fablabs officially registered in the country, not all of them are created or operated in the same way. Founding of most of them were funded by different grant projects. Focal labs of this research were 21 of them, that are integrated with educational institutions. 7 out of 21 are located in the higher education institutions, 1 is integrated with a school and 13 are integrated with vocational education institutions.

Observation and interview methods were used to assess the current situation in labs. We tried to contact all of the registered fablabs, however only 11 of them responded that they were active. The others did not have managers or any other employees, were not functioning or were closed. As results show, fablabs that were integrated with vocational education institutions had 31% survival rate – 4 actives out of 13 registered, with 3 or less employees. On the other hand, fablabs that were integrated with higher education institutions had about 86% survival rate – 6 actives out of 7 registered, with 3 or more employees.

The fablab that is integrated with school remained active.

10 out of 24 fablabs are located in the capital of Georgia – Tbilisi and the remaining 14 are in other regions. Thus, 41% of labs are located in Tbilisi. 70%, 7 of the 10 were functioning and active, however, in the regions we see a different picture; from total of 14 labs only 7 are functioning, so we have 50% of active labs.

We assessed the equipment and the capacity of the labs as well; from 24 fablabs all 24 have laser machines, CNC and 3D-printers, 23 of them have vinyl cutting capabilities, 4 of them have circuit production capabilities, 3 – precision milling. It should be noted that those fablabs that had more than 4 types of machines were all active.

Fablabs in Tbilisi

Summary of the research of 10 fablabs in the capital city of Georgia – Tbilisi. One of them is fab lab of Georgian Technical University (GTU) which is financed by the university and has 3 employees. Working hours start at 09:00 and ends at 18:00. Their main goal is spreading and

introduction of innovation. The fablab is affordable for everyone. Their lab capabilities include 3D Printing, CNC-Milling Laser, Precision milling and Vinyl cutting.

Fablab of Academy of Art is funded by university and fees. They have 3 employees and working hours start at 09:00 and end at 18:00. Their main goal is spreading and introduction of innovation. Fablab is affordable for everyone and capabilities include 3D Printing, CNC-Milling Laser and Vinyl cutting.

Fablab of Ilia State University is funded by university and fees and they have 4 employees. Working hours start at 09:00 and end at 18:00. Lab's main goal is spreading and introduction of innovation and is affordable for everyone. Lab capabilities include 3D Printing, CNC-Milling Laser, Precision milling and Vinyl cutting.

Techpark lab is financed by government and fees and have more than 5 employees. Working hours start at 09:00 and end at 18:00. Main goal is spreading and introduction of innovation and is affordable for everyone. Lab capabilities include 3D printing, CNC-Milling, Circuit production, Laser, Precision milling, Vinyl cutting.

Fablab of European School is funded by the school and have 3 employees. Working hours start at 10:00 and end at 18:00. Their main goal is supplementing the students' education and is affordable only for student. Lab capabilities include 3D printing, CNC-Milling, Circuit production, Laser, Precision milling, Vinyl cutting.

Fablab of Tbilisi State University is funded by the university and have 3 employees. Working hours start at 10:00 and end at 18:00. Lab's main goal is spreading and introduction of innovation and is affordable for everyone. Capabilities include 3D printing, CNC-Milling, Circuit production, Laser, Precision milling, Vinyl cutting.

Labs Emisi, Spectre, Mermisi and Fablab in Gldani are registered but we could not access them, they are either closed or not active.

Fablabs in Batumi

Fablab of Black Sea University is located in Batumi, we were unable to connect with them, they are not active. Lab capabilities include 3D printing, CNC-Milling, Laser, Vinyl cutting.

Fablab of Batumi State University (BSU) is financed by university and has 3 employees. Working hours start at 09:00 and end at 18:00. Their main goal is spreading and introduction of innovation and is affordable for everyone. Lab capabilities include 3D printing, CNC-Milling, Laser, Vinyl cutting.

Fablabs in other regions

Fablab "Opizari" is in Akhaltsikhe and is financed by vocational school (college) and has 2 employees. Working hours start at 10:00 and end at 18:00. Their main goal is supplementing the students' education and is affordable only for students. Lab capabilities include 3D printing, CNC-Milling, Laser, Vinyl cutting.

Fablab "Erqvani" funded by vocational school is in Ambrolauri. Working hours start at 09:00 and end at 18:00. We don't have information on number of employees and this lab can be inactive. Lab capabilities include 3D printing, CNC-Milling, Laser, Vinyl cutting.
Fablab "AISI" funded by vocational school is located in Kachreti and has 3 employees. Working hours start at 10:00 and end at 18:00. Their main goal is supplementing the students' education and is affordable only for students. Lab capabilities include 3D printing, CNC-Milling, Laser, Vinyl cutting.
Fablab "Akhali Talgha" funded by vocational school has no information and seems not active.
Fablab "ATSU" funded by university is located in Kutaisi and has 3 employees. Working hours start at 09:00 and end at 18:00. Lab capabilities include 3D printing, CNC-Milling, Laser, Vinyl cutting.
Fablab "Techpark Telavi" funded by government is located in Telavi and has 3 employees. Working hours start at 09:00 and end at 18:00. Their main goal is spreading and introduction of innovation and is affordable for everyone. Lab capabilities include 3D printing, CNC-Milling, Laser, Vinyl cutting.
Fablab "Techpark Zugdidi" funded by government is located in Telavi and has 3 employees. Working hours start at 09:00 and end at 18:00. Their main goal is spreading and introduction of innovation and is affordable for everyone. Lab capabilities include 3D printing, CNC-Milling, Laser, Vinyl cutting.
(fablabs.io, 2018)

VII. Other Organizations in Georgian startup ecosystem

Entrepreneurial ecosystem in Georgia consist of different organizations, out of which, very few are private profitable businesses. Most of them are funded either by government or other donors. Some of the main players are:
Enterprise Georgia - government institution mandated to facilitate export and private sector development through a variety of financial and technical support mechanisms.
Enterprise Georgia initiated and implemented State Program "Produce in Georgia". 441 businesses were supported by this program, some were existing small businesses and some were created during this project. Total investment to these businesses was more than 1 billion Georgian Lari, more than 16,600 new jobs created. (Enterprise Georgia, 2018)
GITA – Georgian Innovations and Technology Agency – which was founded with the purpose of "formation of an ecosystem which improves all kinds of innovations and technologies in our country, to promote a commercialization of knowledge and innovations, to stimulate using them in all fields of economy, to create an environment for the growth of innovations and high-tech products and developing high-speed internet nationwide". GITA provides a combination of products and services that are key tools for developing a stable startup ecosystem; small grants program, Startup Friendly, Startup Beats, Boot Camp, common working space, Incubator, Registry

of Ideas, training portal and the IT support system. GITA offers small grants for prototyping and short-term travel to conference, workshop etc. (Georgia's Innovation and Technology Agency, 2018)

Tech Park - One of the main projects of Georgian Innovation and Technology Agency, which is focused on creating an ecosystem in innovations and technology fields. Tech Park creates physical space, where is accumulated technological, educational and professional resources, which is intended to serve knowledge-based economy development". (Georgia's Innovation and Technology Agency, 2018)

Sakpatenti - governmental agency – a legal entity of public law. "In accordance with the Georgian legislation, "Sakpatenti" determines the policy in the field of intellectual property". (Sakpatenti, 2018)

Horizon 2020 - Is the largest program of EU research and innovation, for scientific or research findings, innovations and the best ideas. Horizon 2020 tasks are: to develop world-class science, to avoid barriers in innovations' field and create a favorable environment for them through cooperation in public and private sector. (European Commission, 2018)

Start-Business Solutions – company declares that they offer startups the complex service-from the refining the business idea to the real business and development. main products are: Development of the business model; Business plans; Market research; Supporting the creation of new businesses; Business idea inquiry/development/preparing; Attracting investment; Supporting the sales of startups. (Start Business Solutions, 2018)

InvestMe – is a public funding platform that connects, innovative and creative projects with the public for financing. This method of attracting finances is relatively new and created by Internet-technological development. It should be noted that similar platforms (Kickstarter, Indiegogo, Crowdfunder, etc.) are very popular in developed countries. (Investme, 2018)

Startup Grind – is an independent startup community, actively educating, inspiring, and connecting more than 1,500,000 entrepreneurs in over 500 chapters. It operates and contributes to startup ecosystems in 125 countries through events, media, and partnerships with organizations like Google for Startups. The main activity if this organization is organizing monthly events featuring successful local founders, innovators, educators and investors who share lessons learned on the road to building great companies. (Startup Grind, 2019)

StartUp Marani – This organization aims to connect different players in startup ecosystem with each other. (Startup Marani, 2018)

Tbilisi Startup Bureau - Tbilisi Startup Bureau helps Georgia develop a stable ecosystem, organizes different events and meetings for startuppers. (Tbilisi Startup Bureau, 2018)

Impact Hub - co-working space where you can meet, collaborate, produce, learn, network, create. Organizes different events, competitions, meetings. (Impacthub, 2018)

Terminal - Coworking/Offices/Event Hall

VIII. Accelerators

– Start-up Accelerator C10 – Was established by the Erasmus+ project EucaInvest, is now funded by Caucasus university. It provides Caucasus University students and other users with the most appropriate help for them: Team formation, Start-up acceleration, Preparing for pitching, Funding etc. Accelerator regularly delivers trainings and workshops to different audiences for free and cooperates with most of the players in an ecosystem. (Caucasus University, 2019)

– UG Startup Factory - Located in Tbilisi. Accelerator was created by company Future Laboratory, with support of The University of Georgia. The main goal is to give startups enough knowledge and motivation to succeed. Currently it has 5 people employed. Working hours: 10:00-19:00. Any bright and motivated mind can use the co-working space. Startup Factory's main income stream is from co-working space fee and successful startup dividend. (coworker.com, 2018)

– Tech Park - The organization offers a set of products and services to interested parties and potential beneficiaries, which is focused on helping the innovations and technology-oriented entrepreneurs and startups to walk the distance from the idea to the functionality income models. (Georgia's Innovation and Technology Agency, 2018)

– GeoLab – offers accelerator program offers people 3-4 weeks intense course, which help startups to develop their business ideas, understand the ways of getting the information of their needs. (Geolab, 2019)

– Spark- Is an accelerator that operates under the city hall, offers coworking space for free, consulting and organizes different meetings and events for startuppers and other players of the ecosystem. (Spark, 2019)

– Zoomout – is a pre-acceleration program by Ilia Sate University that strives to help startup to get in global accelerators. (zoomout, 2019)

Conclusions

To speed up the development of the entrepreneurial ecosystem in Georgia, education and effective cooperation of each player is crucial. HEIs need to reduce the gap between education, research and business and to foster the role and importance of institutions that contribute to the development socio-economic development of society by fostering cooperation between enterprises. As our research shows, survival rate of startup accelerators and Fablabs that operate under HEIs are much higher. For HEIs it is important promote researches and innovations that are more tailored to solving problems businesses are facing in real life. Encouraging innovations and entrepreneurial education excluding business sector has shown not to be effective. For business organizations HEIs could be a good source of innovation and problem solving with less resources. For researchers, there is a vast need of funding, especially for practical researches, research grants are very scarce. If there was a good, effective communication platform, where they could communicate and find the needs of businesses, it would be easier to find resources from the private sector.

Problematic issues for all stakeholders are that there is no communication platform to connect researchers, HEIs and industry for cooperation and difficulty to communicate opportunities, offers, innovations among HEIs, researchers, industry and government.

HEIs can have a great contribution to fostering the drive of creativity, innovation and entrepreneurship into education, “one of eight key competences for lifelong learning which citizens require for fulfilment, social inclusion, active citizenship and employability in a knowledge-based society”. This includes creativity, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives.

Health Capital, Primary Health Care and Economic Growth

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Abstract

Investments in healthcare are important in terms of formation of the health capital. The research aims to find out the role of the health capital in economic growth of a Georgia (country). Methods: This study is based on the secondary sources of data. The study data were obtained from Human Development Report, Ministry of Labor, Health and Social Protection of Georgia. As a proxy indicator for measuring the health capital we used the life expectancy, the morbidity prevalence and Incidence rate, maternal and children's mortality rate, outpatient referral rate, the state expenses on healthcare. Results: The average life expectancy has increased in recent 25 years. The maternal and children's mortality rate has decreased, healthcare expenses have become higher and outpatient referral rate has also become more constant character. All these have a positive influence on the people's health and country's economic growth. However, the state expenses on health and primary healthcare referral rate is far below the European level. Patients are less motivated to go to a primary healthcare for prevention and decide to receive medical service only when they are in critical condition. All this shows that the primary healthcare system cannot fulfill the role of the so-called 'gatekeeper'. In general, the primary healthcare system has not developed in Georgia. Conclusion: As the health capital fulfills significant role in terms of the country's economic growth in a long-run perspective, it is advisable to promote the development of the primary healthcare system and taking WHO recommendations concerning state healthcare expenses into account.

Keywords: Health capital, human capital, primary care, economic growth.

Introduction

According to the OECD, human capital is defined as: "the knowledge, skills, competencies and other attributes embodied in individuals or groups of individuals acquired during their life and used to produce goods, services or ideas in market circumstances".

The human capital concept was elaborated in the 1960s. T. Schulz was the first to use the term 'human capital' in which he implied a combination of investments in a human being that improve his/her working capacity. Schulz's ideas were further developed by the so-called 'Chicago School' representatives (G. Baker, P. Bowen, E. Hansen) who have established the main assumptions of the human capital concept. According to the Nobel Prize Laureate G. Baker 'the human capital represents a combination of innate capabilities as well as acquired skills, knowledge and motivation that are used for producing goods and services and represent a source of human and social income'. Becker observes that investments in human capital should fall with age as the period over which returns can be accrued decreases; Yet, investments in health clearly increase with age, even after retirement when health has lost its importance in generating earnings.

Initially, education was considered to be the main factor in the human capital formation. In 1970s, M. Grossman presented the health capital role according to which a person is interested in increasing his future incomes due to investments in education and health. Consequently, human productivity increases and causes economic growth in turn.

The health capital implies investments in a human being that are necessary for maintaining his health and capacity. Health influences a person's wellbeing. It represents the goods that can be consumed as well as invested. Health, as the consumable good, implies that it gives pleasure to a person. Thus, health, as the consumable goods is required. Health, as an investment advantage means that a person is able to work and make incomes. The health investment advantage is determined with the value of the benefit received as a result of the advantage. For example, the life expectancy growth means additional years of work through which a human being receives incomes and invests in his own capital. Disabilities, illness, mortality are perceived as the loss in terms of the social health, causing significant economic losses. Naturally, investments in the health capital promote increasing the number of population capable of working, as well as reducing illness and death rate which in turn has a positive impact on a human capital.

Health determines the length of time a person is able to spend on working. A healthy person almost never misses any of the working days, therefore, he/she is more productive. Health reduces the number of the days of illness and the number of working days increases. It means that health production influences profitability of a person. A healthy person's satisfaction level as well as number of healthy days for work increase. It means the possibility of receiving incomes that is reflected on the growth of incomes.

In this respect, health status represents an important part of the human capital. A human being receives the familial initial health supply. But when the physical capital is damaged, the health capital may lose value day by day. Therefore, people invest in health aiming to make it better. It can be said that the health capital has an individual as well as social importance for a human being and society. According to Grossman, the health capital is given more significance as other goods

and services are consumed in the modern era. Samuel Preston was the first who studied the relation of health condition with incomes per an individual. According to him, there is a positive relation between the national income level and life expectancy. Initially, the role of health in less developed countries was focused on. Health was considered as the way to escape poverty. Afterwards, when analyzing the difference between poor and rich countries, the role of health in terms of the economic growth was emphasized. Studies showed that health condition was much more important in the economic growth than education level.

Improved health condition of population has a positive effect on economic productivity. Five main mechanisms are distinguished.

I. Productive, fruitful efficiency

Health and education together represent a factor that determine an individual's productivity and efficiency. Empirical evidence shows that healthy workers have a better physical and mental health and therefore are more productive. Health also influences the labor provision as health problems become the reason for not being present at work. At the same time an individual with health problems may arrive at work but all his efforts may happen to be less productive.

II. Life expectancy

Improved health promotes improvement of the life expectancy. In turn, as people expect a long life, investments in education become more attractive and motivation of making more savings at the pension age also emerges. As a result, life expectancy growth encourages improvement of qualification of education and savings' level.

Life expectancy growth also has an impact on the demographic structure of the population. Reduction of the infant mortality rate and improvement of the life expectancy causes proportional growth of the worker population; but in the long-run perspective, an opposite effect is expected against the background of the birth rate reduction. In highly-developed countries, the birth rate reduction causes decrease of the employable population.

III. Ability to learn

Studies prove that improvement of the health condition promotes development of better cognitive abilities as well as skills and positive educational results. The better an individual's health

condition, the higher the cognitive skills are. Also, the level of being absence at school or work is lower and individuals are more able to absorb and accumulate knowledge.

IV. Creativity

Better educational results achieved due to good health have a positive effect on creative and innovative activities. Educated people are good innovators and more flexible in terms of technological changes. Therefore, improvement of education accelerates technologic development. It can be concluded that healthy and educated workers respond to technological changes as well as innovative processes more easily; that represents a factor which determines successful implementation of changes.

V. Inequality

The different nature of the investments made in human capital causes different incomes. In this context, improvement of health may be considered as a tool for reduction of inequality of incomes. The lower the inequality between people's incomes, the more people will be allowed to finance their education and health needs that will further improve their economic condition. Considering that health and incomes are closely related to each other, reduction of inequality between incomes will cause reduction of inequality of health. Therefore, investment in the health sector will reduce inequality between incomes, increase labor productivity and promote economic growth.

VI. Methodology

This study is based on the secondary sources of data. The data were collected in a period of 1990 to 2015. The data for this study were obtained from Human Development Report, Ministry of Labor, Health and Social Protection of Georgia (of various years). Economic growth of a country is determined by increase in the size of the economy of a nation. Commonly, economists measure economic output of a country through its Gross Domestic Product (GDP). We have taken Gross Domestic Product as a dependent variable in our study. As a proxy indicator for measuring the health capital we used the life expectancy at birth, the general and initial illness rate, the general, maternal and children's mortality rate, outpatient referral rate, the state expenses on healthcare, the share of state expenditure in total expenditure on health, state expenditure on health as a percentage of the Gross Domestic Product.

VII. Results, discussion

Georgia is a country in the Caucasus, located at the crossroads of Eastern Europe and Asia, with a population of almost 3.7 million. Georgia is a relatively new country, gaining independence after the collapse of the Soviet Union in 1991. According to World Bank statistics, Georgia is a lower-middle income country.

Since 2013, the Universal Healthcare Program (UHCP) has been enacted. The goals of UHCP are: to increase geographic and financial access to primary health care; to rationalize expensive and high-tech hospital services by increasing PHC utilization; and to increase financial access to urgent hospital and outpatient services.

Universal health care program covers: ambulatory consultations of a family physician, primary health care services, planned and urgent outpatient assistance, extended urgent hospitalization, planned surgeries (including daycare inpatient), treatment of oncological diseases, and child delivery.

In March 2017, the next wave of health care reforms was announced and this brought further differentiated packages for those covered under the UHCP. The most striking feature of this set of reforms was that the highest income group of around 43 000 people was excluded from the UHCP from July 2017, as they are expected to purchase VHI. Under the UHCP, the purchasing function has been consolidated to the Social Services Agency (SSA)

Georgia has made significant progress in improving access to health services under the UHCP. Financial protection has also improved and fewer households face financial hardship from having to pay for health services, but OOP payments still dominate health expenditure despite the rapid increase in public expenditure.

VIII. Health capital and Georgia

The following factors influence formation of the health capital of population: illness of people, disabilities, mortality rate, life expectancy, healthcare expenses and outpatient referral rate (table 1).

According to the table, in the period of 1995-2015 GDP increased 6.7 times, that indicates the country's economic growth [22, 23, 24, 25, 26]. The human development index has increased by 12.2% in this period (0.83% annual growth) and hit 0.754 by the year of 2015; According to the rate, Georgia is ranked 76th among 188 countries.

Table 1. Factors influencing health capital, Georgia

	1990	1995	2000	2005	2010	2015
GDP per individual (current prices), USD	1614.6	569	692	1530.1	2964.5	3796
Human development index	-	-	0.672	0.711	0.735	0.754
Life expectancy	71	70	71.8	73.9	73.9	74.4
Morbidity Prevalence rate (per 100 000 population per year)	-	-	27006.5	35823.3	49553.9	101154.1
Morbidity Incidence rate (per 100 000 population per year)	22498.2	9077.5	10623.8	15902.6	26076.6	59677.3
Mortality rate per 1000 people	9.6	7.8	10.7	9.3	10.6	13.2
Infant mortality rate (probability of dying by age 1 per 1000 live births)	22	29	21.2	18.1	12	8.2
Under-five mortality rate (probability of dying by age 5 per 1000 live births)	47	34	27.2	19.4	13.4	11.9
Maternal mortality ratio (per 100 000 live births)	40.9	55	60	23.4	19.4	27.1
Birth Rate – total number of live births per 1,000 in a population	14	11	10	10.7	10.7	15.9
Outpatient referral rate per individuals	-	1.1	1.5	2.1	2.1	3.6
General government expenditure on health (mln GEL)	-	31	61.7	194	414.8	656.2
General government expenditure on health as a percentage of total government expenditure	-	4.9	16.7	19.5	23.1	29.8
General government expenditure on health as a percentage of total expenditure on health (%)	-	0.9	1.2	1.7	2	2.24
Out-of-pocket healthcare expenditures (%)	-	95	83.3	80.4	77	70

GEL Georgian Lari

The average life expectancy growth has had a positive impact on the country's economic growth. The same has been done by reduction of maternal and children's mortality rate and higher state expenses on healthcare.

According to some scholars, the rate of life expectancy is characterized by certain stagnation in the last decade.

Infant mortality rate (probability of dying by age 1 per 1000 live births) decreased from 22 to 8.2 in 1990-2015 and under-five mortality rate (probability of dying by age 5 per 1000 live births) - from 47 to 11.9. For comparison, under-five mortality rate (probability of dying by age 5 per 1000 live births) is 11.3 in Europe.

Maternal mortality rate (per 100 000 live births) dropped from 41 to 27.1 in 1990-2015. For comparison, maternal mortality rate (per 100 000 live births) in Europe is 16.

General government expenditure on health has increased in recent 25 years, and almost doubled in the latest 3 years; that has a positive impact on the population's health. But, despite these, Georgia is still significantly lagging behind the threshold set by the WHO recommendations as well as the rates of many poor countries with low incomes.

According to the World Health Organization, the government expenditure on health should constitute at least 15% of total state expenditure. Although government expenditure on health have significantly increased in Georgia, they are still very low in respect of the state budget reaching 6.9% only [28]. This rate is almost twice less than the recommendations by WHO, while it constitutes 15-20% in the developed countries.

According to WHO recommendations, state expenditures on health should represent more than 40% in total healthcare expenditures. State expenditures on health care in Georgia represents 29,8% of the total expenses on healthcare, thus Georgia is far below the recommendations of the WHO [28]. Unlike Georgia, the following countries have crossed the threshold: Armenia (41.7%), Kazakhstan (53.1%), Ukraine (54.5%), Kyrgyzstan (59%); As for China, Lithuania, Turkey, Germany, Japan, this rate is relatively 55.8%, 66.6%, 77.4%, 76.8%, 82.1%. Due to all above mentioned, Georgian people have to pay by themselves for healthcare issues (up to 70%).

Outpatient referral rate increased from 1.1 to 3.6 per person as the state expenses increased, that positively reflects on the population's health condition. But this rate is still less than that of European countries (7.5 per person), which is caused by the circumstance that patients are less motivated to go to a doctor for prevention and decide to receive medical service only when they are in critical condition. Patients prefer hospital service. According to the Ministry of Health, only 50.9% of the patients have referred to the primary healthcare facilities [34. All this shows that the primary healthcare system cannot fulfill the role of the so-called 'gatekeeper'. In general, the primary healthcare system has not developed in Georgia.

Conclusion, Recommendations

The average life expectancy has increased for recent 25 years. The maternal and children's mortality rate has decreased, healthcare expenses have become higher and outpatient referral rate has also become of more constant character. All these have a positive influence on the people's health as well as country's economic growth. However, the state expenses on healthcare and outpatient referral rate is far below the European level. As the health capital fulfills significant role in terms of the country's economic growth in a long-run perspective, it is highly advisable to promote the development of the primary healthcare system and taking WHO recommendations concerning state healthcare expenses into account.

The Specific Aspects of the Economy of the Republic of Azerbaijan

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I would like to start with a general discussion of the role of democracy in modern international relations and in the development of the country's economy. Much has been said about the interdependence of the economy and international relations, but the fact that their interdependence in our time depends on democracy is an interesting prism for scientific research.

The national economy as a part of the international economy, is in turn part of international relations. In the modern market economy, the argument is well known that the development of the national economy of any country cannot be isolated without the need for strong international economic ties. Strong international economic relations require strong bilateral and multilateral cooperation with other international actors, countries and international organizations. As long as the bonds between the economic partners are firm and stable, the chances of success are increased.

Naturally, the benefits of economic ties are largely and directly depended on how strong, stable, progressive and successful is partners economy. For the success of a thriving national economy, whose isolated development is unthinkable, stable and strong international ties with a successful market economy are vital.

Economic relations are part of international relations, and it is obvious that a long-term stable economic union cannot be established between states A and B if they do not have the same values. In this case, we can only assume the existence of the so-called “forced” relationships that disappear as soon as the first alternative appears. It is because of this fear, or at least the postponement, that Country B will try to create an image acceptable to it in the eyes of Country A and draw facades for this purpose.

When it comes to economics, supply and demand are clearly interconnected, but consumers and suppliers are constantly trying to improve their own conditions. Customers want more suppliers on the market, which allows them to choose the best stable partner they can find. The supplier wants to be the best partner for the client to avoid the replacement with a competitor. As long as there is no real competitor in the market, on the one hand, supplier will try to impose his rules on the consumer and improve the quality of the consumer’s attitude towards him, and on the other

hand, supplier will try to convince the consumer that this is the best alternative, and attempt consumer not to have the desire to review economic relations.

Using this logical chain, a close relationship between the quality of the national economy, international economy, international relations and the quality of democracy can be seen. Indeed, if we look at the economic relations between Azerbaijan (as a supplier and transporter of energy resources) and EU member states (as an importer of energy resources). This connection is stable at this stage, but the governing methods of the ruling political elite and the situation with human rights are widely criticized by authoritative Western human rights organizations, including some Western partners too. In particular, the criticism concerns: the field of human rights and freedoms; The field of freedom of speech and expression; Insecurity of the right to a court; The existence of political prisoners; Excessive use of force to suppress opposition political parties, their supporters and the media; Inadequate conditions for journalists and bloggers; discrimination; Women's rights; Protection of labor rights; Statements by senior officials of the ruling political elite of Azerbaijan about such criticism, in their opinion, are unfounded. For example, at the 72nd UN session on September 20, 2017, some of the priorities of the President of Azerbaijan were as follows:

Protection of human rights and fundamental freedoms.

Leading country in the global energy market.

An important exporting country, not only in the field of energy resources, but also in the field of intelligence export;

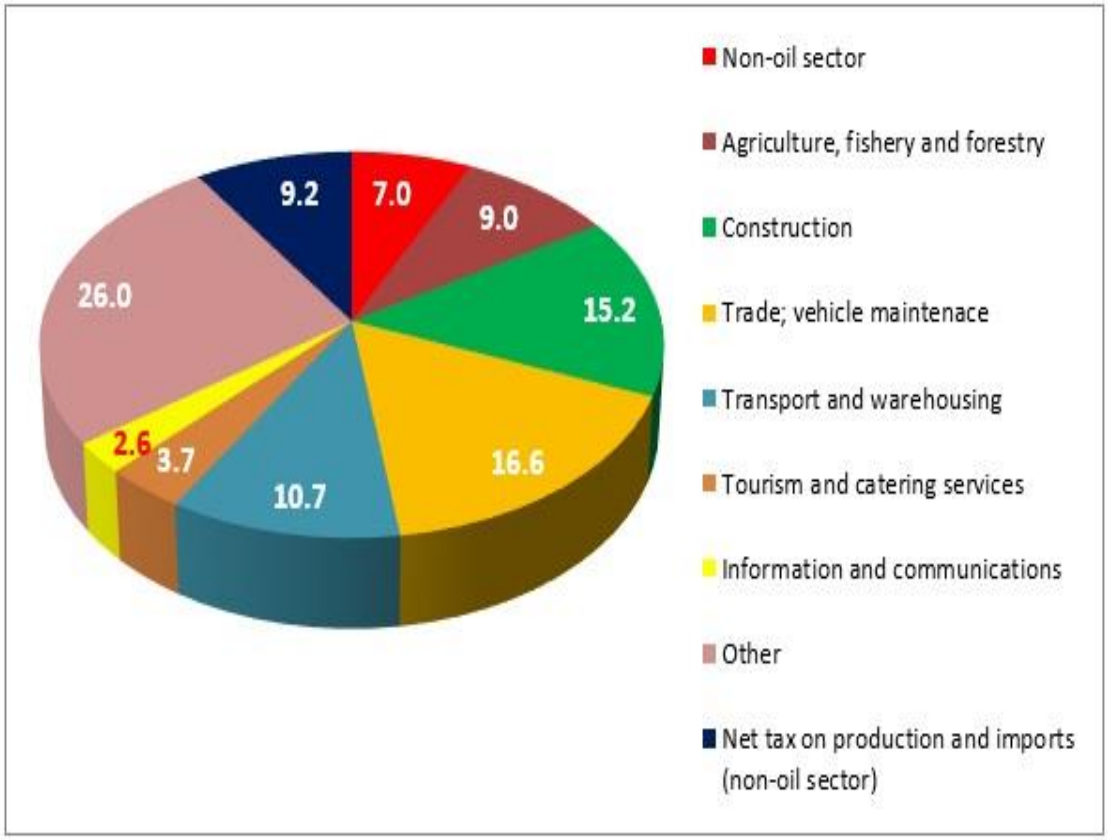
“Azerbaijan is an independent country with an independent foreign policy based on the interests of its own population”

Separate mention should also be made of periodic measures by the Azerbaijani authorities, such as the creation the Anti-Corruption Council.

The second important feature of the Azerbaijani economy is the period of transition from a planned Soviet economy to a market economy, while the Soviet legacy that has survived to this day is largely expressed in corruption, nepotism and the Soviet style of government. Reputable international organizations working in the field of human rights, for example: “Human Rights Watch”, “Reporters Sans Frontieres”, “Transparency International”, “Freedom House”, characterize the management style in Azerbaijan as an authoritarian. I would like to emphasize why the style of authoritarian rule is a threat to the development of the country. At the same time, civil society, critical thinking, personal and civil liberties are at stake, and this is actually the driving force behind the need to force the ruling government to pursue an effective and active domestic and foreign policy for the good of the state.

The third interesting feature is the dependence on one sector of the national economy, in the case of Azerbaijan, the indicators of the economy's dependence on the energy sector are high and the rate of economic diversification is low.

Figure 2.2: Sectoral Structure of 2017 Non-Oil GDP (% of Total)



Source: Ministry of Economy

Summing up, we can say that the factors that determine the nature of the economy of Azerbaijan are, on the one hand, the dependence of its economy on the energy sector, on the other hand, its relations with economic and international partners, and on the other hand, overcoming the Soviet legacy.

This article is part of the results of my dissertation research. The following is an appendix to the literature used in this article, as well as literature and references that contain extensive conclusions and statements that I cite as examples in the articles.

Abstract

Transformation of energy supply in accordance with the supply chain management theory and its influence over the competitiveness of the country – legal framework

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Abstract

In the article it is noted that one of the primary problems for the electricity supply in Georgia is the application of supply management theory and its influence over the competitiveness of the country. The field transformation logic is provided including in the modern economic and technological landscape with the possibilities of the logistics and use of the supply management theory.

Legal framework for the electricity supply chain is one of the important challenges for the Georgian legislation, especially since on 27 June, 2014 Georgian and the European Union signed the association agreement, according to which Georgia along with many privileges, undertook the obligations to undertake significant reform in different fields.

By this agreement, in the field of energy, Georgia undertook the obligation to implement the legislation of the European Union, specifically the directives and regulations under third energy package in the national legislation.

Implementing third energy package acts in the national legislation does not only mean the creation of new legal basis. Implementing new regulations will cause the transformation of entire energy market in Georgia, including creating new players on the electricity market and transformation of already existing players, creating new wholesale market model, new approach while creating tariffs, creating the obligation of universal service, strengthening the role of the national regulatory commission, creation of better mechanism for protecting the rights of the electricity consumers and most importantly, creation of the competitive market.

Although it is important to consider that the rights of neither supplier nor the consumer shall be breached and not to violate the supply chain. Directive 2009/72/EC, which establishes rules for organizing and functioning the electricity sector, free access to the market, criteria and procedures for announcement of tender, gaining authorization and system operation, in addition to the legal regulations requires technologically new solutions for a number of issues (e.g. implementing electronic platform for electricity trade) which is closely connected to the practical use of the

supply management theory. This on the other hand gives a broader freedom of action to avoid violation of electricity supply terms.

The trade of electricity in Georgia takes place in wholesome and retail. The wholesome trade model is based on the bilateral agreements. The subject of those agreement, in order to meet needs of qualified enterprises (to balance), generated balance electricity (factual data minus the amount envisaged by the agreement) trade takes place only via the market operator, by using both standard agreement terms and direct agreements. The selling-purchasing model for guaranteed capacity (fixed cost component for thermal power plants), which is one seller and buyer model. Selling-buying, similar to balance electricity, takes place only via market operator, in accordance with the standard terms of the agreement. The existence of this model is due to the stability of the electricity system and to ensure the readiness of sufficient capacity to maintain the relevant technical parameters.

Implementing the new model for the electricity market with regards to European Union legislation is to take place in phases. At first the research of all relevant aspects which may influence those changes will take place (market players, ultimate consumers, etc.), after which the creating of new market model/concept will take place. At this stage, it is considered that total liberalization of the market, without transformation which shall take place in stages and without breach of supply chain will not be acceptable for the development of the country, for the following reasons: limited access to the regulated markets in the neighbor countries, technical limitations to the trans-border trade, long term guaranteed electricity purchase agreements, etc.

Transformation of electricity supply chain with respect to the third energy package shall take place in accordance with the supply management theory because it may affect the competitiveness of the country, especially considering that Georgia has not yet considered which wholesome market will be better for maintaining the stability and competitiveness of country.

Key words: electricity energy, supply chain; legal framework

Successful Scientific Strategic Technological Plan for Modernizing Countries
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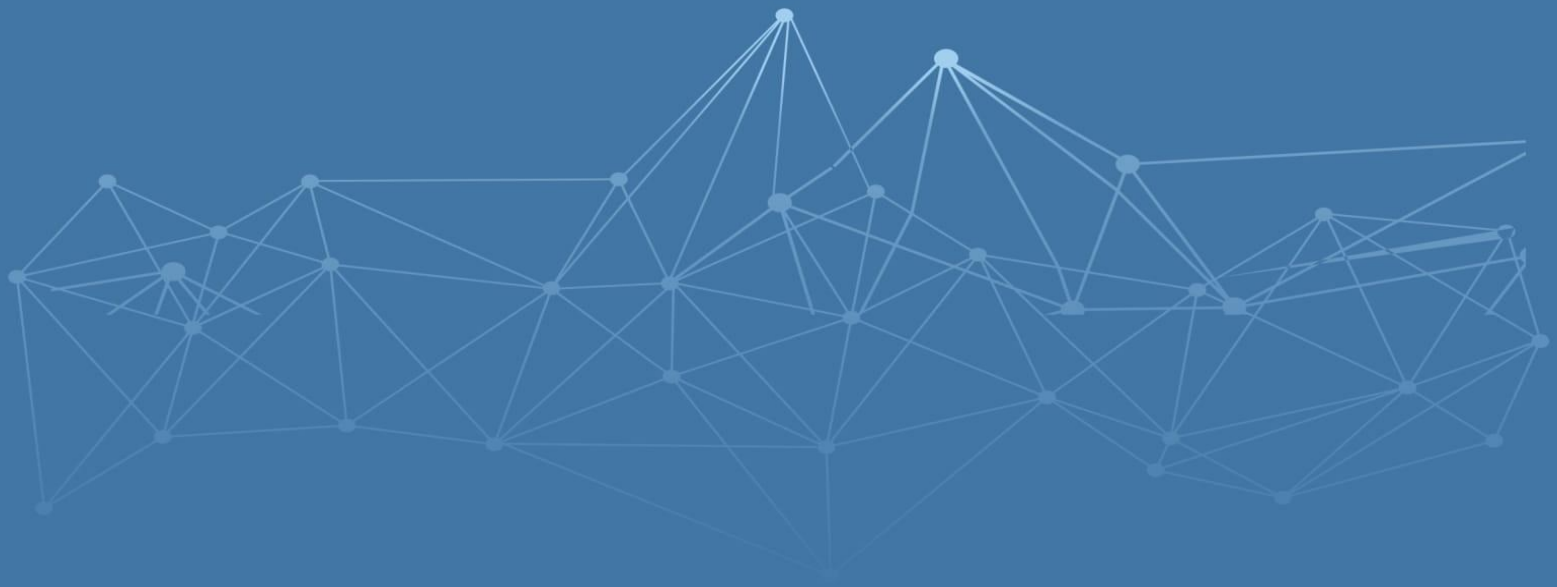
Abstract

Current research is dedicated to the introduction scientific program for any countries to improve and modernize their economic performance by implementing successful strategic plan, which is based on strong loop link between the three major educational and technological sectors: Universities, Research centers and factories.

According to the research results, It has became clear, that technological programs and strategic plans involving all teaching organizations, research centers, industrial sector will be very helpful to increase country's productivity, progress and economic development.

Key words: Country, Economy, Science, Strategic Plan.



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