Northern Cyprus Economy Competitiveness Report

2016 - 2017

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Preface

Dear Reader,

The ninth Competitiveness Report, released during the first quarter of 2017, demonstrates that the North Cyprus economy continues to suffer from structural issues despite the change in the governments over the years.

For the last decade we have been preparing such reports which have consistently made similar diagnosis on the underlying factors of our economy's low competitiveness rankings. Whilst we proudly observe the awareness created by our reports within the Community, failure to overcome the challenges over the years is a clear sign that the magnitude of the problem is more than a simple mismanagement issue. This has led to a general public perception that such structural problems cannot be overcome. Even though both the Turkish Cypriot Community and its political elite manage to successfully diagnose the problems, they are unable to offer remedies aimed at the implementation of sustainable reforms.

Competitiveness analyses measure the efficiency of an economy as well as its ability to create additional value vis-a-vis other economies. In view of our prosperity and education, ranking at 114th position amongst 138 economies, can be considered as a paradox. Nevertheless, it goes to show that our wealth is underutilised in generating economic growth. Wealth is not sustainable, unless it is generated by the economy.

The sustainability and growth of our wealth depend on the efficient utilisation of our resources and the restructuring of our economy towards sectors with comparative advantage. For as long as the public sector remains persistent on its inefficient economic practices, it will fail to deliver the Community's minimum expectations such as social justice, various infrastructural services, equal opportunities, health & security standards as well as concentration of efforts on primary sectors.

The economic policies and programs of the political parties remain at election campaigns and not implemented. The economic protocols signed with Turkey are not implemented as scheduled, jeopardizing faith in the political administration. Failure to implement the 2016-2018 Structural Reform Program, aimed at increasing the efficiency of the public sector, enhancing the strength of the financial sector and competitiveness of the real sector, will lower our competitiveness further.

Last year we witnessed intensified efforts to solve the Cyprus problem which led to the Cyprus Conference with the participation of the guarantor powers. Despite the hurdles encountered at the talks, at this critical phase it is vital to converge the two economies and start discussing the transitions with the active involvement of the business communities. The repercussions of the financial crisis are still affecting Greek Cypriots negatively, but this does not mean that the economic gap between the two economies is now closing. As a result of the implementation of austerity measures backed by an accomplished infrastructure, one can foresee a positive growth within the Greek Cypriot economy which began last year and is expected to continue in 2017. Within this framework, it is an absolute necessity to demonstrate consistent political will, thus transform our economy as stipulated by the analyses and targets defined in the Structural Reform Program. We must achieve a private sector driven growth and narrow the gap between the two economies on the island.

In this issue, the theme of our report is standardization and access to external markets – a topic which our Chamber has long been promoting as a priority. It is absolutely crucial to uplift the standards of our products and services to comply with those of the

global markets, irrespective of the developments in the Cyprus talks. Accessing external markets and compliance with global standards as means of increasing our competitiveness, must be our top priorities. Our Chamber has been working relentlessly for the creation of sufficient regulatory and infrastructural framework to enable production, documentation, surveillance and other relevant processes. Our decision to choose such theme on this year's report is a sign of our commitment to this issue.

This year's report is updated both in contents and in format in accordance with the updates in the Global Competitiveness Report. We also have new academicians joining us in the writing of this report. Prof. Dr.Ali Cevat Taşıran and Dr.Burçak Özoğul from the Middle East Technical University North Cyprus Campus have presented a new perspective by presenting a comprehensive and comparative academic analysis on the competitiveness of North Cyprus. In addition, by undertaking to prepare this year's report in both Turkish and English, we hope to contribute towards the initiatives carried out by all other stakeholders within the Turkish Cypriot economy. KTTO is and continues to be instrumental in being the voice of the Turkish Cypriot Community within the international community.

Yours Sincerely,

Fikri TOROS,

President

Turkish Cypriot Chamber of Commerce

Executive Summary

An Overview of the Competitiveness in Northern Cyprus

This report examines in detail the "global competitiveness" (GC) performance of Northern Cyprus during the period 2008-2016. During this nine-year period, Northern Cyprus' GC index value rose from 3.43 in 2008 to 3.70 in 2016, an increase of 0.27 points. This increase in the nine-year period is not satisfactory.

The sub-indexes that make up the GCI are the "basic requirements" (BR), "efficiency enhancers" (EE), and "innovation and sophistication factors" (ISF). During the period, the highest index values were observed in the BR field and the lowest index values were observed in the ISF field. In other words, the highest contribution to Northern Cyprus's GCI comes from the BR field, the lowest contribution from ISF. On the other hand, the area with the highest performance increase in the period is ISF, while the lowest performance is observed in BR. The increase in the EE was 0.32 points (from 3.06 to 3.38) and the increase in the ISF were 0.55 points (from 2.66 to 3.21), while the BR index increased from 4.10 to 4.23. In summary, the lowest period performance yet the highest level of contribution to GCI has been observed in the BR; whereas the highest period performance, but the lowest level of contribution to the GCI, has been in the ISF.

Despite this relative success in ISF, an area of critical importance, is promising, it is difficult to say that the magnitude of this increase in a period of nine years is satisfactory. Moreover, the large up and down fluctuations observed in the ISF during the period indicate that this area is highly 'dynamic', and that it is very sensitive to various factors. It seems that it is harder to catch a steady upward trend in this field, and therefore it is useful to be more careful and attentive while developing policies and designing reforms in this important area.

Policy makers should pay particular attention to science, technology and industrial policies in order to transform the tendency of fluctuations into a general upward trend in such an important area as the ISF. If certain conditions are met, Northern Cyprus appears to be a country that can rapidly advance in this area. One of the two pillars of this field, "business sophistication", involves the following main constraints: Competitive advantage is low, production processes are not sufficiently developed, and value and supply chains are inadequate. The most obvious problems in the other pillar, namely "innovation", are the state's inability to purchase advanced technology products; inadequacy of R&D spending by firms, and insufficiency of private sector-university cooperation in research.

The relatively stable performance in BR can be explained by two main reasons. The first main reason is that "institutions", one of the pillars of this field, have not made any significant progress in the nine-year period. In nine years, the increase in the index value of "institutions" is only 0.16 points (from 3.53 in 2008 to 3.69 in 2016). However, in the development literature of the last two decades, the quality of institutions and institutional reforms have been shown to be one of the most important factors determining the competitiveness of economies in terms of both growth and development performances. The fact that Northern Cyprus has not made any significant progress in the area of "institutions" shows that this important area has been neglected. The second main reason behind the stationary performance in BR is that "health and primary education", whose contribution to BR is the highest among its pillars, has recorded a remarkable decrease after 2014. "Health and primary education" has clearly the highest index value among the pillars of BR in Northern Cyprus, and has generally been in the high range of 5.6-6.0 points. However, the index value of this pillar decreased from 5.98 points in 2014 to 5.24 points in 2016. In other words, there has been a very rapid decline of 0.74 points in the last two years in "health and primary education".

In a country where "institutions" could exhibit an increase of merely 0.16 points in nine years, "health and primary education" has fallen by 0.74 points in the last two years. It is clear that policy makers in Northern Cyprus must take urgent measures, develop effective policies and make well-designed reforms in these two areas in the first place. When the details of the "health and primary education" pillar are examined, it is understood that the problem is mainly due to the "quality of primary education". The sources of the problems in the "institutions" pillar seem to be much more diverse, as can be seen in the following list:

- Public trust in politicians
- Favoritism in decisions of government officials
- Wastefulness in government spending
- Burden of government regulation
- Strength of financial auditing and reporting standards
- Protection of minority shareholders' interests
- Protection of investors

In the context of the "mediocre" performance in the EE sub-index, the most striking pillar is the "market size". EE consists of six pillars. While the other five typically have values in the range of 3.5-4.5 points, the index values of "market size" seem

to be stuck in a very low range of 1.5-2.0 points. Northern Cyprus's peculiar international conditions, such as political non-recognition and economic isolation, are important reasons for the severe constraints observed in the "market size" area. However, it should also be pointed out that the problem in this area is not only about the difficulties of access to external markets, but also about the narrowness of the internal markets. Progress in access to external markets under the conditions of non-recognition and isolation may be difficult. But even under such adverse external conditions, it may still be possible to apply stimulating policies for the development of internal markets and internal demand, and also create "economies of scale", although this is not so easy. Problems stemming from the narrowness of the internal markets can be alleviated by well-designed income and demand policies. State-private sector cooperation in selected production and service areas can be useful in creating "economies of scale".

Another remarkable sub-component in the EE field is the "labour market efficiency". During the period under consideration, it is observed that the index value of this pillar in Northern Cyprus declined significantly (from 4.09 in 2008 to 3.20 in 2016). This prominent decline indicates that country's one of the most pressing problems arises from the labor market. The main problems in this area are the capacity of the country to attract and retain talented people, trust in professional management, and the impact of tax rates on the willingness to work.

Another pillar that should be particularly emphasized within the context of EE is "technological readiness". This pillar is the leader with an index value of 4.31 among "efficiency enhancers" as of 2016, although it has exhibited ups and downs until 2013. It is known that a certain level of maturity must be reached at the stage of "technological readiness" in order for concentration of production to start and develop in goods and services with high technology content and high value-added. It should be noted that Northern Cyprus has shown a particularly promising development in this respect, especially in recent years. It will be useful, if policy makers follow up and support this development. Implementation of policies to address deficiencies in the following areas seems particularly important: international internet bandwidth, availability of the latest technologies, foreign direct investment and technology transfer.

Northern Cyprus-Southern Cyprus Comparison

Peace and unification process in the island has been continuing with a certain momentum in recent years. It is important to identify the advantages and disadvantages of Southern Cyprus and Northern Cyprus in terms of their competitive powers, and to be able to see the incentives for unification provided by competitiveness differences. It is also critical to evaluate the potential for progress and development together through unification or economic integration. The disadvantages of one side can overlap with the advantages of the other, and a possible unification can provide significant "mutual benefits" through the development of "complementarity" relationships. At the same time, a possible unification or economic integration can rapidly increase the competitive power of the whole island, reinforcing the advantages of both sides, creating " economies of scales" in specific sectors within the island, expanding the opportunities for access to external markets, and stimulating the growth of internal markets. With these views in mind, the report compares the competitiveness of Southern Cyprus and Northern Cyprus in detail.

One of the key conclusions of this comparison is that, as of 2016, Northern Cyprus is behind Southern Cyprus in terms of "global competitiveness" (GC) along with the three sub-indexes: "basic requirements" (BR), "efficiency enhancers" (EE) and "innovation and sophistication factors" (ISF). However, these current disparities in competitiveness are not very large or inextricable. The dominant source of the current GCI difference between the two economies is the EE field. In other words, the area in which Northern Cyprus needs to make the most effort to reach Southern Cyprus is EE.

Some interesting results have been obtained from a simple yet practical calculation. As of 2016, if Southern Cyprus needs to go a distance of 100 units in BR, EE and ISF in order to reach the averages of the top 10 most competitive countries in the world; Northern Cyprus needs to go a distance of 128 units in BR, 147 units in EE and 122 units in ISF. In other words, it can be said that Northern Cyprus's relative advantage is in ISF and its relative disadvantage is in EE, as compared to Southern Cyprus on the basis of catching up with the averages of the top 10 countries. In this respect, it is useful to recall once again the three pillars of EE, which were specifically discussed above: The promising upsurge observed in recent years in the field of "technological readiness", and the negative outlooks in "market size" and "labor market efficiency". These there pillars are especially important for the development of Northern Cyprus's global competitiveness and its capability to catch up with Southern Cyprus.

In Southern Cyprus, a regular decline was recorded in GCI, and in all of the BR, EE and ISF sub- indexes in the period 2008-2016.. It is no exaggeration to say that this nine-year period corresponds to "lost years" in terms of Southern Cyprus's economic development and competitiveness. In the same period, Northern Cyprus has recorded some progress in the GCI, EE and ISF, but such progress has not been satisfactory. On the other hand, Northern Cyprus made no progress at all in terms of BR.

The competitiveness gap between Southern Cyprus and Northern Cyprus in the period under consideration has decreased in terms of the GCI and all sub-indexes. However, these decreases in competitiveness differences did not

arise from any remarkable success on the part of Northern Cyprus. The general and main cause of these decreases is that Southern Cyprus has been exposed to enormous economic and financial difficulties during the 2008-2016 period. The overlap of the effects of the global financial crisis that began in 2008 with Southern Cyprus's (and Greece's) own crisis has led to significant falls in the competitiveness of Southern Cyprus in all major components. In this respect, the fact that competitiveness differences with Southern Cyprus have somewhat narrowed down during this period should not be regarded as a pleasing or a promising development on the part of Northern Cypriot policy makers. According to the calculations made, EE is the only field in which Southern Cyprus's rate of decline is equal to Northern Cyprus's rate of progress. At GCI, BR and ISF, the decline rate of Southern Cyprus has been higher than the progress rate of Northern Cyprus. In other words, the dominant source of the narrowing down of the competitiveness gap is the relative failure of Southern Cyprus, and not the relative success of North Cyprus. While Southern Cyprus has experienced a period of "lost years", Northern Cyprus has exhibited a very negligent tendency in many areas of competitiveness. Nonetheless, in order not to be so unfair to Northern Cyprus, it should be noted that the two countries do not compete on equal terms, as one of them is politically non-recognized and subject to economic isolation, whereas the other one is politically recognized and an EU member state. If Northern Cyprus was politically recognized and an EU member country, expectedly it would of course exhibit a much better competitiveness performance in the period under consideration.

In the light of all these evaluations, the main result that emerges from the comparison with Southern Cyprus is again worth emphasizing at the expense of repetition. The most neglected areas in Northern Cyprus are "health and primary education" and "labor market efficiency". Relative to Southern Cyprus, the areas in which Northern Cyprus has achieved partial success are "institutions", "infrastructure" and "innovation". Above, we have emphasized that the performance of Northern Cyprus in "institutions" is not satisfactory at all. It seems that, during the period in question, Southern Cyprus has experienced a very large decline in the field of "institutions", implying the need for a very formidable recovery in future. On the other hand, Southern Cyprus was ahead of Northern Cyprus in 2008 in the areas of "macroeconomic environment" and "financial market development". As of 2016, Northern Cyprus is now ahead of Southern Cyprus in these two areas. However, it is clear that the main reason for this conjectural development is the macroeconomic and financial crisis that Southern Cyprus has experienced during the period in question.

Northern Cyprus, Southern Cyprus, Turkey and Greece

The island of Cyprus has important historical, political and economic ties with Turkey and Greece. For this reason, both the South and North of the island are also compared to the competitive performances of these two countries. In summary, in the period of 2008-2016, the best relative performance among these four countries has been achieved by Turkey, and the worst relative performance by Southern Cyprus. As of 2016, Turkey is the leader with 4.4 points in the GCI, while the scores of both Southern Cyprus and Greece are equal to 4.0points. And, Northern Cyprus has a GCI value of 3.7points in 2016. In other words, as of 2016, in terms of general competitiveness, the distance of Southern Cyprus and Greece from Turkey is greater than that of Northern Cyprus from Southern Cyprus and Greece.

The relative superiority of Turkey over Southern Cyprus and Greece arises dominantly from EE. The differences in BR are quite small, and these three countries are equal in ISF. Interestingly, the best area of Turkey, EE, is the area where Northern Cyprus has the highest differences with Southern Cyprus and Greece. It is understood that there is a relative disadvantage of Northern Cyprus in an area where Turkey has a relative advantage. This can be expected to be indicative for the course of Turkey-Northern Cyprus relations. In other words, it is possible that the technical and institutional support that Turkey gives to Northern Cyprus will give more fruitful results especially in the field of EE. At this point, it is useful to recall the pillars of EE: higher education and training, goods market efficiency, labor market efficiency, financial market development, technological readiness and market size.

On the other hand, it seems that the area that is generally most neglected in Northern Cyprus is EE, and therefore it is clear that EE is the main priority in front of Northern Cypriot policy-makers. It seems necessary to intervene immediately in the very apparent decline that is observed in this area especially after 2014.

Finally, another result obtained from within this comparison framework is that Northern Cypriot policy-makers must begin to think about the ways to stimulate the very stagnant BR field. On the other hand, ISF has been rising as a promising area in Northern Cyprus, especially in recent years. Therefore, it is of great importance to implement elaborate policies, develop state-private partnerships and provide functional R&D supports in the field of ISF.

Northern Cyprus and Small Island Countries

It is known that small island countries, such as Northern Cyprus, have certain common problems in terms of their constraints in development and competitiveness. For example, following problems are usually common in these countries: small population and small acreage ; inadequacy of natural resources; lack of human capital and qualified labor force; narrowness of markets and inadequate demand; difficulty of developing economies of scale; highness of transportation and communication costs; highness ofdependence on imports; lowness of volume of exports; lowness of diversity in exports and production; difficulties in accessing foreign markets; vulnerabilities to political, economic and financial shocks; fragile environmental conditions and susceptibility to natural disasters.

11 small island countries and Northern Cyprus, which struggle with such problems, are compared in the report in terms of competitiveness for the years 2008, 2012 and 2016. In this group of countries, Singapore has always been the leader, and Timor-Leste, one of the poorest countries in the world, has generally remained in the last place. Barbados, Bahrain, Malta, Mauiritus and Puerto Rico have emerged as the relatively better performing island countries in this group.

The position of Northern Cyprus in terms of the GCI, relative to these small island countries is, unfortunately, not pleasant. In this group, Northern Cyprus could become the worst second in 2008 and in 2012, and the worst third in 2016. Northern Cyprus's status in the BR, EE and ISF sub-indexes is not different either. Unlike the others, Northern Cyprus is trying to compete under such difficult conditions as political non-recognition and economic isolation. But whatever the external political and economic conditions are, it is worrisome that Northern Cyprus has performed at a level close to the least developed countries of the world such as Timor-Leste and Guyana, and lags behind underdeveloped countries like the Dominican Republic, Trinidad & Tobago and Jamaica.

On the other hand, it is worth noting that the same concern is also valid for Southern Cyprus. For example, by 2016, Southern Cyprus has fallen behind Jamaica. In this context, the following question arises: If the referendum in 2004 resulted with the majority of "yes" in Southern Cyprus, like it had been in the North, and if reunification had started to take place; would the competitiveness of the island of "Federal Cyprus" still lag behind Jamaica in 2016? It is of course impossible to give definite answers to such counter-factual questions. Assuming, however, that typical constraints of small island economies on development and competitiveness can be mitigated to some extent by unification, it wouldn't be a very unreasonable assessment to think that Cyprus might have been ranked higher among the small island states as of 2016.

Observations on the Performance Evaluation Matrix

Performance analyses and evaluations are of great importance in describing the current situation and forming future predictions for the national economies, as well as of the individual institutions or sectors.

Performance matrices used in performance appraisals can be considered as a report card (score card) of the relevant institution, industry or economy.

In order for performance reports to function both for analysing the current situation and developing a vision for the future, it needs to be in line with the "Strategic Management" approach.

The performance evaluation matrices included in the Northern Cyprus Competitiveness Report (CR) contain information that will contribute to the performance analysis to be performed with this approach.

As in previous reports, this year, the last two years of specific realizations in some key topics in the Northern Cyprus economy will be presented in a matrix (see Table 3.1). In addition to this matrix, the realization states for the years 2008-2016 in the Northern Cyprus CR documents are presented in a separate table (see Table 3.2)

This year, the CR also includes the strategic goals, targets and relevant performance indicators of some of the key strategic documents of the TRNC government.

First one of these strategy documents is the "Medium Term Program" (MTP) document, prepared and presented by the State Planning Organization, covering the years 2017-2019. Estimates and target values for years regarding the objectives and goals of the macroeconomic indicators in the MTP document are shown in Table 3.3. The monitoring of the realizations regarding the t within the scope of the MTP for each year during the program period is important for the performance evaluation of the Northern Cyprus economy. Another strategic document that indirectly affects the performance of the Northern Cyprus economy is the "TRNC Energy Efficiency Strategy Document" which is issued by the SPO and covering the years 2016-2023

Prof. Ali Cevat Taşıran

Dr. Burçak Özoğlu

North Cyprus 114th / 139

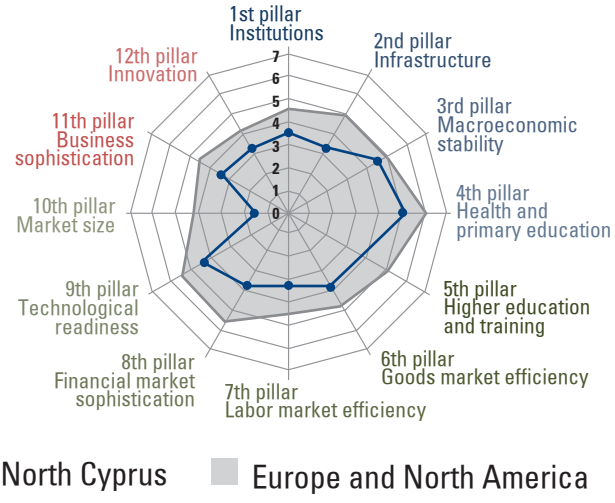
Key Indicators, 2015

Population (millions)	326	GDP per capita (US$)	13.737
GDP (US$ millions)	3.749	GDP (PPP) % world GDP	0,0043

Performance Overview

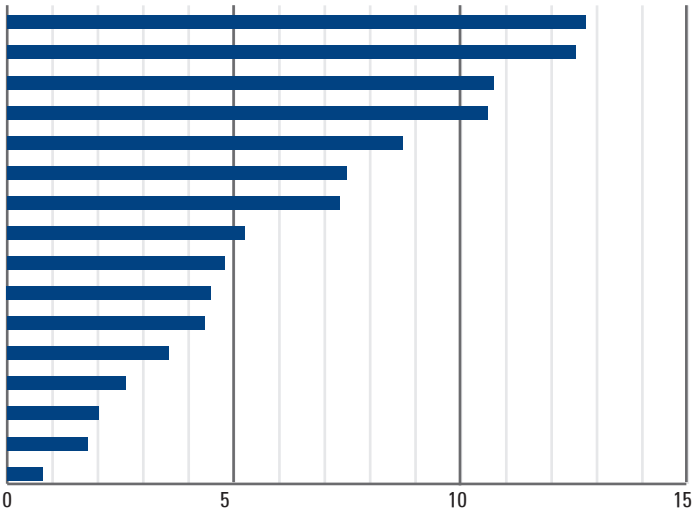
	Rank /139	Score (1-7)	Trend	Distance from best
Global Competitiveness Index	114	3,70		
Subindex A: Basic Requirements	115	4,23		
1st pillar: Institutions	83	3,69		
2nd pillar: Infrastructure	96	3,40		
3rd pillar: Macroeconomic stability	74	4,60		
4th pillar: Health and primary education	103	5,24		
Subindex B: Efficiency Enhancers	125	3,38		
5th pillar: Higher education and training	99	3,84		
6th pillar: Goods market efficiency	124	3,80		
7th pillar: Labor market efficiency	135	3,20		
8th pillar: Financial market sophistication	95	3,64		
9th pillar: Technological readiness	63	4,31		
10th pillar: Market size	137	1,49		
Subindex C: Innovation and Sophistication Factors	116	3,21		
11th pillar: Business sophistication	125	3,29		
12th pillar: Innovation	102	3,13		

Edition	2012-13	2013-14	2014-15	2015-16	2016-17
Rank	123/144	118/148	114/145	121/141	114/139
Score	3,54	3,64	3,68	3,56	3,70



Most problematic factors for doing business

Foreign currency regulations	12,87
Inefficient government bureaucracy	12,64
Inadequately educated workforce	10,75
Policy instability	10,68
Inadequate supply of infrastructure	8,63
Tax rates	7,54
Access to financing	7,3
Insufficient capacity to innovate	5,10
Government instability	4,87
Inflation	4,55
Restrictive labor regulations	4,32
Tax regulations	3,53
Poor public health	2,59
Poor work ethic in national labor force	2,04
Corruption	1,88
Crime and theft	0,71



Note: From the list of 16 factors, respondents to the World Economic Forum's Executive Opinion Survey were asked to select the five most problematic factors for doing business in their country and to rank them between 1 (most problematic) and 5. The score corresponds to the responses weighted according to their rankings.

The Global Competitiveness Index in detail

	RANK/139	SCORE
1st pillar: Institutions	83	3,69
1.01 Property rights	117	3,64
1.02 Intellectual property protection	93	3,74
1.03 Diversion of public funds	42	4,28
1.04 Public trust in politicians	83	2,82
1.05 Irregular payments and bribes	73	3,93
1.06 Judicial independence	60	4,11
1.07 Favoritism in decisions of government officials	103	2,63
1.08 Wastefulness of government spending	81	2,99
1.09 Burden of government regulation	108	2,97
1.10 Efficiency of legal framework in settling disputes	75	3,56
1.11 Efficiency of legal framework in challenging regs	102	3,01
1.12 Transparency of government policymaking	111	3,59
1.13 Business costs of terrorism	26	5,96
1.14 Business costs of crime and violence	31	5,40
1.15 Organized crime	53	5,23
1.16 Reliability of police services	72	4,35
1.17 Ethical behavior of firms	107	3,43
1.18 Strength of auditing and reporting standards	137	2,70
1.19 Efficacy of corporate boards	132	3,82
1.20 Protection of minority shareholders' interests	136	2,91
1.21 Strength of investor protection 0-10 (best)*	101	4,50
2nd pillar: Infrastructure	96	3,40
2.01 Quality of overall infrastructure	121	2,81
2.02 Quality of roads	136	2,27
2.03 Quality of railroad infrastructure	n/a	n/a
2.04 Quality of port infrastructure	101	3,29
2.05 Quality of air transport infrastructure	91	4,03
2.06 Available airline seat kilometers millions/week*	113	29,71
2.07 Quality of electricity supply	120	2,52
2.08 Mobile-cellular telephone subscriptions /100 pop.*	1	246,94
2.09 Fixed-telephone lines /100 pop.*	39	29,75
3rd pillar: Macroeconomic environment	74	4,60
3.01 Government budget balance % GDP*	80	-3,69
3.02 Gross national savings % GDP*	53	22,90
3.03 Inflation annual % change*	122	7,78
3.04 Government debt % GDP*	137	157,00
3.05 Country credit rating 0-100 (best) *	n/a	n/a
4th pillar: Health and primary education	103	5,24
4.01 Malaria incidence cases/100,000 pop. *	3,99	50
4.02 Business impact of malaria	7	1
4.03 Tuberculosis incidence cases/100,000 pop. *	12,6	36
4.04 Business impact of tuberculosis	7	1
4.05 HIV prevalence % adult pop. *	0,02	11
4.06 Business impact of HIV/AIDS	6,99	1
4.07 Infant mortality deaths/1,000 live births *	60	10,31
4.08 Life expectancy years*	17	81,50
4.09 Quality of primary education*	103	3,27
4.10 Primary education enrollment rate net % *	1	100,00
5th pillar: Higher education and training	99	3,84
5.01 Secondary education enrollment rate gross %*	69	93,50
5.02 Tertiary education enrollment rate gross % *	5	87,00
5.03 Quality of the education system	96	3,33
5.04 Quality of math and science education	108	3,29
5.05 Quality of management schools	131	3,17
5.06 Internet access in schools	93	3,82
5.07 Local availability of specialized training services	120	3,61
5.08 Extent of staff training	131	3,13
6th pillar: Goods market efficiency	124	3,80
6.01 Intensity of local competition	113	4,60
6.02 Extent of market dominance	116	3,13
6.03 Effectiveness of anti-monopoly policy	112	3,18
6.04 Effect of taxation on incentives to invest	125	2,83
6.05 Total tax rate % profits *	96	45,50
6.06 No. of procedures to start a business*	138	17,00
6.07 Time to start a business days *	106	23,00
6.08 Agricultural policy costs	126	3,06
6.09 Prevalence of non-tariff barriers	133	3,24
6.10 Trade tariffs % duty*	33	1,21
6.11 Prevalence of foreign ownership	136	2,75
6.12 Business impact of rules on FDI	136	2,87
6.13 Burden of customs procedures	135	2,51
6.14 Imports % GDP*	72	40,02
6.15 Degree of customer orientation	95	4,37
6.16 Buyer sophistication	98	3,04
7th pillar: Labor market efficiency	135	3,20
7.01 Cooperation in labor-employer relations	50	4,66
7.02 Flexibility of wage determination	74	5,00
7.03 Hiring and firing practices	75	3,73
7.04 Redundancy costs weeks of salary*	n/a	n/a
7.05 Effect of taxation on incentives to work	94	3,70
7.06 Pay and productivity	74	3,93
7.07 Reliance on professional management	135	3,02
7.08 Country capacity to retain talent	126	2,59
7.09 Country capacity to attract talent	130	2,10
7.10 Female participation in the labor force ratio to men*	119	0,56
8th pillar: Financial market development	95	3,64
8.01 Financial services meeting business needs	107	3,71
8.02 Affordability of financial services	114	3,18
8.03 Financing through local equity market	n/a	n/a
8.04 Ease of access to loans	99	3,39
8.05 Venture capital availability	n/a	n/a
8.06 Soundness of banks	123	3,69
8.07 Regulation of securities exchanges	n/a	n/a
8.08 Legal rights index 0-10 (best)*	46	6,00
9th pillar: Technological readiness	63	4,31
9.01 Availability of latest technologies	124	3,73
9.02 Firm-level technology absorption	105	4,16
9.03 FDI and technology transfer	108	3,80
9.04 Internet users % pop.*	1	116,35
9.05 Fixed-broadband Internet subscriptions /100 pop.*	43	20,67
9.06 Internet bandwidth kb/s/user*	44	82,01
9.07 Mobile-broadband subscriptions /100 pop.*	16	95,67
10th pillar: Market size	137	1,49
10.01 Domestic market size index*	137	1,08
10.02 Foreign market size index *	133	2,72
10.03 GDP (PPP) PPP $ billions *	135	4,87
10.04 Exports % GDP *	37	49,40
11th pillar: Business sophistication	125	3,29
11.01 Local supplier quantity	123	3,87
11.02 Local supplier quality	13	3,74
11.03 State of cluster development	96	3,40
11.04 Nature of competitive advantage	97	3,07
11.05 Value chain breadth	121	3,28
11.06 Control of international distribution	137	2,58
11.07 Production process sophistication	128	2,73
11.08 Extent of marketing	134	3,43
11.09 Willingness to delegate authority	88	3,61
12th pillar: Innovation	102	3,13
12.01 Capacity for innovation	107	3,78
12.02 Quality of scientific research institutions	124	2,87
12.03 Company spending on R&D 97	112	2,88
12.04 University-industry collaboration in R&D	94	3,22
12.05 Gov't procurement of advanced tech. products	131	2,48
12.06 Availability of scientists and engineers	122	3,22
12.07 PCT patent applications applications/million pop. *	n/a	n/a

*Hard data

Note 1: The data that does not contain "*" was prepared in a 1 to 7 scale

Note 2: For The formation of the sample of Executive Opinion Survey, sectoral weights were calculated by taking the average of last five years of GDP.

Note 3: Reflect the trends in the values of publications (2012-2013)-(2016-2017).

CHAPTER I

INTRODUCTION

The Political-Economic Outlook of the World

Oxford Dictionaries, one of the components of the Oxford University Press, regularly choose a "word of the year" since 2004. Each year, a list of words of interest and attention that are thought to reflect the general mood and outlook of the world is made and the word of the year is chosen from that list. The Oxford Dictionaries chose post-truth1 as the word of the year in 2016. This word is used as an adjective to describe "situations where objective facts are less influential in shaping public opinion than appeals to emotion and personal belief." Here, the post prefix emphasizes that the word that comes after itself has lost its significance. In 2016, post-truth politics and post-truth world expressions have been used frequently. In other words, 2016 is thought to be a year in which truth has lost significance in politics and in the world.

There have been two important events in 2016 that led to the thought that truth has lost its significance. The first was a referendum on 23 June in the United Kingdom (UK). In the referendum, the question, "Should the United Kingdom leave the EU?", was asked and it was replied with a majority of "Yes" with a proportion of nearly 52%. This preference of the people of the United Kingdom for leaving the EU is called Brexit. Brexit is regarded as a historic blow to the transnational European ideal aiming at political and economic integration of European countries. It can also be argued that the people of the United Kingdom prefered not to be part of a transnational structure. The second important event, which led to the idea that truth has lost its significance, was that the Republican candidate Donald Trump, who is known for his anti-globalization rhetoric, nationalism with racist connotations, anti-immigrant and macho attitudes, won the presidential election on November 8 in the US. Trump, being one of the richest businessmen in the world, appears to have persuaded American people with his "populist" promises and rhetoric.

It can be said that, at the background of these decisions made by the people in the United Kingdom and the United States, there is the increasing dominance of emotions and beliefs that contain nationalist and populist elements. Especially after the "global financial crisis" that began in the 2007-2008 period, it started to be seen more clearly that the functioning of the world economy makes the lower and middle classes suffer in socioeconomic terms. Inequalities of income and wealth within the countries have become more noticeable. Masses, unhappy with this situation, have organized anti-systemic protests in many parts of the world, from the "Occupy Wall Street!" movement in the United States to the "Arab Spring" in the Middle East and North Africa. At a time when dissatisfactions about the state of affairs in the world have been increasing every year as

1 **https://en.oxforddictionaries.com/word-of-the-year/word-of-the-year-2016**

compared to the previous one, the phenomenon of terror has also become more and more international. In particular, the war waged by ISIS in the Middle East and its bloody attacks that have taken place in various countries have reinforced deep concerns about the course of the world. In short, at the end of 2016, it is very difficult to be optimistic about the world's political-economic outlook. 2016, a "post-truth" year, is perhaps going to be described as a watershed in the political and economic history of the world in the coming years.

The first period of globalization in the world economy, in which foreign trade and capital movements were widely liberalized, was practiced between 1870 and 1914. The beginning of the second period of globalization, in which the degrees of freedom in foreign trade and capital movements have been increased widely, coincides with the late 1970s and the early 1980s. As Margaret Thatcher of the Conservative Party became the Prime Minister in the United Kingdom in 1979, and as the Republican Party candidate Ronald Reagan became the president of the United States in 1980, a new era has begun, which some researchers have called the period of "neoliberal" globalization. In other words, the beginning of this second period of economic liberation at world scale was symbolized by the Thatcher-Reaganduo. We have summarized above the "sinister" outlook that the neoliberal globalization process has reached by the end of 2016. In 2016, as a result of a historic referendum in the United Kingdom, Theresa May of the Conservative Party became the Prime Minister; and Donald Trump of the Republican Party has been elected the President of the Unites States in a historic election. These two events might possibly symbolize the end of the neoliberal globalization period, as much as they may be representing two interesting quirks of history.

At the end of 2016 and in the first months of 2017, there is a possibility that protectionist and interventionist policies in foreign trade and controls in capital movements may begin to rise again. Uncertainties about the performance of the world economy and countries' economies in the upcoming period continue to create anxiety. At the level of world politics, the possibilities that EU can become weaker and that anti-immigrant policies can become widespread, and especially probable problems in US-Russia and US-China relations are among the main topics that are discussed frequently. Problems that may arise in areas with geostrategic and geopolitical importance, such as Central Asia, Caucasus, Middle East and Eastern Mediterranean, continue to be sources of concern.

The International Monetary Fund (IMF), which updated its World Economic Outlook report on January 16, 2017 (i.e., 4 days before Trump's inauguration), after a "lackluster outturn" in 2016, predicts a revival in 2017 and 2018, especially in emerging markets and developing economies. However, the IMF also draws attention to the uncertainty around the policies to be implemented by the new US administration and its possible global ramifications, implying that the predictions in the January update should be considered cautiously.2 Trump, as the new President of the United States, which, in turn, is the most powerful and dominant actor in the world system, has insisted on the rhetoric of his election campaign. And with some initial decisions, he has strengthened the concerns that have already existed in world politics and the world economy. His withdrawal of the US from the Trans-Pacific Partnership (TPP) Agreement, his insistence on anti-globalization rhetoric at a time when Chinese President Xi Jinping defended globalization at the World Economic Forum; the visa ban on the citizens of some Muslim countries and his determination to build a wall on the Mexican border have been watched with concern in the United States and the world.

In the same report update, IMF also touches on the risks observed in the world economy. The IMF, for example, points out that, if there are major policy changes at the world economy level, potentially, global imbalances may increase and sharp movements in exchange rates may continue. The IMF stresses that protectionist pressures against global economic integration may become more intense in such a situation, noting that productivity and income can fall and global markets may suffer from a severe blow if global trade and immigration restrictions increase. It is as if the IMF is describing how a global economic crisis might come about.. Among the risks facing the world, the IMF also counts financial vulnerabilities in some major emerging market economies and in many low-income countries, geopolitical distress in the Middle East and Africa, asylum seekers and migrants' problems, and global terrorism.

At also the World Economic Forum's annual meeting in Davos on January 17-20, 2017, the risks confronting the world were among the main topics of discussion. In an article3 titled "10 economic shocks to look out for in 2017", various risks were pointed out. For example, economic growth in 2017 may slow down due to Brexit and political uncertainties in Europe and due to the stagnation in the construction industry in China. Prices of commodities (raw materials, oil, etc.), inflation in many countries, interest rates in the US may continue to increase and the US dollar may continue to appreciate.

The Case of Northern Cyprus

After 2016, the "post-truth" year, while there are uncertainties in world politics and the world economy, and a generally negative outlook, Northern Cyprus has been passing through a very important period. The negotiation process, which aims to unite the northern

2 http://www.imf.org/external/pubs/ft/weo/2017/update/01/index.htm

3 https://www.weforum.org/agenda/2017/01/economic-shocks-to-look-out-for-in-2017?utm_content=buffer33b04&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer

and the southern parts of the island within the framework of a federal solution, has been progressing despite certain pauses. This process, pioneered by the leaders of the Turkish and Greek Cypriot sides, resumed in January 2017, despite the pause in late 2016 in Switzerland. The discussions and debates are continuing on both sides of the island, as well as in Greece and Turkey, while those who favor the federal solution pursue their "cautious optimism" to a certain extent.

Significant progress has been made in certain headings on the resolution. A stage in which security and guarantees have begun to be addressed has been reached. Moreover, the parties have presented maps mutually for the first time. However, it was understood in January 2017 that it was not easy to reach consensus in these two chapters. A decision taken by the Greek Cypriot House of Representatives at the beginning of February signaled that the process may have entered a new phase of congestion.

The decision taken in the Greek Cypriot parliament is related to the 1950-poll on Enosis. In that incident, it is known that about 96% of Greek Cypriots had signed papers on which the phrase "Our demand is Enosis" was written. In those days, the Greek government had not approved that request, and therefore the voting had not reached its purpose. In the first months of 2017, except the AKEL parliamentarians, Greek Cypriot parliamentarians accepted a proposal for teaching and commemorating the 1950 Enosis poll at schools. The fact that the proposal came from the ultra-nationalist and anti-solution ELAM is meaningful. It is clear that the decision taken in the Greek Cypriot side will have negative effects on the negotiation process.

As noted in some parts of this report, irrespectively of whether solution is realeized or not, there are too many institutional reforms to be carried out both in the economy and the public sector, in order Northern Cyprus to accelerate its economic development and to advance its competitiveness. The necessity of such reforms has been expressed for many years, not just in this report but also in almost every report that has examined the political-economic case of Northern Cyprus. These reforms would become compulsory in the post-solution period, if there would be one. Moreover, these reforms are necessary for a broad section of Turkish Cypriots to socioeconomically benefit from a unified economy and EU membership after a possible solution. If there is no solution, these reforms still will be the only way that Northern Cyprus can take care of its own affairs. Under circumstances of political non-recognition and economic isolation, it is only with such reforms that an economy, which is characterized by significant dependence on the political and fiscal support of Turkey, very weak exports in terms of diversity and technology content, and a very high degree of import-dependency, can leap to a sustainable development path. Nevertheless, as this report also shows in its nine-year framework, Northern Cyprus appears to be a country, which has neglected many of the steps to be taken in the field of "institutional development".

In the early January of 2017, the leaders of three key economic organizations representing the business community in Northern Cyprus also stressed that there was no progress in the reform package signed with Turkey. Presidents of the Turkish Cypriot Chamber of Commerce (KTTO), the Turkish Cypriot Chamber of Industry (KTSO) and the Turkish Cypriot Chamber of Craftsmen and Tradesmen (KTEZO) stated that the most fundamental problem of Northern Cyprus is the bulky operation of the public sector, and they also said that hard work is needed to accelerate the bureaucracy. The leaders also pointed out that there was no significant improvement in the economy in 2016.[4]

It is inevitable that Northern Cyprus will take its share from the sharp exchange rate movements and the global economic downturn, which started to influence Turkey negatively from the last months of 2016 onwards. There are important warnings for Turkey in the IMF's consultation report, dated February 3, 2017: The slow growth of investment due to increasing uncertainties; growth continuing to be led by consumption; the persistence of the high current account deficit; inflation rate still being above the target. The report also points out the factors that can lead to the persistence of uncertainties: Focusing of politics on the transition to the presidential system; new questions about the future of EU-Turkey relations; the tense security situation in the southeast of the country, and the conflicts in neighboring countries. These negative notes for Turkey are also important for Northern Cyprus, which has strong political and economic linkages with Turkey.

All the same, we hope that the "sinister" outlook of the "post-truth" age will not have reflections on Turkey and Northern Cyprus; and we wish, truth will never become insignificant in these two countries.

Chapters of the Report and the Data

This report consists of three main chapters following this Introduction.

In Chapter 2, titled "Competitiveness in Northern Cyprus", the developments in the competitiveness of Northern Cyprus are examinedfor the nine-year period 2008-2016, unlike the previous reports that covered only the last few years.

The data used in Chapter 2 have been carved out from a survey of

4 **http://www.kibrisgazetesi.com/kibris/ekonomide-kayda-deger-gelisme-yok/9708**

around 100 firms in the Northern Cyprus business community, based on the "Executive Opinion Survey" of the World Economic Forum (WEF).. Using the methodology adopted by the WEF, competitiveness indexes, taking values between 1 and 7, have been calculated.[5]

At this point, it should be emphasized that the data reflect subjective opinions of the businesscommunity. Even though part of the calculated indices is based on objective data, the majority are based on subjective perceptions. Evaluations made through data analysis in the report should be considered in the light of this information.

The most general indicator of competitiveness is the Global Competitiveness Index (GCI). The GCI has three sub-indexes: Basic Requirements (BR), Efficiency Enhancers (EE) and Innovation and Sophistication Factors (ISF).6 These three key components have 12 pillars:

Basic Requirements:

1. Institutions
2. Infrastructure
3. Macroeconomic environment
4. Health and primary education

Efficiency Enhancers:

5. Higher education and training
6. Goods market efficiency
7. Labor market efficiency
8. Financial market development
9. Technological readiness
10. Market size

Innovation and Sophistication Factors:

11. Business sophistication
12. Innovation

Chapter 2 explores the performance of Northern Cyprus during the 2008-2016 period in detail, using all these competitiveness indices

Also in this Chapter, the general view, the general view of the competitiveness of North Cyprus is addressed.

Northern Cyprus is compared to Southern Cyprus.

Turkey and Greece are also included in the comparison framework.

The position of Northern Cyprus is examined against a group of 11 small island states, which can be considered to have relatively similar main constraints in economic development and competitiveness.

Last section consists of a set of econometric regression analysis, unlike the previous reports. In this econometric analysis covering the period 2008-2016 for a group of 15 countries, consisting of the 11 island countries, Northern Cyprus, Southern Cyprus, Turkey and Greece; the causal relationships among the three sub-indexes of the GCI and their 12 pillars are investigated. The relationships among the sub-indexes (unlike in the WEF's methodology) are measured by an objective method, using the "Partial Least Squares - Path Modeling".

In Chapter 3, a "Performance Evaluation Matrix" on the competitiveness of Northern Cyprus is presented and various assessments based on this matrix are made.

The annual Competitiveness Reports prepared for Northern Cyprus contain a different theme each year. This year's theme is: "Standardization and Access to External Markets". This theme is covered in Chapter 4, which focuses on standardization in products and services. Issues such as the meaning and importance of standardization, the leading standardization organizations in the world, the economic and social benefits of standardization, the relations between standardization and international trade, and Northern Cyprus's current situation and fundamental problems in this subject-matter are examined in Chapter 4, and the report is concluded.

5 The survey, data collection and index calculations.have been carried out by a survey company, and not by the authors.

6 Their weights are, %40, %50 and %10, respectively.

CHAPTER II

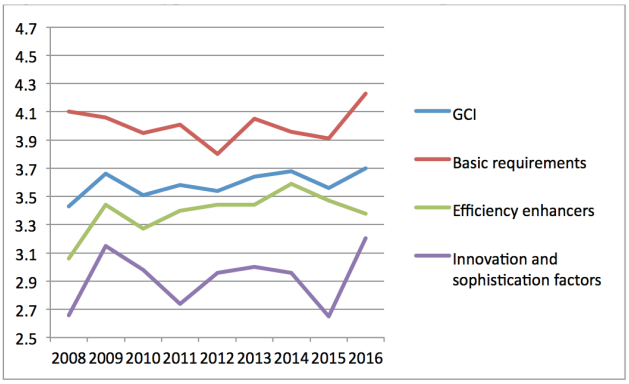
Competitiveness in Northern Cyprus

Competitiveness in Northern Cyprus: General outlook, 2008-2016

This subsection examines the overall performance of Northern Cyprus in terms of "global competitiveness" (GC) and its components in the period 2008-2016. In Figure 1, the changes in the GC index and the three sub-indexes are presented.

According to Figure-1, it is observed that the Global Competitiveness Index (GCI) of Northern Cyprus displayed small ups and downs in 2008-2016 period. The GCI value, which was 3.43 in 2008, reached 3.70 in 2016. In other words, Northern Cyprus has succeeded in increasing the GCI, which is a holistic measure of competitiveness in that period. However, it is difficult to say that for the nine-year period, the increase is satisfactory. The GCI could only show an increase of 0.27 points over the nine-year period.

Figure-1. North Cyprus – GCI and Its Main Components, 2008–2016



Data source: Turkish Cypriot Chamber of Commerce (KTTO), North Cyprus global competitiveness surveys
Notes: GCI is the global competitiveness index, which is between 1 and 7.
Basic requirements: Institutions, infrastructure, macroeconomic environment, health and primary education.
Efficiency enhancers: Higher education and training, goods market efficiency, labor market efficiency, financial market development, technological readiness, market size
Innovation and Sophistication Factors: Business sophistication, innovation

As seen in Figure-1, the most successful performance among the sub indexes of the GCI belongs to the field of "basic requirements" (BR). The highest index values were observed for this sub index, which varied from 4.10 to 4.23 throughout the period. In this respect, it can be said that the most significant contribution to the competitive power of Northern Cyprus is the BR field. In Northern Cyprus, the lowest performance of the components of the GCI has appeared in "Innovation and sophistication factors" (ISF), which displayed a rather volatile trend. The values of the

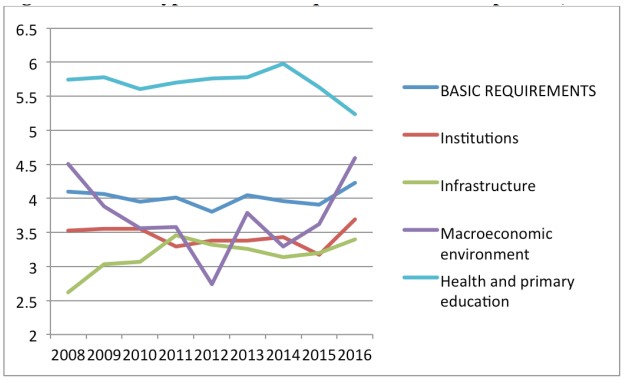
"Efficiency enhancers" (EE) sub index are also below the GCI during the period. These general conclusions point to the need to focus more on ISF and EE areas in Northern Cyprus. The recent rapid leap observed in ISF (from 2.65 in 2015 to 3.21 in 2016) is a promising development; The downward trend in EE (from 3.59 in 2014 to 3.38 in 2016) should be considered as an important warning signal.

In Figure 2, the "basic requirements" (BR) field, which makes the most significant contribution to the competitive power of Northern Cyprus, is considered together with the sub-components (pillars). Among the four sub-components, the highest performance over the whole period was observed in the field of "health and primary education". However, the downward trend observed recently in this area, which is anticipated as the driving force of BR, is also remarkable. In the area of "health and primary education", Northern Cyprus reached a rather high and successful index value of 5.98 in 2014; But this figure has dropped to 5.63 in 2015 and to 5.24 in 2016. It can be stated that this important area has been neglected considerably in recent years.

The other three sub-components (pillars) shown in Figure 2 are generally below the BR index. The "macroeconomic environment" pillar fell sharply from 2008 to 2012 in parallel with the global financial crisis and recovered at the same rate after 2012. Although progress has been made in the area of "infrastructure" versus the global financial crisis between 2008 and 2011, this progress has not been sustained since 2011 when the effects of the crisis began to be overcome. At this point, it should be remembered that the results of infrastructure investments are generally taken in medium or long term. In this respect, it can be assumed that infrastructure investments initiated in Northern Cyprus prior to the global financial crisis have been completed during and after the global crisis. However, although the effects of the global crisis have diminished and progress has been made with macroeconomic stability, the pace of infrastructure in the post-crisis period may indicate that these important investments have been neglected in recent years.

In Figure 2, it is seen that the sub-component of "institutions" for Northern Cyprus follows a rather horizontal course with small ups and downs. Although the leap observed recently (from 3.25 in 2015 to 3.69 in 2016) is promising, the value of this index has not reached the desired level yet. Since the 1990s, a wide range of literature has emerged highlighting the importance of institutional development. According to this literature, especially contributed by the World Bank and leading Western economists, institutional development

Figure-2. North Cyprus – Basic Requirements and Components, 2008–2016



Data source: Turkish Cypriot Chamber of Commerce (KTTO), North Cyprus global competitiveness surveys

is not only one of the main determinants of competing power, but also of economic development in general. For this reason, it is recommended that in recent years, developing countries should make "institutional reforms" in order to increase their competitiveness, accelerate their economic development and avoid the "middle-income trap". It is regrettable that Northern Cyprus did not make any significant progress in this important area during the period 2008-2016. The "institutional" index value of 3.53 in 2008 was only 3.69 in 2016. In other words, in a period of nine years, Northern Cyprus could only achieve a very low increase of 0.16 points in this area. Scientific studies have shown that economic growth and prominent contributions to competitiveness are essential to this field, and Northern Cypriot policy makers have been very negligent during the past nine years, which is alarming for the economic future of the country.

The "Institutions" field consists of 21 sub-components within the scope of competitiveness opinion surveys. As of 2016, the following are some of the topics that Northern Cyprus has performed significantly poorly among these 21 sub-components:

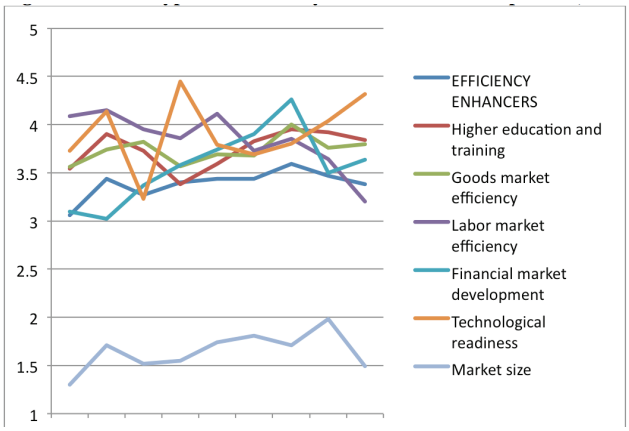
- Public trust in politicians
- Favoritism in decisions of government officials
- Wastefulness of government spending
- Burden of government regulation
- Strength of auditing and reporting standards
- Protection of minority shareholders' interests
- Strength of investor protection

The Northern Cypriot policy makers should consider these issues as the most current and priority issues. In order

to accelerate the development of the Northern Cyprus economy, to increase the competitiveness and to ensure the continuity of these, it is necessary to design and implement institutional reforms in particular.

Figure 3 presents the developments of "efficiency enhancers" (EE) and its sub-components. EE consist of 6 sub-components (pillars). Within these sub-components, "market size" differs significantly from the others. The index values of the other 5 sub-components were generally above EE index value and ranged from 3.5 to 4.5; The "market size" index remained at a very low value, usually in the range of 1.5-2.0. At first glance, as the root cause of this very poor performance in the "market size" area, the fact that Northern Cyprus may not be politically recognized in the international community, and the ongoing economic isolation conditions may be considerable. It is clear that the lack of recognition and isolation negatively affects the "market size" of Northern Cyprus. For this reason, it can be said that under current foreign political conditions, the extent to which Northern Cyprus can improve its "market size" area is very limited. However, at this point it should be noted that four basic measures are used when creating the "market size" index: i) domestic market size, ii) Foreign market size, iii) GDP by purchasing power parity, iv) Exports by GDP.

Figure-3. North Cyprus – Efficiency Enhancers and Components, 2008–2016



Data source: Turkish Cypriot Chamber of Commerce (KTTO), North Cyprus global competitiveness surveys

In other words, the "market size" index is not only affected by the "foreign market size" and exports. This index also includes the effects of "local market size" and GDP. It can be assumed that, not being recognized and isolation limit the foreign market size and export opportunities, yet, the domestic market size and GDP are less affected. In this regard, it should be stressed that even under the unrecognized and isolated conditions of Northern Cyprus, this area may achieve a certain success by expanding domestic markets and regularly increasing domestic revenues. As a matter of fact, it is observed that the restrictions on the "market size" in Northern Cyprus are mostly caused by the shortage of domestic markets. For example, in the last three years (2014, 2015 and 2016); The "domestic market size" index was 1.50, 1.72 and 1.08, respectively. The "foreign market size" index for the same years is higher: 2.34, 2.79 and 2.72 respectively. In other words, the narrowness of the domestic markets for North Cyprus appears to be a more serious problem than the shortage of foreign markets. In short, despite the current external political conditions that are difficult to replace in the short run, The problem of "market size" can be alleviated to a certain extent by applying demand and income policies to develop and expand internal markets in Northern Cyprus. The creation of "scale economies" conditions in selected sectors through government-private sector cooperation can also stimulate and expand domestic markets through lowering production costs and thus prices.

Seeing the developments in the other five pillars of "Efficiency enhancers" in Figure-3, the following points are particularly noteworthy:

i. No significant progress has been made in the field of "Higher education and training" in the period of 2008-2016 in Northern Cyprus, although being one of the world's most university hosting zones compared to its population and area. This field index is stuck between 3.5 and 4.0. It seems necessary to take measures to improve the quality of higher education in the country, to implement educational policies and higher education reforms to ensure a permanent qualitative development.

ii. Similarly, the "goods market efficiency" index appears to be stuck between 3.5 and 4.0. In this area, by 2016, the most significant constraints are: the number of procedures required to establish a company; the burden of customs procedures; the prevalence of foreign ownership and the impact of taxation on the willingness to invest.

iii. A marked performance decline was observed in the "labor market efficiency" area in North Cyprus during the period 2008-2016. The index value, which was above 4 in 2008, declined to 3.20 in 2016. As of 2016, the main challenges in this area are: capacity to attract and retain talented people in the country; the confidence in professional management and the impact of tax rates on the willingness to work.

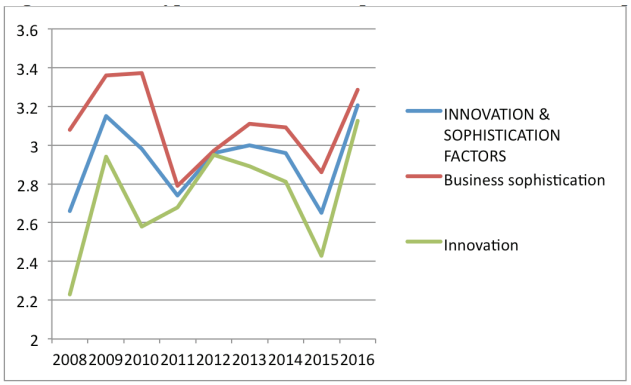
iv. The "the financial market development" exhibited a very promising and rapid recovery in performance during the first seven years of the nine-year period studied (from 2008 to 2014) and the index value rose from 3 to 4.26. However, it declined to 3.5 from 2014 to 2015, and reached 3.64 in 2016. In order for the financial development to stabilize, it is first necessary to improve "Regulation of securities exchanges", "financial service prices", and "Ease of access to loans".

v. Although "Technological readiness" has shown a downward trend until 2013, it is the highest sub-component with an index value of 4.31 among "efficiency enhancers" by 2016. This sub-index, which shows a significant upward trend since 2013, has a special significance in terms of competitiveness and in terms of economic development. In order to be able to start to concentrate on production of goods and services with high technology content and high value added in the economy, it is necessary to reach a certain level of maturity during the "technological readiness" phase and Northern Cyprus has shown a particularly promising development in this regard especially in recent years. There is a great benefit for policy makers to watch and support this development. The implementation of policies to address deficiencies in the following areas seems particularly important: International Internet bandwidth; availability of the latest technologies; foreign direct investment and technology transfer.

In this subsection, the performance of Northern Cyprus in the "Innovation and sophistication factors" (ISF) will be examined lastly. As seen in Figure-4, during the period of 2008-2016, considerable fluctuations were observed in this area. During the period, "Business sophistication" performed better than "innovation". It is also remarkable that these two sub-components move together to a large extent. After quite large fluctuations, by 2016, the "Business sophistication" index reached 3.29 and the "innovation" index reached 3.13.

ISF, on the one hand, has the lowest performance in Northern Cyprus compared to other key components ("basic requirements" and "efficiency enhancers"); On the other hand, the most rapid increase in the last period (from 2015 to 2016) was observed in this area (Figure-1). Rapid declines between 2009-2011 and 2013-2015 could be compensated significantly in the following years (Figure-4). In other words, it can be said that Northern Cyprus is following a

Figure-4. North Cyprus – Innovation/Sophistication Factors and Components, 2008–2016



Data source: Turkish Cypriot Chamber of Commerce (KTTO), North Cyprus global competitiveness surveys

very "dynamic" course in this area where competitiveness potential can be regarded as the most advanced stage. Policy makers need to attach special importance to science, technology and industrial policies in order to transform this highly significant trend of fluctuation into a general upward trend. Northern Cyprus is a country that can make significant leaps in the field of ISF when certain conditions are met. If the basic constraints in this area are eliminated, Northern Cyprus may start to increase overall competitiveness at a considerable rate in the medium and long term. Looking at the average of the last three years (2014, 2015 and 2016), the key constraints in the field of "business sophistication" are: low competitive advantage; inadequate production processes and inadequate supply chain. Looking at the average of the same years, the most obvious problems in the field of "innovation" are: Government procurement of advanced tech products, the companies have insufficient R&D expenditures and the inadequacy of private sector-university cooperation in the research.

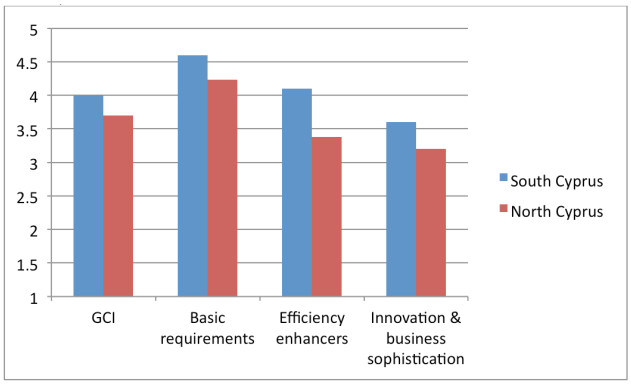
Northern Cyprus and Southern Cyprus: Comparative Review, 2008-2016

In this subsection, we will compare Southern Cyprus and Northern Cyprus in terms of global competitiveness. These two countries have been sustaining their economic and social lives under separate states in the same island for more than forty years. Identifying comparative advantages and disadvantages of these two countries, especially in these days when peace and unification efforts are gaining momentum, will enable both communities to assess economic development and competitive potential on a concrete basis.

In certain areas the disadvantages of one party may overlap with the advantages of the other, and a possible merger may provide significant "mutual benefits" through the development of "complementarity" relationships. In other words, the relative competitiveness differences between the two countries can be regarded as a factor promoting unification.

On the other hand, a possible merger could lead to an increase in the competitive power of both parties. A possible unification (or at least economic integration) can rapidly increase the competitiveness of the entire island by consolidating the advantages of both sides, creating "scale economies" in specific sectors within the island and expanding the opportunities for access to foreign markets at the same time by providing domestic market growth.

Figure-5. North Cyprus and South Cyprus – GCI and Its Main Components – Latest index values, 2016



Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

For these reasons, we look at the southern and northern part of the island in terms of competitiveness in detail and we would like to compare it. With this comparison, we aim to be able to see the incentive aspects of the convergence of competitiveness differences and to evaluate the potential for progress and development together, which can be achieved through unification or economic integration.

In Figure 5, the global competitiveness index (GCI) of Cyprus and Northern Cyprus in 2016 is presented along with three sub indexes. In this way it is seen that North Cyprus is behind Cyprus in terms of all the three sub-indexes. However, it can said that these competitiveness differences are not significant or prominent. The difference in the GCI is only 0.34 points. The differences in the components of "basic requirements" (BR), "efficiency enhancers" (EE) and "innovation and sophistication factors" (ISF) are 0.38, 0.68 and 0.40, respectively.

At this point, in order to better understand the current situation of both Southern and Northern Cyprus it may be useful to compare these two countries with the top 10 strongest countries in global competitiveness. In Table 1 below, the averages of the countries ranked in the top 10 in the 2016-2017 Global Competitiveness Report of the World Economic Forum and the differences with Southern and Northern Cyprus are presented.

As seen in Table 1, the GCI average of the 10 strongest countries in the global competition is 5.58. This average can be considered as the target value to be reached in Southern Cyprus and Northern Cyprus in order to make some practical calculations. Southern Cyprus's distance from the target is 1.54 points, while Northern Cyprus has a gap of 1.88 points. Given the distances of these two countries from the target, it can be concluded that the 0.34 point difference between the two countries is relatively small. For example, North Cyprus's distance from the target (1.88) is only 1.22 times the distance from South Cyprus's destination (1.54). In other words, if South Cyprus needs to cover 100 units to reach the target, then Northern Cyprus should cover 122 units. Based on the same ratio, the distance Northern Cyprus must reach Southern Cyprus in GCI is only 22 units.

When we do this simple but useful exercise for the three sub indexes the following results arise:

Table-1. Top 10 countries in global competitiveness, North Cyprus and South Cyprus, 2016

	GCI	Basic Requirements (BR)	Efficiency Enhancers (EE)	Innovation & Sophistication Factors (ISF)
Average of top 10 countries	5.58	5.96	5.51	5.45
South Cyprus	4.04	4.61	4.06	3.61
North Cyprus	3.70	4.23	3.38	3.21
South Cyprus – North Cyprus difference	0.34	0.38	0.68	0.40
Top 10 countries – South Cyprus difference	1.54	1.35	1.45	1.84
Top 10 countries – North Cyprus difference	1.88	1.73	2.13	2.24

Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)
Notes: Top 10 countries in GCI rankings in the 2016-2017 Global Competitiveness Report of the World Economic Forum: 1. Switzerland, 2. Singapore, 3. USA, 4. Holland, 5. Germany, 6. Sweden, 7. United Kingdom, 8. Japan, 9. Hong Kong, 10. Finland.

i. To reach the target in BR, if Southern Cyprus has to cover 100 units, Northern Cyprus should cover 128 units. In the same way, the distance that Northern Cyprus has to cover in order to reach Southern Cyprus in BR is 28 units.

ii. To reach the target in the EE, Northern Cyprus must travel 147 units where Southern Cyprus needs to cover 100 units. In the same way, the distance that North Cyprus must travel to reach Southern Cyprus in EE is 47 units.

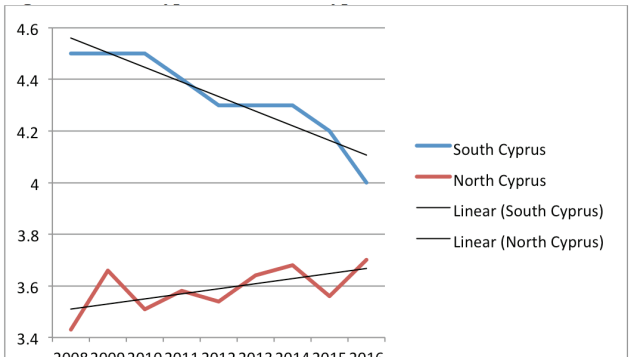
iii. In order to reach the target in ISF, Northern Cyprus should cover 122 units where Southern Cyprus needs to cover 100 distances. In the same way, the distance Northern Cyprus has to travel to ISC in order to reach Southern Cyprus is 22 units.

In short, it is clear that Northern Cyprus is behind Southern Cyprus in 2016, both in the GCI and in the three sub-indexes. However, it can be said that the competitiveness disparities between Southern Cyprus and Northern Cyprus are largely derived from "efficiency enhancers" (EE) and the difference in "innovation and sophistication factors" (ISF) is rather small. In this respect, it can be considered that the relative advantage of Northern Cyprus against Southern Cyprus is in ISF and the relative disadvantage is in EE.

In this subsection, we have reviewed the current situation (focusing on 2016) of Southern Cyprus and Northern Cyprus up to here. However, it is useful to examine recent trends in order to understand the competitiveness dynamics and potential development opportunities of countries. For this reason, we will proceed with the development of the two countries' competitiveness for the period 2008-2016.

In Figure 6, the observed changes in the GCI values of these two countries are presented together with the linear trend lines. It is seen that during the period of 2008-2016, Southern Cyprus has experienced a relatively rapid and steady decline in the GCI and that Northern Cyprus has made a slow progress against it. During this nine-year period, Southern Cyprus's GCI decreased by about 0.5 points, while Northern Cyprus rose by 0.27 points. The difference, which was about 1.07 points in 2008, dropped to 0.30 points in 2016. According to the calculations made using equations of trend lines, it is expected that Northern Cyprus will catch Southern Cyprus after 6 years in GCI if the two countries continue their trends over the past nine years in the coming years. This, of course, is not a realistic scenario. This is because the regular and rapid decline of Southern Cyprus in the GCI is largely due to exceptional adverse conditions during the period 2008-2016. Since the effects of the global financial crisis that started in 2008 coincided with the financial crisis of Southern Cyprus (and Greece) itself, this country suffered from economic and competitive difficulties during this period. Assuming

Figure-6. North Cyprus and South Cyprus – GCI, Values, 2008–2016



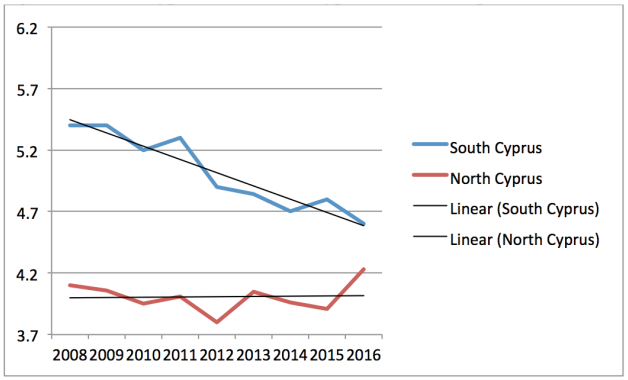
Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

that these troubles will gradually diminish in the coming years, it can be assumed that Southern Cyprus will see improvements in the GCI. Under those conditions, it may take much longer for Northern Cyprus to catch up with Southern Cyprus at the current pace of progress in the GCI.

In short, Northern Cypriot policy makers should not consider the dramatic decline in the gap in Southern Cyprus over the past nine years at the GCI as a promising development. The gap narrowed to a considerable extent, but rather from the exceptional negative conditions experienced by Southern Cyprus rather than the success of Northern Cyprus. Therefore, Northern Cypriot policy makers should do a lot more than the past nine years in order not to reopen this closed gap and catch Southern Cyprus in the not-too-distant future.

In the same period, developments in the three basic components of GCI for Southern Cyprus and Northern Cyprus can be seen in Figures 7, 8 and 9. Figure-7 presents the nine-year development in the field of "basic requirements" (BR) for both countries. Southern Cyprus's tension in BR has become even faster; The index value, which was 5.4 in 2008, is at 4.1 in 2016 with a decrease of about 0.80 percentage points. In Northern Cyprus, on the other hand, BR could make only 0.13 points of progress in nine years (4.1% in 2008 to 4.23% in 2016). The almost horizontal trend shows that Northern Cyprus has been considered in place for nine years in BR. As in the GCI, the gap with Southern Cyprus in the BR has closed down considerably (from 1.3 in 2008 to 0.37 in 2016); But this is

Figure-7. North Cyprus and South Cyprus – Basic Requirements, Index Values, 2008–2016



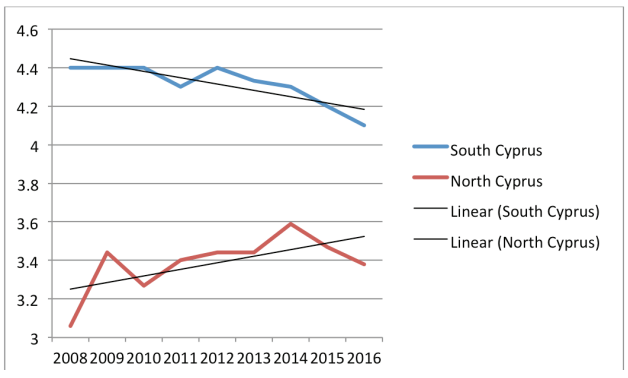
Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

again the rapid and regular regression of Southern Cyprus, not the success of Northern Cyprus.

Up to this point, we have observed that the rate of decline of Southern Cyprus in the GCI and BR during the period 2008-2016 is higher than the rise in the respective index values for Northern Cyprus. For this reason, we emphasized the decline of Southern Cyprus as the main source of the decrease in the gap. The trends of the tendencies of the countries are confirming this determination. At GCI, the slope of the Southern Cyprus trend line is approximately -0.057, while the Northern Cyprus is 0.020. At BR, the slope of the Southern Cyprus trend line is about -0.108, while the Northern Cyprus is 0.002.

Country comparison for "Efficiency enhancers" (EE) is presented in Figure-8. Unlike GCI and BR, the rate of decline of Southern Cyprus in EE is found to be approximately equal to the rate of advance of Northern Cyprus. The trend of the trend lines in EE is respectively about -0.033 and 0.034 in Southern Cyprus and Northern Cyprus. For this reason, we can say

Figure-8. North Cyprus and South Cyprus – Efficiency Enhancers, Index Values, 2008–2016



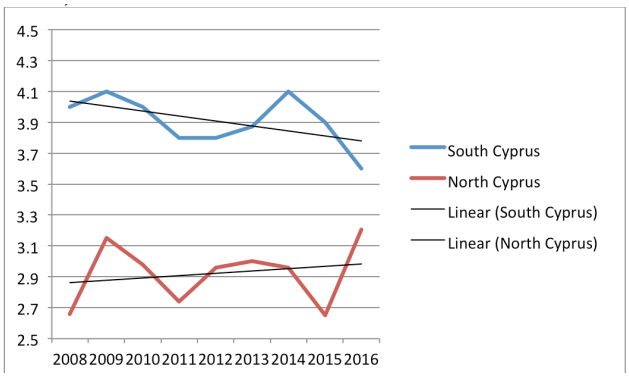
Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

that the decline in the gap between two countries for EE is an important contributor to the progression in Northern Cyprus as much as the share of tension in Southern Cyprus.

As seen in Figure-8, the EE index value is about 4.4 in Southern Cyprus in 2008 and 3.06 in Northern Cyprus. In 2016, the same index is, respectively, and approximately, 4.1 and 3.38. The difference from 2008 to 2016 decreased from 1.34 to 0.72. However, the remarkable decline observed in the last two years (since 2014) in Northern Cyprus is remarkable. If this area had not been neglected in the last two years and the upward trend before 2014 was ongoing, we can emphasize that the rate of progress of Northern Cyprus over the past nine years would exceed the rate of decline of Southern Cyprus. So, on those terms, the difference with Southern Cyprus would be much smaller.

Figure-9 shows the performances of the two countries in the field of "innovation and sophistication factors" (ISF). While ISF index is regressing for Southern Cyprus, for Northern Cyprus it has advanced. As in the GCI and BR,

Figure-9. North Cyprus and South Cyprus – Innovation & Sophistication Factors, Index Values, 2008–2016



Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

the rate of decline of Southern Cyprus in ISF is higher than the rate of North Cyprus's advance (the trend of the lines is approximately -0.032 and 0.015, respectively). Therefore, the main source of the decrease in the ISF is the regression of Southern Cyprus.

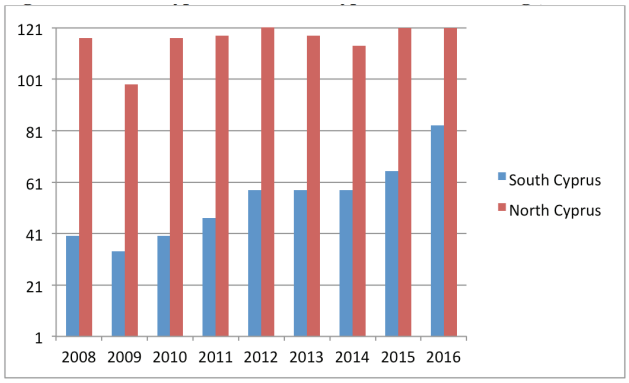
As seen in Figure-9, the index value of Southern Cyprus in ISF decreased by 0.4 points in 2008 from approximately 4.0 in 2016 to 3.6 in 2016. Northern Cyprus, on the other hand, rose from approximately 2.7 to 3.2 and recorded an increase of 0.5 points. From 2008 to 2016 the difference between the two countries has fallen from 1.3 to 0.4. Unlike other components, larger fluctuations are observed in ISF during the period for both countries. This observation may

indicate that the ISF field is more sensitive to conjunctural factors and thus providing a stable development in this area requires more effort than other areas. For this reason, it can be said that policy makers need to be more careful and diligent when developing their policy and reforming and taking into account a variety of factors when it comes to this important determinant of competition power.

During the period 2008-2016, changes also took place in the world rankings parallel to the developments in the GCI and its components of Southern Cyprus and Northern Cyprus. As expected, Southern Cyprus recorded great strains in this period, while the changes in the order of Northern Cyprus were smaller. The GCI ranks of the two countries are shown in Figure-10. Both Southern Cyprus and Northern Cyprus scored their best in the year 2009. That year, Southern Cyprus ranks 34th, Northern Cyprus ranks 99th. However, as of 2016, Southern Cyprus ranks 83rd and Northern Cyprus ranks 121st. Given that in 2008, the first year of the period examined, Southern Cyprus is 40th and North Cyprus is 117th, it can be stated that the regression of Northern Cyprus is much smaller than Southern Cyprus.

The ranking changes in the GCI and the sub-indexes of the

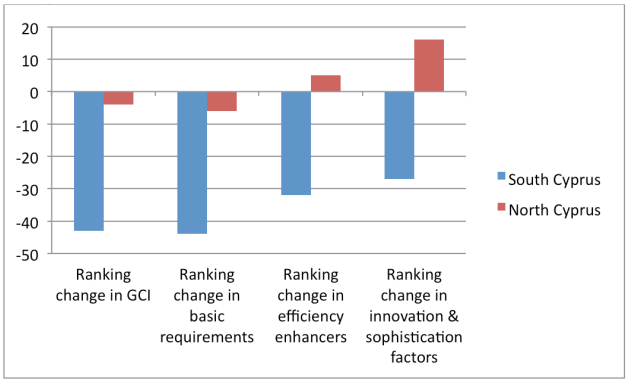
Figure-10. North Cyprus and South Cyprus – GCI Rankings, 2008–2016



Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

two countries are presented in Figure-11, with 2008 being the start and 2016 as the ending year. From 2008 to 2016, the GCI rank has dropped to 43 places in Southern Cyprus and 4 places in Northern Cyprus. On the other hand, Southern Cyprus has fallen significantly in all three sub-indexes of the GCI: 44 in the field of "basic requirements", 32 in "efficiency enhancers" and 27 in "innovation and sophistication factors". North Cyprus, on the other hand, has fallen only 6 places in the area of "basic requirements" "Efficiency enhancers" and "innovation and sophistication factors" in

Figure-11. North Cyprus and South Cyprus – Change in Rankings, GCI and Its Components, From 2008 to 2016

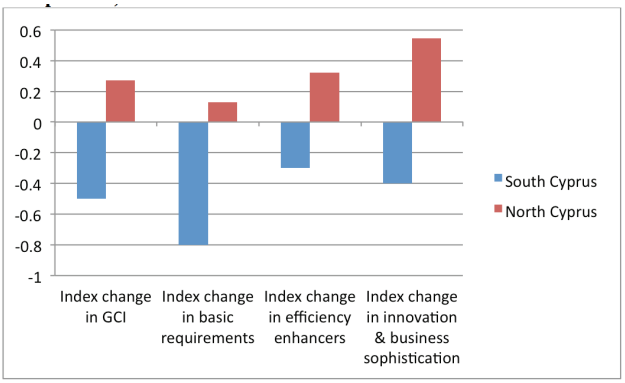


Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

the 5th row and 16th row respectively. Based on all these observations, it can be emphasized that the relative global position of Southern Cyprus and Northern Cyprus in the last nine years has changed considerably and all these relative changes are in favor of Northern Cyprus.

From 2008 to 2016, when we consider the change in the index values of the GCI and the sub-indexes, we find that the relative changes in favor of Northern Cyprus are even more pronounced. These changes are shown in Figure-12. Clearly, in terms of changes in the index values, Southern Cyprus has declined both in the GCI and in three sub-indexes, while Northern Cyprus has made progress in all of them. In GCI, Northern Cyprus has advanced by 0.27 points, while Southern Cyprus has decreased by 0.5 points. Southern Cyprus's three component decompositions are 0.8, 0.3 and 0.4 points respectively. The progression of these three components in Northern Cyprus is 0.13, 0.32 and 0.55 points respectively.

Figure-12. North Cyprus and South Cyprus – Change in Index Values, GCI and Its Components, From 2008 to 2016

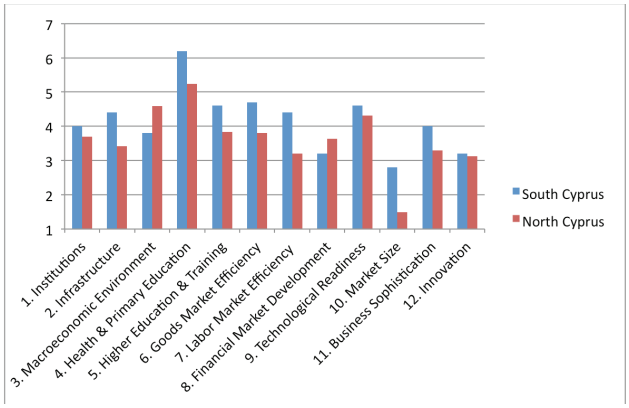


Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

Based on all these observations, it can be emphasized that Northern Cyprus generally performed much better than Southern Cyprus. However, as noted above, this relative performance advantage of Northern Cyprus is mainly due to the negative economic and financial conditions experienced by Southern Cyprus over the past nine years. It is not possible to say that Northern Cyprus has demonstrated superior success in any field over the past nine years.

In order to further examine the competitiveness of the two countries and their performance in the immediate past, it is useful to go beyond the three sub-indexes and address the

Figure-13. North Cyprus and South Cyprus – 12 Pillars, Latest Index Values, 2016



Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

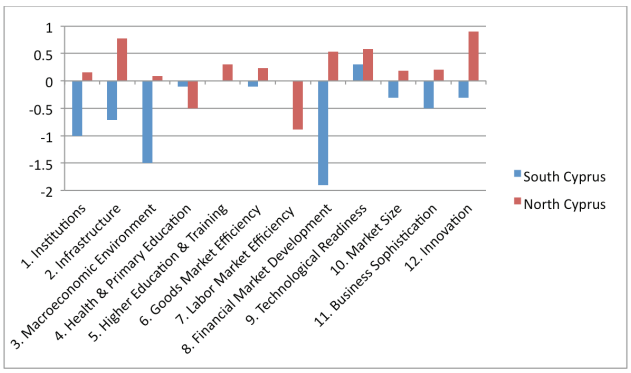
12 pillars that make up these indexes. For this purpose, the competitiveness of Southern Cyprus and Northern Cyprus in Figure-13, 14 and 15 is examined at these 12 pillar levels.

In Figure-13, 12 pillars of Southern and Northern Cyprus are shown by 2016. Despite the overall performance advantage over the last nine years of Northern Cyprus, for many pillars Southern Cyprus is predominantly ahead. By 2016, the only two areas which Northern Cyprus is ahead are "macroeconomic environment" and " financial market development". It can be said that the superiority of Northern Cyprus in these two areas is mainly due to the macroeconomic and financial crises experienced by Southern Cyprus in the recent past.

The first three areas in which the greatest differences are observed among the other ten areas where Southern Cyprus is ahead are as follows: "Market size", "labor market efficiency" and "infrastructure". When the politically recognized position by the international community, not being exposed to economic isolation conditions and being a member of the EU is considered, it becomes easier to explain how Southern Cyprus scores ahead of the Northern Cyprus for those three areas. Southern Cyprus has a wider domestic market thanks to its relatively high population and relatively easier access to export markets thanks to favorable foreign political conditions, than Northern Cyprus. It can be said that Southern Cyprus is ahead of North Cyprus in terms of "market size" for these reasons. Moreover, Southern Cyprus as an EU member state, is under pressure to comply with EU rules and standards in labor market regulation. This pressure could explain the fact how Southern Cyprus is scoring behind Northern Cyprus considerably in the labor market efficiency pillar. Lastly, positive external political conditions can create an investment climate that promotes foreign investment in the country, and the EU investment-focused sources can be the main reasons for South Cyprus to be ahead of North Cyprus in infrastructure investments and performance.

These observations and determinations of the relative posteriority of Northern Cyprus regarding the pillars, suggest that we should not overlook the fact that Northern Cyprus does not compete on equal terms with Southern Cyprus. Although Southern Cyprus has recently experienced great economic and financial difficulties, it is more fortunate than Northern Cyprus in terms of external political conditions, and confronted none of the severe constraints that Northern Cyprus has suffered. When we add this great opportunity in terms of foreign political conditions, we would like to emphasize the competitive advantages, which Southern Cyprus has overs Northern Cyprus, should not be overrated.

Figure-14. North Cyprus and South Cyprus – 12 Pillars, Change in Index Value, From 2008 to 2016



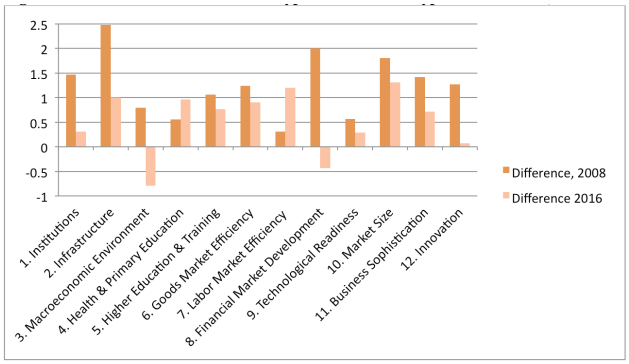
Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

Figure 14 presents the changes in value for the pillars of the two countries from 2008 to 2016. The only area where Southern Cyprus could make progress is "technological preparation". Southern Cyprus has either regressed in the other 11 pillars or hold the same. As expected, the "financial market development " and "macroeconomic environment" are areas where the greatest regressions are observed. The major regressions which are significant are in the "institutions" and "infrastructure" pillars.

In Northern Cyprus, the index values for only two areas have decreased: "health and primary education" and "labor market efficiency". The decline in these two areas is an important warning for Northern Cypriot policy makers. Firstly, it can be said that these two areas require policy measures and reforms. The areas where Northern Cyprus has made the most progress from 2008 to 2016 are "innovation" and "infrastructure". Progress in the areas of "technological preparation" and "financial market development" is also striking. The advancements in these pillars exhibit concrete reasons for the relative success achieved, and it appears to be of great benefit in making further arrangements and reforms that will consolidate and institutionalize these achievements.

Finally, in Figure 15, the differences between the values for the 12 pillars of Southern Cyprus and Northern Cyprus are shown comparatively for the years 2008 and 2016. According to this figure, the differences between south and north for many areas from 2008 to 2016 have decreased considerably.

Figure-15. Difference between North Cyprus and South Cyprus – 12 Pillars, 2008 and 2016



Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

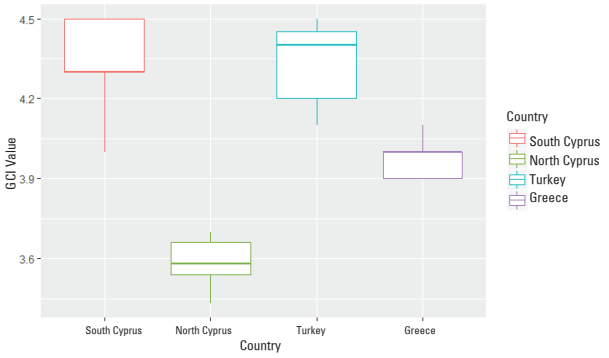
Within the 12 pillars there are only two areas where the south-north difference has increased. Those are, "health and primary education" and "the labor market efficiency ". We have emphasized above, that policy and reform priority should be given to these two areas by Northern Cypriot policy makers. It is observed that the southern-northern difference has decreased in the other 10 areas. Moreover, in "macroeconomic environment" and "financial market development", Southern Cyprus is ahead in 2008 and Northern Cyprus in 2016. Other major areas that have contributed to the reduction of South-North differences from 2008 to 2016 are "Institutions", "infrastructure" and "innovation".

Northern Cyprus, Southern Cyprus, Turkey and Greece: Comparative Review, 2008-2016

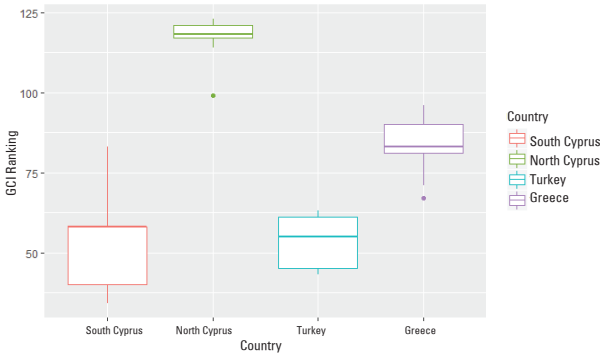
After comparing Southern and Northern Cyprus in detail, we would benefit from enriching our findings by briefly examining the competitiveness of Turkey and Greece, both of which have historical, political and economic ties with the counties of the Cyprus island. It is known that there is strong links and close relations between North Cyprus and Turkey both politically and economically. On the other hand, although the linkages and relations between the Greece and the Greek Cypriots, are not as strong and tight as those between North Cyprus and Turkey, yet are recognized and sought by the international community and the functioning of the economies of these two countries has also included important parallels. In the years following the global financial crisis that began in 2008, both Southern Cyprus and Greece have experienced their own economic and financial crises in the same period. Therefore, addressing the developmental trends in competitiveness of Southern Cyprus and Northern Cyprus together with the performances of Turkey and Greece will provide our concept with a more comprehensive and deeper perspective.

First, we will consider these four countries for the period 2008-2016 through statistical analysis known as "box-plot" (Box-graph-1 and Box-graph-2). The box-graphs will be useful for readers who want to see certain details about the statistical distribution of the observations arranged throughout the period. In the box-graphs, the lower bounds of the country's boxes represent the lower quartile of the observed observations during the period (lower quartile), and the upper bound of the boxes represents the 75th

Box-Plot-1. Northern Cyprus, Southern Cyprus, Turkey and Greece – GCI, Index Values, 2008-2016



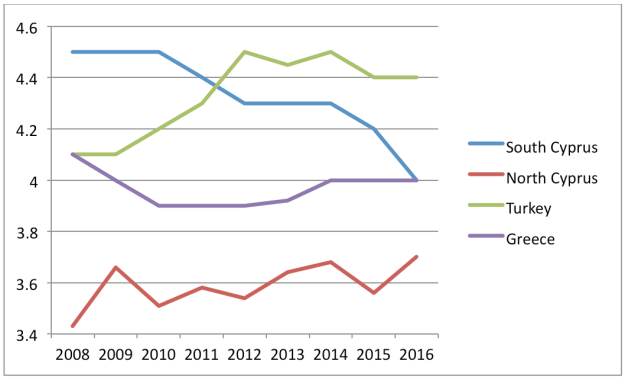
Box-Plot-2. Northern Cyprus, Southern Cyprus, Turkey and Greece – GCI, Rankings, 2008-2016



percentile of the observations (upper quartile). The line in the middle of the boxes gives the "median" value, which corresponds to 50% of the observations. The ends of vertical lines outside the boxes show the maximum and minimum values of the observations if there are no outlier values. If there are discrete values, the vertical lines outside the boxes give values about 1.5 times the distance between the 75% and 25% values, and the discrete values are shown as dots. The narrowness of the boxes indicates the "widespread" distributions relative to the "pointed" distributions and the wideness to the dikes.

In box-graph-1, it is seen that Turkey and Southern Cyprus have a more "widespread" distribution in terms of GCI in 2008-2016 period than Greece and Northern Cyprus. The median values of Turkey and Southern Cyprus are higher than those of Greece and Northern Cyprus. These statistical distribution properties, as seen in box-graph-2, reflect in a similar way to GCI ranking.

Figure-16. Northern Cyprus, Southern Cyprus, Turkey and Greece – GCI, 2008-2016



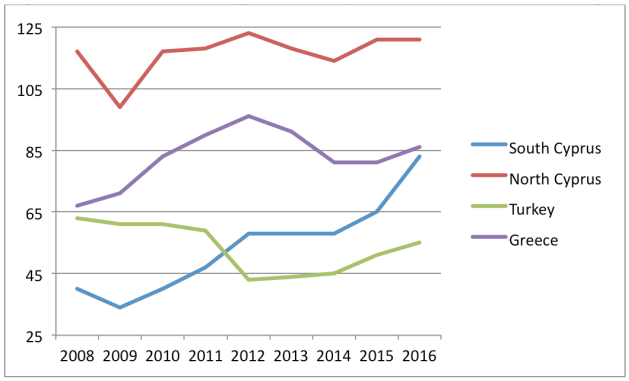
Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

Figure-16 shows the performance of these four countries in terms of GCI value during 2008-2016 period. As you can see, Northern Cyprus is clearly under the other three countries throughout the period. During the mentioned period, Northern Cyprus was released at approximately 3.45-3.70 points while the other three countries performed around 3.90-4.40 points.

From the start (2008) to the end (2016) of the period, there is progress in Northern Cyprus and Turkey whereas regression in Southern Cyprus and Greece. At the beginning of the period, Turkey and Greece were equal to about 4.10 points, and at the end of the period Turkey succeeded Greece by 0.40 points. What is more striking is that Southern Cyprus has fallen below Turkey, despite being the strongest of those four at the beginning of the period. At the beginning, Southern Cyprus was 0.40 points ahead of Turkey, in the 2011-2012 period Turkey caught up and by the end of the period it was 0.40 percentage points ahead of Southern Cyprus and became the strongest country in terms of competitiveness among these four countries. As of last year, the competitiveness of Greece and Southern Cyprus has been equalized and these two countries are about 0.30 points ahead of Northern Cyprus.

Figure 16 also implies that Northern Cyprus has missed an important opportunity in terms of catching up with the difference in terms of GCI, both with Southern Cyprus and Greece. In this period, Northern Cyprus could have performed better against the tension in Southern Cyprus and Greece, and by 2016, it could have been in a similar position with these two countries. When the trends of the lines take into consideration, the annual rate of progress of Turkey in this period is about 0.048 points, while it is 0.020 points in Northern Cyprus. For example, if Northern Cyprus could have kept the same pace as Turkey in this period, with the same initial level, and the GCI index value could have been around 3.90 rather than 3.70 in 2016. As Southern

Figure-17. Northern Cyprus, Southern Cyprus, Turkey and Greece – GCI Rankings, 2008-2016



Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

Cyprus and Greece are at 4.0 points in 2016, we can say that Northern Cyprus missed the opportunity to reduce the difference between Southern Cyprus and Greece by 0.10, not 0.30.

In Figure 17, changes in the GCI ranking can be observed in these four countries during the period 2008-2016. Parallel to the developments in the index values, Southern Cyprus and Greece have fallen further down, while Turkey has risen to its rank. Northern Cyprus appears to be stuck with the order of 115-125, except for 2009.

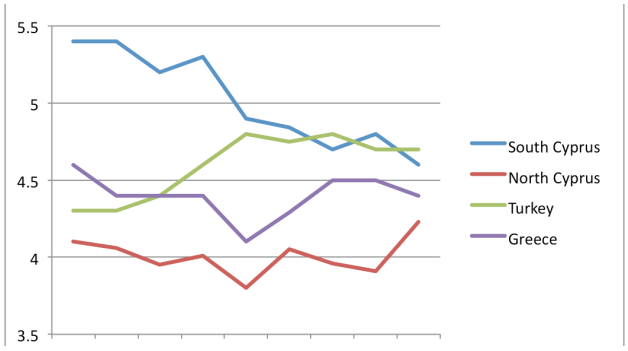
In the GCI ranking, the increase in Turkey was mainly in the period of 2008-2012 (63rd place to 43rd place). Turkey, which started to become stagnant after 2012 in terms of competitiveness performance, started to grow gradually in order and ranked 55th in 2016. On the contrary, Greece's decline was mainly in the period of 2008-2012 (67th place to 96th place). Greece settled in 86th place in 2016, with a certain recovery after 2012. Southern Cyprus, which has the most regress, the performance among these four countries in terms of ranking, has fallen into 83th place in 2016, while it was 40th in 2008, with a steady decline except for 2009. It can be said that Northern Cyprus, which is usually released between 115-125, has not achieved a remarkable success against the other three countries. However, as we have mentioned above, during this nine-year period in which Southern Cyprus and Greece experienced significant declines in the GCI ranks, Northern Cyprus could have grown or moved closer to these two countries if it had done well-designed policies in those areas and had effectively made necessary reforms, rather than neglecting certain components of competitiveness.

In Figure-18, 19 and 20, the three sub indexes of the GCI are presented in the four countries during 2008-2016. As can be seen, Northern Cyprus is also under these three basic components in all three periods.

Country performances in the field of "basic requirements" (BR) can be traced in Figure-18. In BR, Turkey, although performed behind Greece and Southern Cyprus at the beginning of the period, first caught up to Greece, then to Southern Cyprus, and by 2016 left both of them behind. Northern Cyprus, while watching in the range of 3.9-4.1, reached 4.23 with a quick jump last year, significantly reducing the difference between Southern Cyprus and Greece. At the beginning of the period, the difference of 1.30 points with South Cyprus decreased to 0.40 points at the end of the term; The difference with Greece became less than 0.20 points from 0.50.

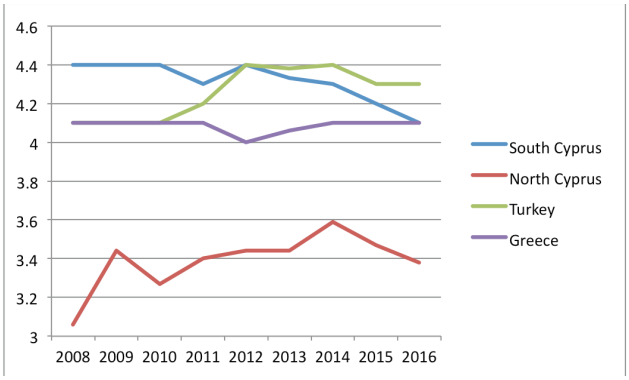
Figure 19 shows the changes in the "efficiency enhancers" (EE) sub index for the four countries. At EE, Turkey is advancing and going ahead of Southern Cyprus. It is also valid for this area that Turkey starts to pause and gradually

Figure-18. Northern Cyprus, Southern Cyprus, Turkey and Greece – Basic Requirements, 2008–2016



Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

Figure-19. Northern Cyprus, Southern Cyprus, Turkey and Greece – Efficiency Enhancers, 2008–2016

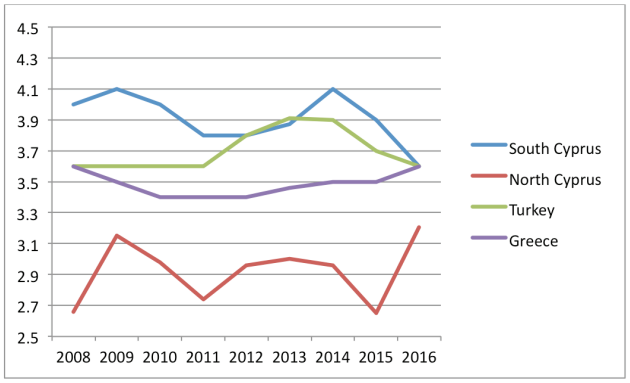


Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

start to decline since 2012. As a result of a slight recovery in Greece after 2012, the steady descent of Southern Cyprus is noteworthy. By 2016, Southern Cyprus and Greece have been equated to 4.10. Turkey is 0.20 points above that value, while Northern Cyprus is below 0.70 points. In EE, it seems significant that, Northern Cyprus declined at almost the same rate as Southern Cyprus after 2014. At the beginning of the period for Northern Cyprus, the difference of about 1.34 points with Southern Cyprus and the difference of 1.04 points with Greece decreased to 0.72 points at the end of the period.

Lastly, Figure-20 presents the changes in the "innovation and sophistication factors" (ISF). The most interesting observation for ISF is the equal positions of Turkey and Greece at the beginning of the period (2008), with about 3.6 points, keeps the same at the end of the period (2016) with 3.6 points. Turkey has scored ahead of Greece during the period, the gap has risen to 0.45 points in 2012, but it started to decline after 2013, and at the end of the period, the countries met again at the same point. While Southern Cyprus was the leader among the four countries with

Figure-20. Northern Cyprus, Southern Cyprus, Turkey and Greece – Innovation & Sophistication Factors, 2008–2016



Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)

a score of 4.0 points at the beginning of the period, after experiencing significant fluctuations during the period and showing a rapid decline of 3.6 points from 2014, at the end of the period equalized to Turkey and Greece. Northern Cyprus also displayed a fluctuating performance, raising its score from 2.7 to 3.20 at the end of the period. Thus, in the Northern Cyprus ISF, the 1.34 point difference between Southern Cyprus and the 0.94 point difference between Greece at the beginning of the period has been reduced to 0.40 points at the end of the period.

In summary, we can emphasize that in the period 2008-2016, Northern Cyprus reduces the differences both with the Southern Cyprus and Greece in all three sub-indexes. In terms of the performance of the period, it can be stated that Northern Cyprus has performed a relative performance against these two countries which cannot be considered as bad in both BR and ISF. However, the dominant factor in these developments is that Southern Cyprus is failing both in BR and ISF, and for Greece, while decreasing performance in BR, staying the same in ISF. The current situation by 2016, is that, the area in which Northern Cyprus reaches the closest to Southern Cyprus and Greece is the BR. On the other hand the most remote area for Northern Cyprus's performance is EE. One of the pillars of the EE, the " labor market development" (as emphasized in the previous sub-section), is where Northern Cyprus has performed poorly, and this can be considered to be particularly effective on this.

Interestingly, in this period, BR is the area in which Northern Cyprus is the most unsuccessful in terms of performance against Turkey. The difference with Turkey has increased by years only in this area. In EE and ISF, the difference with Turkey has decreased. The decrease in ISF is much more significant than the difference in EE. In other words, Northern Cyprus showed the best relative performance against Turkey in ISF. In the current situation, the ISF is the area where Northern Cyprus is the closest to Turkey. The most remote area is EE.

If we would all interpret these comparative results in terms of Northern Cyprus's performance relative to the three other countries, we can point out that the main priority that emerged before the Northern Cypriot policy makers was the EE domain. This is usually the most overlooked area. Especially after 2014, it is beneficial to intervene immediately in the very apparent tension that is observed in this area. On the other hand, it is also useful to think about ways to accelerate the stationary BR field. The ISF field is the most promising area. The large fluctuations observed in the last nine years indicate that attention and sensitivity should be most emphasized in policy implementation and reform.

More detailed figures of 12 pillars for the comparison of South / North Cyprus, Turkey and Greece in this sub-section have been brought to the attention of the reader in the "Annexes" at the end of the report.

Northern Cyprus and Selected Island Countries: Comparative Review, 2008-2016

In this sub-section, we will compare Northern Cyprus with selected island country economies. As of 2017, the United Nations (UN) has identified and categorized 57 countries and regions as "developing small island states" in the world. As this classification began in 1992, an advanced island country like Singapore is still listed. We obtained a group of 11 countries that we can compare to Northern Cyprus by adding Bahrain and Malta to developing small island countries with "global competitiveness" (GC) data. Our main goal here is to better understand the relative situation of Northern Cyprus, focusing on small island countries with some important similarities in terms of constraints on development. Some of the well-known common constraints of small island countries are as follows:

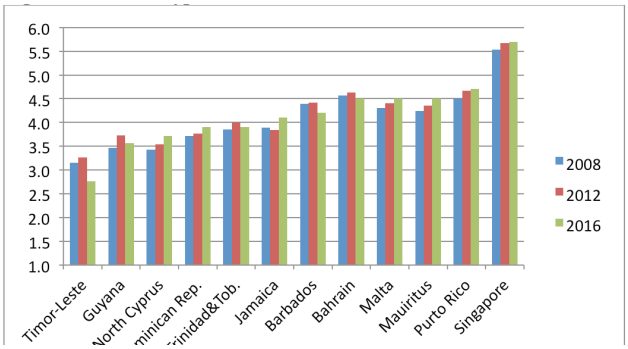
- Small population and area
- Natural resource inadequacy
- Inadequate human capital and qualified labor force
- Shortage of markets and inadequate demand
- Difficulties of developing scale economies
- High transportation, transportation and communication costs
- High dependency on imports
- Shortage of export volume
- Low variety of exports and production
- Difficulties in accessing foreign markets
- Restrictions on protection from political, economic and financial crises
- Vulnerable environmental conditions and high probability of natural disasters

After briefly comparing the GCI performance of the 11 island countries, which are more or less similar in their characteristics to those of Northern Cyprus, for the period 2008-2016 in this sub-section of the report a further econometric analysis, including more detailed and causal relations will be done in the coming sections.

In Figure-21, the GCI values of selected island countries and Northern Cyprus are presented for the years 2008, 2012 and 2016. Countries are ranked from low to high according to their 2016 index values. Singapore is the leader in all three years with a very distinct difference. Barbados, Bahrain, Malta, Mauritius and Puerto Rico have become relatively better-performing island countries, among the 12 island economies (including Northern Cyprus). Timor-Leste, one of the poorest countries in the world, is the one performing the worst in all three years.

In spite of small but regular increases in the last three years, the position of Northern Cyprus on the GCI ranking compared to the island economies is, unfortunately, quite thought-provoking. In this group of 12 countries, Northern Cyprus scored the second from the last in 2008 and 2012,

Figure-21. North Cyprus and Island Countries – GCI, 2008, 2012 and 2016

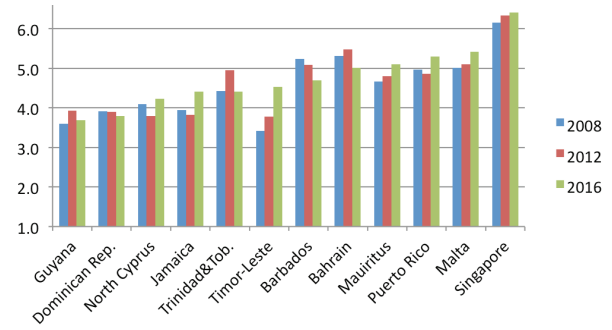


Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)
Notes: Countries are sorted according to their 2016-GCI values in ascending order. Data for 2016 are not available for Timor-Leste, Puerto Rico and Guyana. As the latest available data years; 2014 is used for Timor-Leste and Puerto Rico, and 2015 for Guyana.

and third from the last in 2016. Unlike other countries in this region, the fact that Northern Cyprus is trying to compete in very severe conditions, such as unrecognition and economic isolation, should of course be taken with caution. However, it is still a matter of concern that Northern Cyprus has performed close to the least developed countries of the world, such as Timor-Leste and Guyana in GCI, and that it falls behind underdeveloped countries like the Dominican Republic, Trinidad & Tobago and Jamaica. In fact, it is worthwhile to note that this significant situation is also in effect in Southern Cyprus. By 2016, Southern Cyprus (which is not shown in the Figure) has fallen behind Jamaica. In this context, the following question arises: Would the "Federal Cyprus" still lag behind Jamaica in 2016, if the 2004 referendum had been called "yes" by Southern Cyprus as it was in Northern Cyprus? It is of course impossible to give a definite answer to such a counter-factual question. However, it is not exaggerating to think that a "federal" Cyprus might have ranked higher in this list by 2016 if it is assumed that the typical constraints of development and competitiveness of the island economy will be alleviated to some extent by unification.

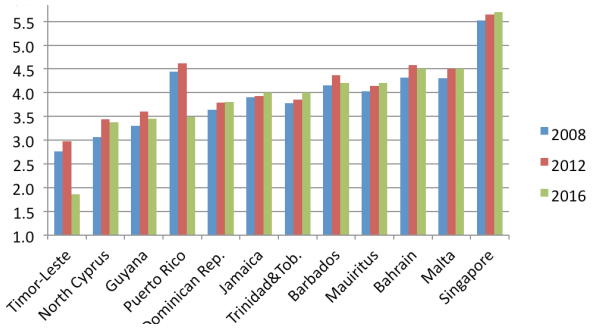
The index values of the three sub indexes of the GCI are presented for the years 2008, 2012 and 2016 in Figure 22, 23 and 24, for selected island countries and in Northern Cyprus. These figures, which show the sub indexes of "basic requirement" (BR), "efficiency enhancers" (EE) and "innovation and sophistication factors" (ISF) respectively, reinforce our determination regarding the significant and serious situation of Northern Cyprus. As of 2016, Northern Cyprus scores third from the last for the BR and the second for EE and ISF.

Figure-22. North Cyprus and Island Countries – Basic Requirements, 2008, 2012 and 2016



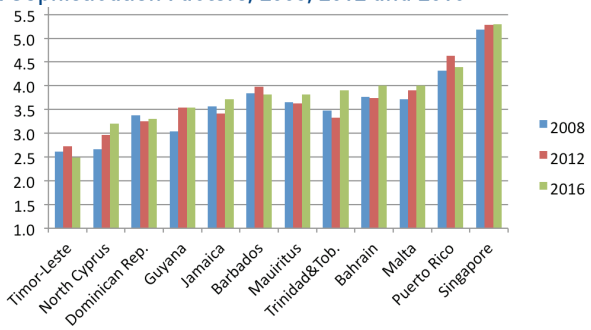
Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)
Notes: Countries are sorted according to their 2016-Basic Requirements index values in ascending order. Data for 2016 are not available for Timor-Leste, Puerto Rico and Guyana. As the latest available data years; 2014 is used for Timor-Leste and Puerto Rico, and 2015 for Guyana.

Figure-23. North Cyprus and Island Countries – Efficiency Enhancers, 2008, 2012 and 2016



Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)
Notes: Countries are sorted according to their 2016-Efficiency Enhancers index values in ascending order. Data for 2016 are not available for Timor-Leste, Puerto Rico and Guyana. As the latest available data years; 2014 is used for Timor-Leste and Puerto Rico, and 2015 for Guyana.

Figure-24. North Cyprus and Island Countries – Innovation & Sophistication Factors, 2008, 2012 and 2016



Data sources: World Economic Forum and Turkish Cypriot Chamber of Commerce (KTTO)
Notes: Countries are sorted according to their 2016-Innovation & Sophistication Factor index values in ascending order. Data for 2016 are not available for Timor-Leste, Puerto Rico and Guyana. As the latest available data years; 2014 is used for Timor-Leste and Puerto Rico, and 2015 for Guyana.

North Cyprus, South Cyprus, Turkey, Greece and Selected Island Countries: Econometric Regression Analysis, 2008-2016

Relating competitiveness indexes using an objective method

In the World Economic Forum documents, competitiveness is seen as a set of institutions, policies and factors that determine the productivity of a country. The level of productivity of the country also indicates the level of prosperity that the economy of the country can reach. Therefore, it would be right to concentrate on the competitiveness index.

The Global Competitiveness Index (KREE) in the World Economic Forum reports is expressed as a composite of 12 sub-indices. Each of these 12 sub-indices measures the different aspects of competitiveness and meets under three main headings: Basic Requirements; Event Boosters; Innovation and Development Factors. Subheadings of Basic Requirements are Institutions; Infrastructure; Macroeconomic Stability and Health and primary education. From these main points, Institutions show that the factors for economic development are determinative. The second title, Infrastructure, is the stage in which being effective is decisive. The last stage in economic development, macroeconomic Stability and Health and primary education, is the decisive factor in innovation. Finally, the headlines and subunits are multiplied by different weights to obtain the Global Competitiveness Index, KREE. Some of these sub-indices are made by weighting 1/3 and 1/2 by weight. The use of weights in this way is explained only in accordance with the revenue streams corresponding to the level of development of the country, otherwise the weights used are not based on any theoretical reasons.

The annual competitiveness reports prepared for the Northern Cyprus Economy follow the same method and give the following distributions to the sub-indices:

1. Basic Requirements (40%)
2. Activity Enhancers (50%)
3. Innovation and Sophistication Factors (10%)

In this part of the report, we will try to base the relation between sub-indices on an objective measurement method. The method we use for this purpose is a method that looks at the statistical relationship between measured sub-indices without parametric assumptions: Partial Least Squares (Path Modeling). This method developed by Norwegian born Swedish Statistician Herman Wold is particularly suitable for situations where theoretical explanations are inadequate and variables are difficult to measure and therefore empirical distributions are not available.

Partial Small Squares - Path Modeling consists of an inner and an outer model. The inner model contains hidden variables that are not directly measured. In our analysis, these are the Basic Requirements; Efficiency Enhancers; Innovation and Sophistication Factors and Global Competitiveness Index (GCI).

In the outer model, there is a group of manifest variables corresponding to each hidden variable in the inner model. These variables are in blocks. Manifest variables in the block corresponding to the Basic Requirements hidden variable are Institutions; Infrastructure; Macroeconomic Stability and Health and primary education. Representative variables in the block corresponding to the Efficiency Enhancers secret variable are, respectively, Higher education and training; Efficiency of the product market; The efficiency of the labor market, the development of the financial market; Technological preparation and Market size. The third hidden variable is the Business Development and Innovation in the manifest variables in the block corresponding to the variation of Innovation and Sophistication Factors . The last hidden variable is the Basic Requirements, which are calculated in order of the representative variables in the block corresponding to the Global Competitiveness Index (GCI); Efficiency Enhancers; Innovation and Sophistication Factors.

Partial Small Squares - Path Modeling method first handles the representative variables in each block. Using Principal Component Analysis techniques, we find the main component of this block and take into account the weights between them. Partially the same thing is repeated for all hidden variables. Then weights between the main components are determined and the main components are predicted by the method of Small Squares. Turning back to the new weights between the representative variables and the hidden variables predicted. Using these weights, the hidden variables are re-weighed and the relationship between them is found by the method of Small Squares. This process continues until the results are stable, until the

interchanges are less than a very small criterion. The result of the process is the weights between the variables and the loading and Small Squares coefficients.

The representative variables in the blocks must pass certain criteria in order for the loading coefficients to be meaningful. These are, respectively, Cronbach's alpha value; Dillon-Goldstein's rho value and the first and second Eigenvalues of the representative variables. If the first two measures have a value of 0.7 or more, it can be said that this variable is in a meaningful relation to the hidden variable. The fact that the first of the Eigenvalues is greater than 1 and the second Eigenvalue is less than 1 indicates that the representative variable blocks have a meaningful association with the hidden variable. Otherwise, it should be removed from the model by considering this variable as meaningless.

We will give the results of the Partial Small Squares - Path Modeling method below. This method requires no missing values in the data set. We have already set up the data set for Cyprus, Turkey, Greece, which we have created to compare the data of Northern Cyprus, namely the 11 island countries. In some cases, 4.4% were missing. We completed these missing values using the Multiple Imputation by Chained Equations (MICE) technique. The general rule is that incomplete values with a sum less than 20% can be completed. We obtained five separate filled datasets. In practice, averages are reported using this data. We would like to use only one of the completed series because we will repeat the Partial Small Squares - Path Modeling results by more than 200 using the bootstrap method.

Partial Small Squares - Path Model results are as shown in Table 1 below. Panel results show unidimensionality of the table as desired.

The abbreviations in the table are, TG:Basic Requirements; EA:Efficiency Enhancers; IG: Innovation and Sophistication Factors and KREE: Global Competitiveness Index. Both Cronbach's alpha value and Dillon-Goldstein's rho value are higher than 0.7. In the representative variable blocks, the first of the Eigenvalues is greater than 1 and the second Eigenvalue is less than 1.

There is also a harmonious connection between hidden variables and representative variables. The loading coefficients of only three representative variables have bounded values, less than 0.7. These variables are Macro_ stabilization, Health_Ilure and Market_type respectively.

Table 1. Blocks Unidimensionality

BLOCKS UNIDIMENSIONALITY

	Mode	MVs	C.alpha	DG.rho	eig.1st	eig.2nd
TG	A	4	0.802	0.874	2.57	0.869
EA	A	6	0.885	0.916	3.91	0.932
IG	A	2	0.860	0.935	1.75	0.246
REE	A	3	0.772	0.870	2.08	0.701

Table 2. Variables which can be deleted from the model.

OUTER MODEL

	weight	loading	communality	redundancy
TG				
1 Makro istikrar	0.234	0.613	0.376	0.000
1 Sağlık İlköğretim	0.207	0.687	0.471	0.000
EA				
2 Piyasa Büyüklüğü	0.125	0.502	0.252	0.209

The cross-load coefficients are consistent within themselves, and the representative variables best explain the block they are included in. There is no representative among them who betrayed the block.

All parameters predicted by Small Squares method in the internal model are statistically significant. Efficiency Enhancers and Global Competitiveness Index representatives have a positive influence. The influence of a representative of one variable Innovation and Development Factors or Basic Requirements, is negative. This variable is the Basic Requirement. Apparently, the impact of Basic Requirements on Innovation and Development Factors is immortal. We will test later on whether this applies to all countries and all seasons

Table 3. Estimation of inner model parameters.

INNER MODEL

$EA

	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	2.18e-16	0.0358	6.09e-15	1.00e+00
TG	9.11e-01	0.0358	2.54e+01	6.83e-53

$IG

	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	-4.92e-16	0.0261	-1.89e-14	1.00e+00
TG	-3.15e-01	0.0631	-5.00e+00	1.80e-06
EA	1.23e+00	0.0631	1.95e+01	9.19e-41

$KREE

	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	5.83e-16	0.0227	2.56e-14	1.00e+00
TG	5.52e-01	0.0600	9.20e+00	7.47e-16
EA	6.34e-02	0.1086	5.84e-01	5.60e-01
IG	3.98e-01	0.0759	5.24e+00	6.31e-07

Again, we see that the correlation between the predicted hidden variable values is very high.

Table 4. Correlations between latent variables

CORRELATIONS BETWEEN LVs

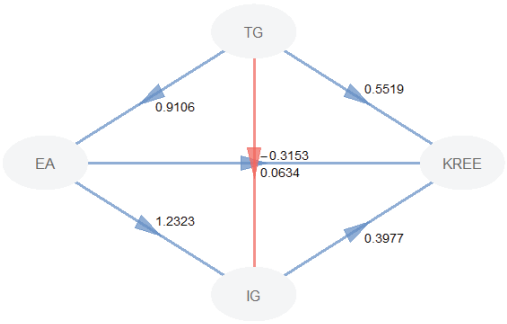
	TG	EA	IG	KREE
TG	1.000	0.911	0.807	0.930
EA	0.911	1.000	0.945	0.942
IG	0.807	0.945	1.000	0.903
KREE	0.930	0.942	0.903	1.000

The smallest correlation is 0.807 and is between Basic needs and Innovation and Development.

The compatibility of internal and external models with data sets is quite high, 0.782. The following graph shows the estimated regression coefficients between hidden variables. These coefficients are estimated positively, except for Basic Needs to Innovation and Growth.

All but one of the estimated parameter estimates reported in Figure 1 are statistically significant. The only statistically insignificant parameter estimate is the Eficiency Enhancers on Global Competitiveness, 0.0634. All other estimated parameter values are significant. For example, Basic requirements have a statistically significant (standard error, 0.036) and positive effect on Efficiency Enhancers. The numeric measure of parameter estimates shows the amount of effect on the other of a hidden variable. The predictive sign also indicates that the effect is positive or negative. An interesting parameter estimate is statistically significant, both negative and significant, on the basis of

Figure 1. Latent variables and their regression coefficients.

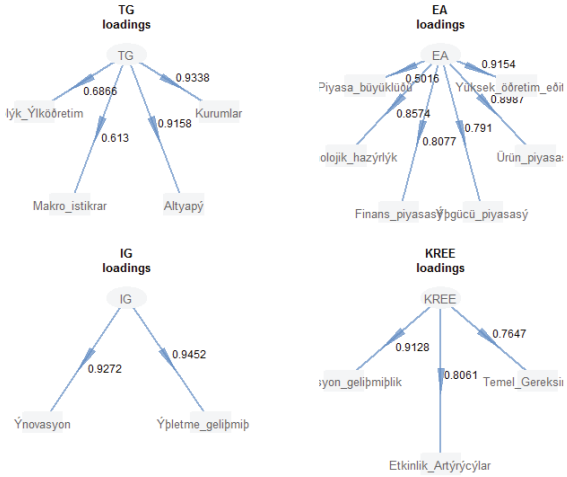


Innovation and Development. This is not predicted positively as expected in the World Economic Forum documents.

In general, the average communality and average redundancy coefficients are above and above 0.5, although the impact of Event Boosters on Global Competitiveness is statistically insignificant.

The loading coefficients between hidden variables and their representative variables are shown in the following graph.

Figure 2. Latent variables and their loadings.



Bootstrap model results

The same estimation procedure was repeated with 200 extra samples taken by bootstrapped processing of the data set on hand. The second table reports the average of these 200 estimates. In this way, non-parametric Partial Small Squares - Path Modeling results can be used to make generalizations to the population. By estimating the standard errors of the obtained parameters, it is possible to use test procedures and to calculate the reliability intervals.

The cross-loading coefficients are shown in the graph below. The manifest variables in the blocks are loyal to their blocks as expected. The highest frequencies are observed amongst their respective manifests of each block.

The correlations between the predicted secret variable values and the secret variable values measured in the World Economic Forum documents are shown below.

> cor(call1$Basic Requirements, call1$rescaledbre)

[1] 0.7827127

> cor(call1$Efficiency Enhancers , call1$rescaledeff)

[1] 0.6388665

> cor(call1$Inn. and soph. factors, call1$rescaledinn)

[1] 0.8291702

> cor(call1$KREE, call1$rescaledcgi)

[1] 0.9011788

Correlations

The lowest correlation is observed among the values estimated by the World Economic Forum, Partial Small Squares by Boot Method - Estimated by Path Model, 0.639.

Tests

Whether the calculated and projected values of the Basic Requirements have the same average:

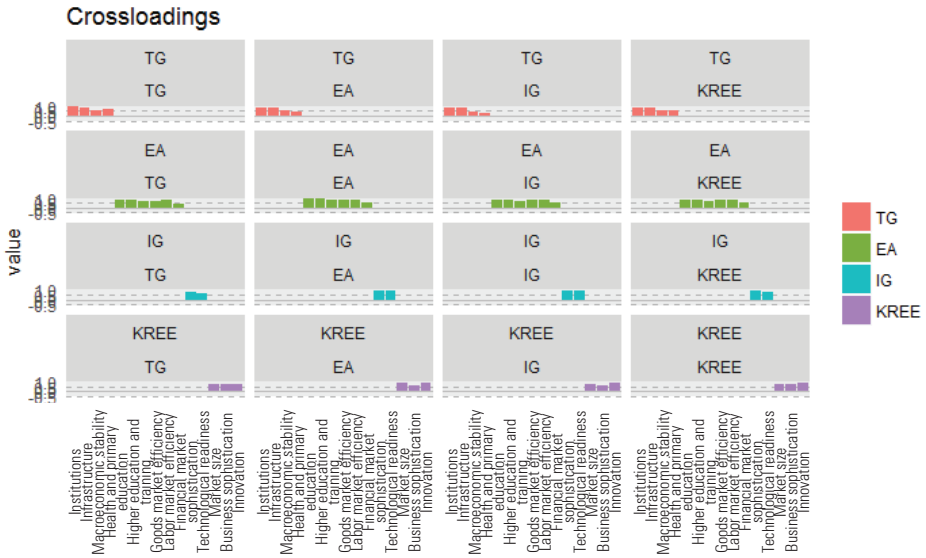
Welch Two Sample t-test and Wilcoxon rank sum test results indicate that they do not have the same average of the index calculated for the World Economic Forum and the series predicted in the Partial Small Squares - Path Model.

Whether the calculated and projected values of Basic Requirements come from the same distribution:

The Kruskal-Wallis rank sum test and the Anderson-Darling k-sample test results show that it does not come from the same range of the index as calculated for the World Economic Forum and the series predicted in Partial Small Squares - Path Model.

These tests were also performed for other hidden variable indices and their predicted values. Indices calculated in the World Economic Forum and the Partial Small Squares - The series predicted by the Path Model do not come from the same distributions. Tests on the average of the series give

Figure 3. Latent variables and their cross-loading.



mixed results and indicate that they are both the same and not the same.

The predicted values obtained by using the Competitivenes Indices obtained by using the World Economic Forum questionnaires and using the Partial Small Squares - Path Model are in order of magnitude. Then the calculated and predicted index values of the countries were subjected to rank tests. Applied tests are Spearman's rho rank correlation test and Cronbach's alpha rank test, respectively. The correlation between the test results gore, the rankings of the calculated and predicted values of the four indices is not different from zero.

Non parametric clusters

The following graphs are obtained by putting the same clusters as those of the values of the foreseen hidden variables. The countries are gathered in three groups. Graphics combine Basic Requirements with GCI;Efficiency Enhancers and GCI together, and finally Innovation and Development and GCI together. A country can be seen in more than one cluster. This shows that the same country has different performances in different years. All of the variables have been standardized.

Response-Based Unit Segmentation (REBUS)

In Appendix, Table 3, shows the model results that control unobserved heterogeneity. The nations are gathered in four-way clutches.

Figure 4. Global Competitiveness Index and sub-groups, Basic Requirements.

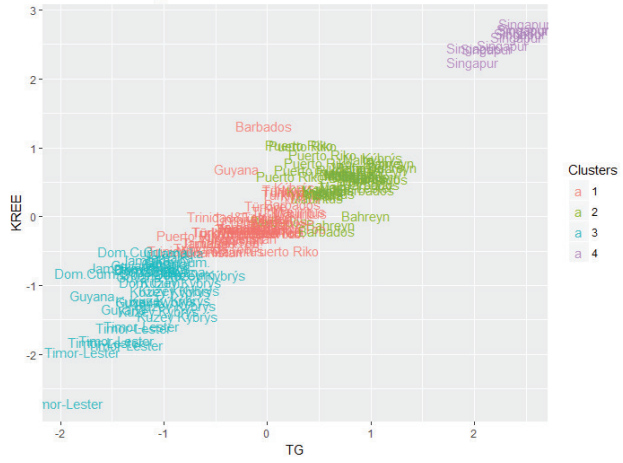


Figure 5. Index of Global Competitiveness and sub- groups, Activity Enhancers.

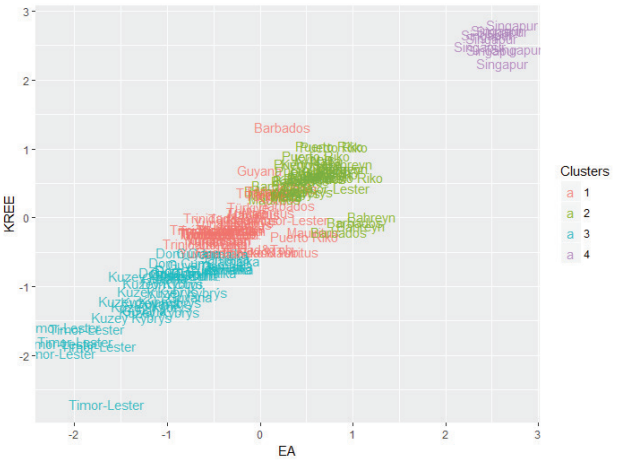
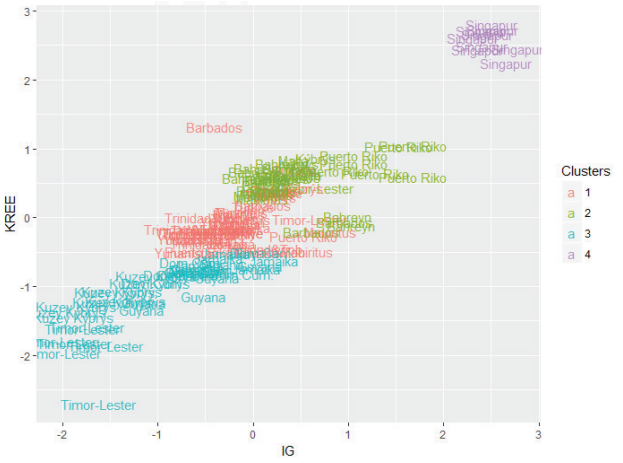


Figure 6. Global Competitiveness Index and sub-groups, Innovation and Sophistification Factors.

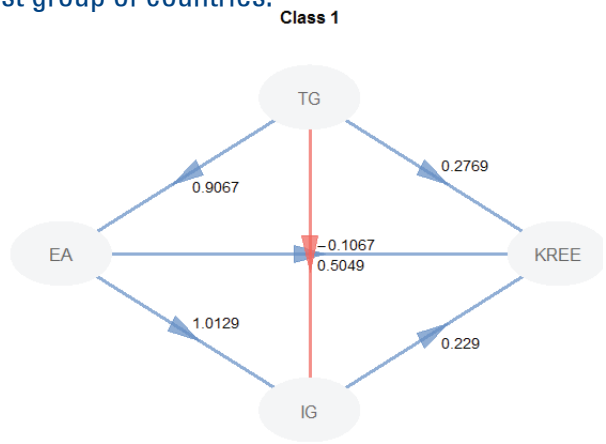


First group of countries and path coefficients

```
> ct1ds$Ülke[ct1ds$segments==1]
```

```
 [1] "Barbados"     "Bahreyn"      "Jamaika"      "Mauiritus"    "Puerto Riko"
 [6] "Timor-Lester" "Bahreyn"      "Jamaika"      "Mauiritus"    "Barbados"
[11] "Jamaika"      "Mauiritus"    "Timor-Lester" "Trinidad&Tob." "Barbados"
[16] "Mauiritus"    "Trinidad&Tob." "Barbados"    "Bahreyn"      "Mauiritus"
[21] "Trinidad&Tob." "Barbados"    "Bahreyn"      "Mauiritus"    "Trinidad&Tob."
[26] "Barbados"     "Bahreyn"      "Jamaika"      "Mauiritus"    "Trinidad&Tob."
[31] "South Cyprus" "Malta"        "South Cyprus" "Malta"        "South Cyprus"
[36] "Malta"        "South Cyprus" "Malta"        "South Cyprus" "Malta"
[41] "South Cyprus" "Malta"        "South Cyprus" "Malta"        "South Cyprus"
[46] "Malta"        "South Cyprus" "Malta"
```

Figure 7. The inner path model with hidden variables and estimated parameter values, the first group of countries.

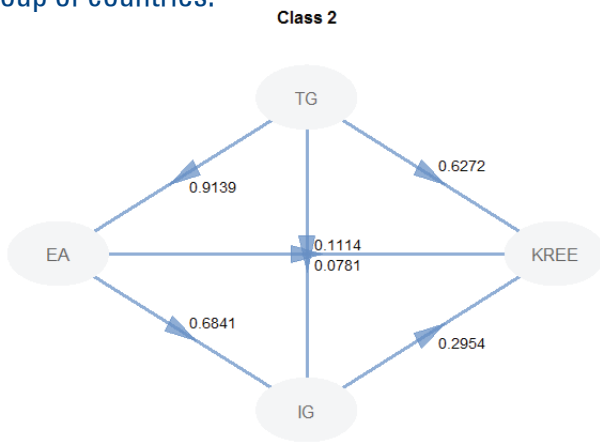


Countries in the second group and path coefficients

```
> ct1ds$Ülke[ct1ds$segments==2]
```

```
 [1] "Guyana"       "Rep.Dom."     "Trinidad&Tob." "Barbados"     "Guyana"
 [6] "Rep.Dom."     "Trinidad&Tob." "Timor-Lester" "Guyana"       "Rep.Dom."
[11] "Guyana"       "Rep.Dom."     "Jamaika"      "Guyana"       "Rep.Dom."
[16] "Jamaika"      "Timor-Lester" "Guyana"       "Rep.Dom."     "Jamaika"
[21] "Guyana"       "Rep.Dom."     "North Cyprus" "Turkey"       "Greece"
[26] "North Cyprus" "Turkey"       "Greece"       "North Cyprus" "Turkey"
[31] "Greece"       "North Cyprus" "Turkey"       "Greece"       "North Cyprus"
[36] "Turkey"       "Greece"       "North Cyprus" "Turkey"       "Greece"
[41] "Turkey"       "Greece"       "Turkey"       "Greece"       "Turkey"
[46] "Greece"
```

Figure 8. The inner path model, hidden variables and estimated parameter values, the second group of countries.

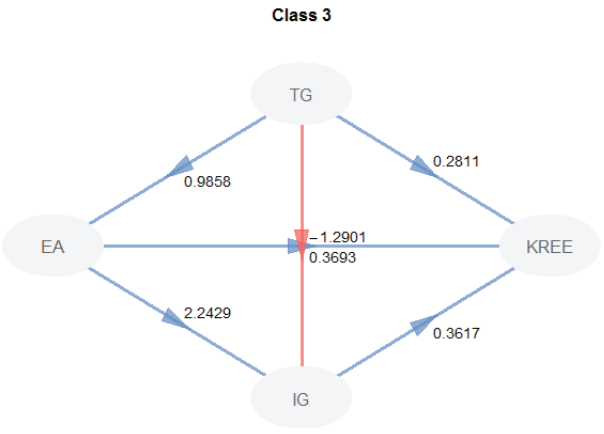


Countries in the third group and path coefficients

```
> ct1ds$Ülke[ct1ds$segments==3]
```

```
 [1] "Singapur"     "Singapur"     "Timor-Lester" "Bahreyn"      "Puerto Riko"  "Singapur"
 [7] "Bahreyn"      "Puerto Riko"  "Singapur"     "Timor-Lester" "Puerto Riko"  "Singapur"
[13] "Timor-Lester" "Puerto Riko"  "Timor-Lester" "Puerto Riko"  "Singapur"     "Timor-Lester"
[19] "North Cyprus" "North Cyprus" "North Cyprus"
```

Figure 9. The inner path model, hidden variables and estimated parameter values.

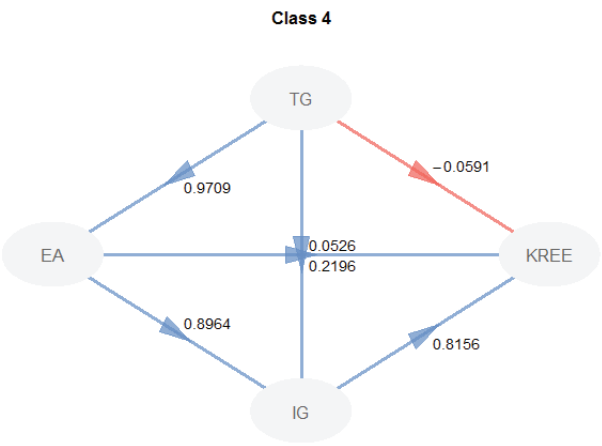


Countries in the fourth group and path coefficients

```
> ct1ds$Ülke[ct1ds$segments==4]
```

```
 [1] "Puerto Riko"  "Barbados"     "Bahreyn"      "Guyana"       "Rep.Dom."
 [6] "Jamaika"      "Mauiritus"    "Puerto Riko"  "Singapur"     "Trinidad&Tob"
[11] "Barbados"     "Bahreyn"      "Guyana"       "Rep.Dom."     "Jamaika"
[16] "Mauiritus"    "Puerto Riko"  "Singapur"     "Trinidad&Tob." "Singapur"
```

Figure 9. Internal path model showing hidden variables and estimated parameter values, fourth group countries.



CHAPTER III

Performance Matrices

Performance analyses and evaluations are of great importance in describing the current situation and forming future predictions for the national economies, as well as of the individual institutions or sectors.

Performance matrices used in performance appraisals can be considered as a report card (score card) of the relevant institution, industry or economy.

In order for performance reports to function both for analysing the current situation and developing a vision for the future, it needs to be in line with the "Strategic Management" approach.

Strategic Management, whatever size and scale it regards, basically begins with a detailed case analysis covering economic, political, social and environmental spheres and the process of setting the mission and vision accordingly. After these stages in the creation of long or medium term plans, and programs starts. The plans and programs, which are created under the guidance of the vision and by keeping the requirements of the mission in the foreground, become the basic strategy documents of that economy.

Within this strategy documents are primarily "Strategic Objectives" which are conceptual expressions for the medium and long term and which are aimed to be achieved. Specific and measurable sub-objectives for achieving strategic objectives are called "Strategic Goals". "Performance Indicators" are needed to monitor whether the targets have been achieved. The decisions that show how to achieve these goals are "Strategies" and "Actions and Projects" are carried out accordingly.

The performance matrices are functioning to the extent that they allow the tracking of these processes. That is, in order to be able to assess the performance of any economy within a given time frame, it must be monitored by means of defined indicators of a stated objective. Country performance scorecards should be prepared and assessed with this approach.

Another essential point in performance analysis is that the evaluations should free of subjective and relative expressions. For this, the analysis must be based on objective statements, indicators, concrete strategy documents and expressions.

The performance evaluation matrices included in the Northern Cyprus Competitiveness Report (CR) contain information that will contribute to the performance analysis to be performed with this approach

As in previous reports, this year, the last two years of specific realizations in some key topics in the Northern Cyprus economy will be presented in a matrix (see Table 3.1). In addition to this matrix, the realization states for the years 2008-2016 in the Northern Cyprus CR documents are presented in a separate table (see Table 3.2).

The realizations, which are mainly taken from the laws of regulations in 2016 and the statements of policy and strategies of the UBP-DP government, are listed under the topics of: General issues; physical infrastructure development; increasing market efficiency of goods and services; increasing the effectiveness of the labor markets; opportunity for credit access in financial markets, health reforms and technology development.

This year, the CR also includes the strategic goals, targets and relevant performance indicators of some of the key strategic documents of the TRNC government.

First one of these strategy documents is the "Medium Term Program" (MTP) document, prepared and presented by the State Planning Organization, covering the years 2017-2019.

Estimates and target values for years regarding the objectives and goals of the macroeconomic indicators in the MTP document are shown in Table 3.3.

The monitoring of the realizations within the scope of the MTP for each year during the program period is important for the performance evaluation of the Northern Cyprus economy.

Within this table, the first indicator that should be watched particularly carefully is "State budget balance". This figure, which is obtained by calculating the share of the budget deficit in GDP, sets the estimated realization figure for the year 2016 as 5%. At the end of the program, this figure is to be reduced to 1.6% in 2019.

Another indicator that is important to monitor is the Current Account Balance which is under the Balance of Payments targets. The ratio of current account balance to GDP is expected to be -1.7% at the end of the program period, which is expected to be 7.8% at the end of 2016.

Another strategic document that indirectly affects the performance of the Northern Cyprus economy is the "TRNC Energy Efficiency Strategy Document" which is issued by the SPO and covering the years 2016-2023.

The main objective of this document is defined as: "... defining a policy set with a focus on energy efficiency and supported by tangible targets and identify mandatory actions to achieve targets together with those responsible for fulfilling them; Public sector, private sector and non-governmental organizations to act in a participatory approach and cooperation ... ".

The goals for the year 2023 to achieve this main objective are:

- Reduction of the amount of energy consumed per GDP (primary energy intensity) by at least 20% compared to the value of 2012;
- CO2 emissions in the TRNC should be at least 10% less than in 2012,
- Achieving at least 10% of the primary energy production of the renewable energy resources in the TRNC.

The lists of the strategies which are set to achieve these goals are also listed in the document. It is important that the TRNC Energy Efficiency Strategy Paper be measured in real terms, starting from 2017, in order to contribute to the strategic management of the country's economy in real terms and to determine the point reached in reaching the 2023 target.

Table 3.1

Issues	Recommendation	Realization						
		2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
General issues	1.Developing coordination between institutions in the public sector							
	2.Institutionalization in macroeconomic management			Δ	Δ			
	3.Development of macroeconomic policies					Δ	Δ	
	4.Accelerating EU harmonization processes					Δ	Δ	
	5.Ensuring continuity in the bureaucracy and ending favortism				Δ			
	6.Reducing informality			Δ	√	Δ	Δ	
	7.Increasing the efficeincy of the public sector			Δ	√	Δ	Δ	
	8.Administrative, financial and supervisory restructuring of local administrations					Δ	Δ	
	9.Establishing the statistical infrastructure							
	10.Economic reforms							
Physical infrastructure development	1.Technical and service oriented development of ports and airports			Δ		√	Δ	
	2.Public-private partnership build-operate-transfer models						Δ	
	3.Enabling new technologies in CIT field			Δ				
increasing market efficiency of goods and services	1.Energy efficeincy						Δ	
	2.Achieving independent and institutional execution by Competition law	Δ						
	3.Structuring subsidies							
	4. Regulation of tax policies, system and rates	Δ			Δ			
	5. Marketization of State monopolies							
	6. Ease of establishing a company	Δ		Δ				
	7.Bankruptcy process and its cost							
	8.Developing policies for SMEs	Δ		√	√			
	9. Foreign trade system							
increasing the effectiveness of the labor markets	1. Increasing domestic labor force participation in the labor market	√	√		√	Δ	√	
	2. Incentives for on the job training							
	3.Cooperation with universities on vocational courses	√	√	Δ	Δ			
	4. Public working hours							
	5.Social security							
	6. Kamuya giriş ücretlerinin düzenlenmesi	√						
opportunity for credit access in financial markets	1. risk perception-reducing regulations for the banks	Δ		Δ		Δ	Δ	
	2. Structuring loans		√	Δ	Δ	Δ	Δ	
	3.Structuring the execution of the bankruptcy system and accelerating the judicial process				Δ		Δ	
	4.To limit the use of resources from the banking system	Δ	Δ					
	5. Low interest loan programs			√	√		√	
	6. Grant porgrams			√	√	√	√	
	7. Development of alternative financial instruments	√						
Health reforms	1. Budget					Δ	Δ	
	2. Improvement of services wtih coordination of other institutions					√	Δ	
	3.Developing policy and strategy						√	
Technology development	1.Technology integration			Δ		Δ	Δ	
				Δ				
	3.Developing IT aided education			Δ				

Key: √ There is action Δ There is partial action

Table 3.2

2017-2019 MACROECONOMIC TARGETS	2015	Forecast 2016	Target 2017	2018	2019
Growth and employment					
Real growth (%)	4,00	2,4	5,00	5,00	5,50
GDP (million TRY)	10.222,46	11.302,8	12.610,70	13.941,40	15.396,30
The ratio of total resources to investments (%)	15,1	15,1	18,5	19,5	20,0
Total employment	112.811,00	115.716,0	119.133	122.668	126.324,00
Public Finance					
State budget balance/GDP %	-3,7	-5,0	-5,6	-3,6	-1,6
Government budget expenditure to GDP ratio %	37,60	38,2	39,5	37,6	35,6
State budget revenue (current prices, million TRY)	3.465,00	3.753,0	4.284	4.740	5.234,40
Balance of payments					
Export (Million $)	118,10	105,4	121,3	139,5	160,40
Import (Million $)	1.500,60	1.505,1	1.730,8	1.903,9	2.094,30
Export/Import %	7,87	7	7	7,3	7,70
Net revenue from tourism (Million $)	697,70	721,50	743,9	766,7	791,00
Current accounts balance / GDP (%)	7,20	7,80	3,2	0,6	-1,70
Inflation					
Commercial Price Index (CPI %)	7.78	6,5	6	4,7	4,7

Tablo 3.3

		2016-2017
General issues	1.Developing coordination between institutions in the public sector	
	2.Institutionalization in macroeconomic management	Law regardign Court of Auditors No: 37/2016
	3.Development of macroeconomic policies	
	4.Accelerating EU harmonization processes	
	5.Ensuring continuity in the bureaucracy and ending favortism	
	6.Reducing informality	
	7.Increasing the efficeincy of the public sector	Law on Public Recruitment No: 20/2016
	8.Administrative, financial and supervisory restructuring of local administrations	
	9.Establishing the statistical infrastructure	
	10.Economic reforms	UBP-DP: Memorandum between TRNC and TR
Physical infrastructure development	1.Technical and service oriented development of ports and airports	
	2.Public-private partnership build-operate-transfer models	
	3.Enabling new technologies in CIT field	
Increasing market efficiency of goods and services	1.Energy efficeincy	
	2.Achieving independent and institutional execution by Competition law	Sustainable Energy Law no: 14/2016; Water Deal between TRNC and TR No:22/2016); TRNC Strategic Document on Energy Efficiency (2016-2023)
	3.Structuring subsidies	
	4. Regulation of tax policies, system and rates	
	5. Marketization of State monopolies	Kuzey Kıbrıs Türk Cumhuriyeti Maliye Bakanlığı ile Türkiye Cumhuriyeti Gümrük ve Ticaret Bakanlığı Arasında Ortak Gümrük Komitesi Kurulmasına İlişkin Mutabakat Zaptı (Onay) Yasa Tasarısı (YT No:217/4/2016)
	6. Ease of establishing a company	
	7.Bankruptcy process and its cost	Law on work permits No:6/2016; Darft Decree on Amnesty regarding work permits and times of foreigners (YGK No:16/4/2016);Darft Law and Decree changing the Draft Law on work permits (YGK No:15/4/2016) and (YGK No:19/4/2016)
	8.Developing policies for SMEs	
	9. Foreign trade system	Law regarding the mutual acredibility between the Universities of TRNC and TR(Yasa No: 34/2016)
Increasing the effectiveness of the labor markets	1. Increasing domestic labor force participation in the labor market	Draft law regarding the compensation policies of civil servants (YGK No:15/4/2016)
	2. Incentives for on the job training	
	3.Cooperation with universities on vocational courses	Law on credit cards and bank credits (Yasa No: 5/2016)
	4. Public working hours	
	5.Social security	
	6. Kamuya giriş ücretlerinin düzenlenmesi	Decree regarding the Central Bank of TRNC (YT No: 216/4/2016)
Opportunity for credit access in financial markets	1. risk perception-reducing regulations for the banks	
	2. Structuring loans	
	3.Structuring the execution of the bankruptcy system and accelerating the judicial process	
	4.To limit the use of resources from the banking system	
	5. Low interest loan programs	
	6. Grant porgrams	
	7. Development of alternative financial instruments	
Health reforms	1. Budget	
	2. Improvement of services wtih coordination of other institutions	
	3.Developing policy and strategy	
Technology development	1.Technology integration	
	2.Developing supervision and audit on IT	
	3.Developing IT aided education	

CHAPTER IV

Standardization and Access to Foreign Markets

Standards, Standardization and Organization

The word "standard" refers to the level of quality or qualification required or generally accepted, according to the definition of a common dictionary. Quality is defined as a measure of what something is like, a measure that distinguishes it from its analogy, and can be measured. The "standard" phenomenon provides a framework to be able to measure products, services and governance systems in terms of quality and to compare with similar ones in almost every area of economic, social and political life. In this measurement and evaluation process, "standards" come as a technical, institutional characteristic that is used as a measure, norm or model.

Standardization means, by its simplest definition, the process of operating in accordance with established standards. Standardization helps to operate in accordance with generally accepted or mandated measures, norms or models in the governance practices of private sector companies and public institutions, both in the production and supply of goods and services and in the process of supply to the market.

The most well-known and one of the most common standardization bodies around the world is the International Organization for Standardization (ISO), which began its official activities in 1947. ISO has published more than 21,000 "international standards". According to the definition of ISO, "standard"means; materials, products, processes and services for which they are intended. Terms, conditions, guidelines, or features that may be used in a consistent manner are identified and defined (www.iso.org). From this standpoint, the "standard" can be thought of as a system of rules. "Standardization", on the other hand, is the process of setting and enforcing certain rules, with the contribution and cooperation of interested parties, in any activity aimed at achieving economic or social benefit. In the process of standardization, the rules established and documented and approved by the relevant and competent bodies usually consist of technical and institutional features left to the discretion of the parties (i.e. not mandatory). Subsequently, these rules can be adopted by national and regional standards bodies and mandated by the States through law and technical specifications. A wide variety of standardization organizations have been established at a national and international level to standardize the quality

of products, services and governance systems.

National standardization organizations create and maintain standards at the national level to provide citizens with quality and safe products and services in all areas of their lives, generally focusing on consumer rights and prosperity. At the same time, national standardization bodies may also work on the identification and prevention of unfair competition conditions that may arise among producers. The scope of regulation and supervision of national standardization organizations constitute a wide and diverse spectrum from: food safety to health and education services, from agricultural production to construction, from hygiene regulations to environmentally friendly applications, from manufacturing to information and communication technologies, from large-scale infrastructure investments to small and medium-sized businesses (SMEs) activities, transportation to accounting and finance applications, electronic, artisan and artisan activities to the banking system, from private sector businesses to public administration.

There are "national standardization bodies" in many developed and developing countries in the world. These national organizations often operate as ISO members. There are more than 160 countries with national standards bodies which have ISO membership. ISO recognizes 118 of these national bodies as "members", 40 as "correspondent members" and 3 as "subscriber members". Here are a few examples of the establishment of many national standards:

- Turkish Standards Institute (TSE)
- Helen Standardization Organization (ELOT)
- Cyprus (Southern) Standardization Organization (CYS)
- Brasilian National Standards Organization (ABNT)
- Spanish Standardisation and Certification Association (AENOR)
- French Standardisation Association (AFNOR)
- American National Standardisation Institute (ANSI)
- British Standards Institute (BSI)
- German Standardisation Institute(DIN)
- Japanese Industry Standards Committee (JISC)
- South African Bureau of Standards (SABS)
- Romanian Standards Association (ASRO)
- Standardisation Administration of China (SAC)
- Standards Council of Canada (SCC)
- Standards Institute of Sweden (SIS)
- Standards Association of Finland(SFS)
- Norwegian Standards (SN)
- Swiss Association of Standards (SNV)

As can be seen from the first three examples in this list, Turkey, Greece and Southern Cyprus have a "national standards body". The national standards bodies of these three countries are also ISO members. Although there have been speeches for years to be spoken and established, there is not yet such a "national standards organization" in Northern Cyprus. On the other hand, all but two of the 11 island countries (Timor-Leste and Puerto Rico) which were taken as examples in this report for comparing Northern Cyprus in terms of competitiveness, have "national standards bodies"which are either "member" or "correspondent" of ISO:

- Dominic Republic (INDOCAL): Correspondent member
- Guyana (GNBS): Correspondent member
- Jamaika (BSJ): Member
- Barbados (BNSI): Member
- Mauritius (MSB): Member
- Trinidad ve Tobago (TTBS): Member
- Bahrein (BSMD): Member
- Malta (MCCAA): Member
- Singapore (SPRING SG): Member

International standardization organizations aim to cooperate with national level organizations and create standardization networks and accreditation systems to implement and spread consumer, citizen and environmental-oriented standardization activities on an international scale. Developing standards in the areas of product, service and governance, together with quality and safety, to increase economic efficiency and at the same time facilitate international trade and financial relations are among the main functions of international standardization organizations. ISO, for example, pioneers the world in developing international standards in the areas of product, service and governance, in order to achieve "safer", "cleaner" and "more efficient" living spaces. According to the ISO, standardization is also important in terms of economic growth in general, the expansion of global markets and the maintenance of international trade in more fair conditions. Standardization also has the benefit of fighting on a global level with the challenges of many areas, such as climate change, road safety, energy and social responsibility. Standardization, is a process with vital importance in the development of safer, healthier and more environmentally friendly practices, and in creating a more productive, more

creative and innovation-oriented economic and social order on a world scale.

In addition to the ISO mentioned above, some examples are provided below for standardization organizations operating in different fields and having international membership. This list also shows that international standardization organizations are specialized in a wide range of fields:

- International Organization for Standardization, ISO.
- International Electrotechnical Commission, IEC
- Air Movement and Control Association International, AMCA
- Human Factors and Ergonomics Society, HFES
- Institute of Electrical and Electronics Engineers, IEEE
- Air-conditioning, Heating, and Refrigeration Institute, AHRI
- Association for Automation and Measuring Systems, ASAM
- European Computer Manufacturers Association International, ECMA International
- International Federation of Organic Agriculture Movements, IFOAM
- International Press Telecommunications Council, IPTC
- The International Telecommunication Union, ITU
- Organization of Hotel Industry Classification & Certification, OHICC
- Social Accountability International, SAI
- World Meteorological Organization, WMO
- Food and Agriculture Organisation Standards Body (FAO Standards Body)

In addition to such international standardization bodies operating in a wide range of fields, there are also regional standardization organizations. Some examples of regional standardization organizations are shown below:

- European Committee for Standardization, CEN
- European Committee for Electrotechnical Standardization, CENELEC
- European Telecommunications Standards Institute, ETSI
- EU Institute for Reference Materials and Measurements, IRMM
- Euro-Asian Council for Standardization, Metrology and Certification, EASC
- ASEAN Consultative Committee for Standards and Quality, ACCSQ
- Pacific Area Standards Congress, PASC
- CARICOM Regional Organization for Standards and Quality, CROSQ
- MERCOSUR Standardization Association, AMN
- Pan American Standards Commission, COPANT
- African Regional Organization for Standarization, ARSO
- Southern African Development Community Cooperation in Standarization, SADCSTAN
- Arab Industrial Development and Mining Organization, AIDMO

Economic and Social Benefits of Standardization in Products and Services

According to ISO, "international standards" constitute the backbone of society; by providing guarantees for the safety and quality of our products and services, facilitates international trade, and improves the environment we live in. Moreover, by compliance with standards, the products, systems and organizations are safe, reliable and good for the environment. There are numerous studies stating that the standards have stimulating effects for the business world and the economy. For example, it is known that the standardization contributes $ 8.2 billion annually to the increase in national income in the UK. In Canada, the total contribution of standards since 1981 is around $ 91 billion.[1]

International standards have numerous economic and social benefits for both private companies, consumers and governments. For private companies; for example, it has been found that the ISO 9001 standard increases sales, customer satisfaction and market share, and at the same time improves the company image (Manders, 2015). ISO 14001 has been shown to be beneficial in protecting the environment in the activities of companies (de Vries et al., 2012). In a study of the French Standardization Association (AFNOR), an additional increase of 20% was observed in the annual sales of companies participating in the "standard development" process (AFNOR, 2016). For the consumers; For example, standards related to road safety, toy safety and safe medical packaging make many living areas safer. In terms of governments; For example, international standards that require expertise and experience play a leading role in the design and implementation of various public policies.[2]

The benefits of international standards to private companies, consumers and governments are summarized in Table 4.1. These benefits are observed in many different and diverse areas of social life; international standards, in the sense of ISO, also point out that it is the "backbone of society".

There are many studies investigating the economic and social benefits of standards and standardization. Among the major researches on this subject is a two-volume study

Table-4.1. Benefits of International Standards

Benefits for private companies	They ensure that the supply to the market and the production to be economically efficient
	Increase productivity
	Facilitate access to new markets through the harmonization of products and services
	Reduce costs through sophisticated governance systems and production processes
	They enhance customer satisfaction through advanced safety and quality systems
Benefits for consumers	Reduces damage to the environment
	Ensures that products and services are safe, reliable and of good quality
	Increases air, water and soil quality
	Provide control of gas and radiation emissions
	Allow control of environmental effects of production
	Contribute to environmental protection and human health by improving living conditions
Benefits for governments	Provide direct access to the views of international experts in building national public policy
	Ensure compliance of national legislation on import and export with international rules and regulations
	Facilitate inter-country product, service and technology movements
	Facilitate world trade and access to foreign markets
	Abolish barriers to global trade by providing the necessary technical framework for the implementation of regional and international trade agreements

Source: http://www.iso.org/iso/home/standards/benefitsofstandards.htm

from ISO (Gerundino, D. & Weissinger, 2011, 2012). In both volumes, the benefits of standards, especially for companies, are examined from a microeconomic point of view for different countries. The countries studied at company level in the first volume are Indonesia, Singapore, Thailand, Vietnam, Botswana, South Africa, Brazil, Colombia, Peru and Germany. In the second volume, China, Sri Lanka, Mauritius, Cameroon, Senegal, Egypt, Jordan, Lebanon and Italy are studied. In these two volumes of extensive work, it examines in detail how the standards are used for the purposes of the companies and the benefits that the com-

1 **http://www.iso.org/iso/home/standards/benefitsofstandards.htm**

2 **http://www.iso.org/iso/home/standards/benefitsofstandards.htm**

panies can achieve by applying the standards.

In another study by Blind (2004), assesses, various aspects such as the driving forces and economic effects of standardization in the manufacturing and service sectors, the aspects of the development of standardization of intellectual property rights, the contribution of standardization to economic growth and the development of standards by foreign trade. Blind emphasized that companies in particular play an important role in the standardization process. Accordingly, companies' consciousness, desire and efforts towards standardization contribute to the effective functioning of the standardization process.

In a project study conducted by the German Standardization Institute in Germany, Austria and Switzerland (DIN, 2000), it has been stated that 84% of the companies have adopted either European standards or international standards as a component of export strategies. In other words, in terms of export strategy, the vast majority of companies in the scope of the study are conscious, willing and diligent in standardizing. Other noteworthy findings of this study include: 1) The standards contribute more to economic growth than patents and licenses; 2) Export-oriented sectors see and use standards as a "strategy to open up new markets"; 3) Standards, facilitate technological development.

A report for the UK Department of Trade and Industry (DTI) the cost-reducing and quality-enhancing aspects of standards are emphasized and the standards are reported to be a key point in micro-economic infrastructures (Swann, 2000). According to this report, even though standardization cannot raise the profitability of all companies simultaneously, it provides significant benefits for the economy in general because of its competitive developing nature. The report also emphasizes that the standards have "public property-like" features. In line with this emphasis, it is stated that the standard formation processes should not be over-represented in the context of the involvement of different interest groups. It is noted that the state must play an active role in providing a certain balance between different interest groups.

In another study that draws attention to the "public property" nature of standards, standardization is considered as a marketing policy instrument (Williams & Temple, 2002). In that study, it is observed that standards are beneficial to the economy in general, and it is determined that different stakeholders such as industry, government, citizens and consumers have benefited from the standardization process.

The contribution of standards to sustainable development (from the aspects of sustainability and access to markets) has been examined in a study involving the food, forestry and tourism sectors (Vorley et al., 2002). In this study, codes and certifications related to standards were found to be useful for companies to find complementary between trade and sustainable development. At the same time, participating in the "standard development" processes enables us to see different perspectives and facilitates the corporate learning process. In particular, it is emphasized that the development of non-discriminatory standards is recommended against the problems of standardization encountered by the exporters of developing countries and that the participation of all stakeholders in the standardization process should be ensured.

The World Trade Organization (WTO) has focused on standardization in one of the World Trade Reports (WTO, 2005). This WTO report emphasizes that the standards are particularly useful in terms of consumers' knowledge of products, the protection of the environment and harmonization of goods and services. This 2005 report highlights the growing importance of international standards. It can be said that the acceleration of standardization has been observed, especially after that date. This report specifically states that the most important among the many international standardization bodies are the International Electro-technical Commission (IEC) and the International Telecommunication Union (ITU) together with the ISO. This broad study states that standards are effective in; scale economies; increasing economic efficiency; in the solution of problems found in the situation of incomplete information and negative externality. It also underlines the challenges that emerging countries face in adapting to established standards, often in developed countries, and states that emerging countries have a critical stake in the process of international standardization. The report draws attention to the fact that the standards can be used as a protective and discriminatory policy tool by the states in foreign trade and emphasizes that WTO agreements contribute to the prevention of such policies by providing clear and non-discriminatory foreign trade regimes.

Standardization and Foreign Trade

An important issue as important as the economic and social benefits of standardization in products and services is the impact of standards on foreign trade. How do adoptations of national and international standards affect the foreign trade, ie the exports and imports, of the countries? Does the standardization facilitate access to foreign markets? The answers to such questions have been investigated in the academic literature using various survey methods and econometric regression models.

First, it should be noted that the standards may function as a "quality signal" (Jones & Hudson, 1996; Hudson & Jones, 2001, 2003). In other words, the standards can be understood by the buyers (importers) as the symbols guaranteeing the quality of the products and services. In this case, the standards have an effect of increasing the competitiveness and sales (exports) of the sellers (exporters).

Similarly, standards can provide a "safe" product or service signal as well as quality (Hudson & Jones, 2003). This "confidence signal" also raises the competitiveness and sales of sellers (exporters). If there are "standard" and "non-standard" similar products or services in any domestic or foreign market, the market share of non-standard products or services over time may be reduced and even increasingly withdrawn from the market. In such cases, the standardization would be to reduce the variety of products and services on the market. Thus, standardization can also lead to the creation of "scale economies" in which average costs are reduced while fewer types are offered on the market and the remaining companies increase production scales. Furthermore, both the "confidence signal" and the reduction of diversity can reduce "transaction costs" (Butter & Mosch, 2003; Raballanda & Aldaz-Carroll, 2005). In sum, it can be said that the standardization: 1) increases sales (exports) through quality and confidence signals; and 2) reduces production and transaction costs through "scale economies" and "confidence signals". Both of these effects should be considered affirmative in terms of sales (exports) and competitiveness.

However, standardization, in some cases, also has adverse effects on external trade (Bongers, 1982). In some sectors where product or service diversification has decreased due to the standardization, the potential for "scale economies" to emerge may not be realized if the companies that implement the standard are not able to make capital investments to increase the production scale. In this case, reductions in total sales (exports) of the industry or the market can also be observed. In other words, in certain cases, standardization may also have a detrimental effect on sales (exports). Similarly, standards may be very strict and costly in some sectors (Maskus et al., 2005). Especially small and medium sized enterprises may have to withdraw from the market because they will have difficulties in meeting these strict and costly standards. Higher cost of standards can also be seen in total sales (exports) again, as it may also block possible new entries into the market.

In short, standardization can often be expected to have a positive impact on company sales and country exports, but it is worthwhile not to ignore that certain conditions may be negative for this effect. One of the leading researchers on this subject, G. M. Peter Swann, has prepared a literature review for the OECD (Swann, 2010). Swann, who brought together several academic studies in international trade and standards by examining them in various ways for different countries, different sectors and different periods in various literature, reached some basic conclusions. The main results of Swann are summarized below (Swann, 2010: 4-5).

The impact of international and national standards on exports

- Most of the studies in the literature show that adapting to international standards generally increases export performance. In some cases it has also been determined that international standards do not have a significant impact on export performance.
- It has also been observed that export performance is increased in the case of exporter countries complying with their own standards, that is, national standards.

It can be said that both international standards and national standards generally raise the export performance of countries. The prospect of national and international standards can be better understood if it is considered to be related to the expansion of access opportunities to foreign markets and the increase of competitiveness in foreign trade.

The impact of international and national standards on imports:

- The fact that countries comply with international standards when importing, except for certain exceptions, mostly has a boosting effect on imports.
- If the countries comply with the national standards when importing, more mixed effects will be realized. Non-mandatory ("voluntary") national standards increase imports in some cases and in some cases reduce them. However, compulsory national standards generally reduce imports.

As imports are generally increasing, as is the case with international standards, the following can be achieved: Adhering to international standards generally has an increasing effect on the foreign trade volume of countries. In other words, it can be stated that adapting to international standards generally increases the level of openness in foreign trade, thereby increasing global economic integration and expanding access to foreign markets. On the other hand, while exports of national standards generally increase; compulsory national standards and some "voluntary" national standards may decrease. This negative effect is particularly true in the import of agricultural products and textiles and apparel.

Despite all these general conclusions, it is understood from the literature that the original political-economic conditions of the countries have to be taken into account when considering the effects of standards on external trade (Swann, 2010: 4-5). Following these general conclusions from the literature; It may be useful to refer to some interesting and more specific conclusions that may be indicative. Such results are summarized below.

- According to a study that examines the foreign trade between Germany and the UK at all sectors, international standards increase is seen in both exports and imports in Germany. National standards, on the other hand, reduce both exports and imports (Blind & Jungmittag, 2001). In other words, in terms of foreign trade by Germany, it is observed that while international standards increase foreign trade, national standards have a negative effect.
- According to another study examining foreign trade between Germany and France at all sectors, German standards do not have a significant effect on exports to France, but international standards increase Germany's imports from France (Blind & Jungmittag, 2002).

As can be seen from these two studies, international and national standards can have different effects on one country's foreign trade from different countries. Therefore, in addition to the specific political-economic conditions of the country under consideration, the relative status of foreign trade partners should also be considered.

- Despite having different countries and sectors, two other studies which reach the same conclusion can also be considered. The first one of these deals with the foreign trade in "measuring instruments" sector in Switzerland, Germany, France and England (Blind, 2001). The second examines 159 countries and then 14 OECD countries in terms of foreign trade of "electrical goods" (Moenius, 2006). Both studies have reached the conclusion that standardization increases foreign trade.

These two studies show that for different country groups and different sectors, it is possible to achieve a common result as the standards increase foreign trade.

- The institutional capacities of countries' standardization and their relation to foreign trade are also examined in the literature. Adopting and implementing standards in products and services can be considered as an institutional development indicator in terms of companies and states. In a study conducted in this way, the prevalence of the ISO 9000 standard document in countries was considered as an essential dimension of the institutional capacity (Kim & Reinert, 2009). This research finds that in the developing countries, the institutional capacity measured in accordance with the standard is a strong and meaningful influence of these countries on exports. Moreover, developing countries with strong institutional capacities have also been found to be able to cope more easily with stringent standards in the food sector.
- Another study focusing on institutional development, reveals that countries with better institutions generally export more "complex" products (with higher technology content and added value). Imports from these countries with good institutions are mostly made up of "simple" products (Berkowitz et al., 2006). Complex-simple product comparison is related to the

compliance dimension of institutional development standards. It is more difficult and burdensome to get a standard product of a complex product and prepare it in accordance with the export contract.

- In another study, it was found that institutional quality increased foreign trade by lowering "transaction costs" (Islam & Reshef, 2006). In this study, it was also noted that the legal system differences between countries could have a mitigating effect of foreign trade. Legal system differences mean that legal standards are not the same between countries. However, it has been shown that the enhancing effect of the institutional development of foreign trade is stronger than the foreign trade mitigation effect on the legal standard differences.

These three studies are noteworthy since they demonstrate how quality institutions play an important role in standardization and foreign trade interaction. It is understood that good institutions accelerate economic growth as often emphasized in other literature, as well as strengthening the effects of the standardization process on foreign trade development.

Finally, we will complete this section emphasizing that standards are a developmental aspect of innovation capacity. Innovation means advancements in products or production processes. Such innovations are one of the most important conditions for companies to compete in foreign markets. Countries that can export high technology goods and value added products and services in export markets generally have an advanced "national innovation system". Access to such export markets is restricted from the very beginning by countries whose innovation systems are not sufficiently developed. In order to gain access to these export-rich markets, especially the developing countries need to advance in the innovation field. It is widely known that advancing in the field of innovation usually occurs as a result of R&D investments. In addition, some studies have shown that standardization in products and services also supports advancing in the field of innovation (Swann, 1990, Swann, 1999, Langlois & Robertson, 1992, King et al., 2006). Therefore, it can be said that countries can design their standardization policies with the aim of expanding access to high export markets.

Standardization in Northern Cyprus: Current Situation, Problems and Suggestions

When it comes to standardization in Northern Cyprus, the first problem that comes to mind is that the country does not have a "national standards institute". Although it has been stated in political speeches as a plan, several times in the previous years no such institute has been founded and operated yet. However, as mentioned above, national standardization bodies have important links with international standards bodies such as ISO. National standardization organizations contribute to the development of countries' standardization and thus facilitate their competitiveness in foreign trade and provide access to foreign markets through membership. It can be said that a country that does not have a national standardization organization will face more obvious disadvantages from the outset in terms of access to competitiveness and foreign markets. Moreover, Northern Cyprus has an additional problem of political unrecognition and economic isolation. Again, as mentioned above, in Chapter 2 of the report, not only Turkey, Greece and Southern Cyprus, but also some of the small island countries competing in competitiveness with Northern Cyprus, have international standardization bodies which are members of ISO.

It is known that the standardization of products and services, especially in accessing foreign markets function as a "passport" in competitiveness. If you do not have the "standard documents" on which many countries and services impose "passport" treatment, you will not be able to access export markets, although you are performing well in these markets. In order for standards documents that confirm the quality and reliability of your products and services to be widespread at the country level, there is a need for a national standards body to serve different sectors and to coordinate the standardization process throughout the country. It can be said that one of the basic priorities of Northern Cyprus is the establishment and operation of such a standards institute.

In the present case, it can be said that the standardization processes are carried out in a rather scattered and uncoordinated manner in Northern Cyprus. There is a "Standard, Registration, Price Determination and Supervision Branch" of the Industry Department affiliated to the Ministry of Eco-

nomy and Energy[3]. Some issues related to standardization are handled by this branch of the Industry Department. On the other hand, there is a representative of the Turkish Standards Institute (TSE) in Northern Cyprus. The TSE Representation is able to issue internationally accredited certificates to the public institutions and private companies in Northern Cyprus (Quality Management System Certificate, Product Certificate, Qualification Certificate in Service, CE Certificate and Calibration Services Certificate)[4]. The determination of whether or not, many products in North Cyprus in terms of standardization of health and the environment (medicines, nutrients, animal feeds, water, cosmetics, etc.) are in compliance with standards and controls in terms of health and quality, are carried out by branches[5]. The Turkish Cypriot Chamber of Industry has a Documentation Unit that carries out the inspection and certification of "Geographical Mark Registered" products (hellim, zivaniya and molasses)[6]. Of course, it is natural that various studies aiming at standardization in different standardization areas are carried out in different institutions and organizations. However, there is also a need for a standardization institute to coordinate these different areas of standardization and serve as a roofing organization. In the event that such a body is in operation; It is expected that the problems related to the standards will be easier to overcome in North Cyprus, the standardization process will be more healthy and the standardization will spread more rapidly. It should also be noted that it will make significant contributions to increasing the competitiveness of Northern Cyprus in the medium to long term and facilitating access to foreign markets.

Northern Cyprus's deficiency in terms of standardization in products and services is not only the lack of a "national standards institute". There are also significant shortcomings in the country's standardization process in many areas and in many sectors. Even when some reports prepared for different purposes, i.e. those that do not directly examine standardization, the main deficiencies with regard to standardization are immediately noted. One of these reports is the North Cyprus Industrial Strategy Report-2017-2021 (KKSSR). With the help of the Ministry of Economy and Energy, the State Planning Organization and the Turkish Cypriot Chamber of Industry and with the support of the Embassy of the Republic of Turkey, it is possible to identify and summarize the most fundamental problems of standardization in Northern Cyprus.

Within that report, there two items which regards standardization: i) the quality and standards of the products will increase and ii) the environmental and occupational safety practices will develop and international standards will be achieved (KKSSR: 5-6). On the other hand, in the summary of the "SWOT"[7] analysis presented in the report (KKSSR: 6-7), there is no topic about standardization in terms of the strengths and opportunities of the Northern Cyprus. This implies that Northern Cyprus is underdeveloped in terms of standardization. However, among the weaknesses of Northern Cyprus there are very important topics directly related to the problems of standardization:

- Lack of co-ordination between institutions, especially government institutions
- Quality standards have not been set in many fields
- Insufficient level of institutionalization of businesses
- Low quality perception / lack of confidence in local products

3 Among the duties related to standardization of this branch are: i) to prepare standards for internal and external marketing for industrial products and to ensure that the manufacturers of industrial products comply with these standards, to continuously carry out quality control, ii) to make the units of measurement and weighing used in the industry conform to international standards, Supervise the implementation. "

4 For example, the TSE Representative gave product documents to some companies operating in the dairy, chicken and meat sectors in North Cyprus, and gave management system documents to some other companies. Among the public institutions and organizations that receive the management system certificate from the TSE Representative are the Presidency, Ministry of Economy and Energy, Ministry of Tourism and Environment. Some universities and occupational chambers have also received documents related to standardization from the TSE Representative. (This information has been obtained through telephone interview from Mr. Ahmet Kemal Kızıltan, Representative of TRNC TRNC).

5 The responsibilities of the State Laboratory are summarized as follows: "In accordance with the legislation in force in the TRNC, quality control analyzes of all kinds of raw and manufactured materials, forensic chemistry analysis, pesticide residue analysis, quality control analyzes of nutrients and waters, Quality and radiation certificates required for importation and exportation in accordance with the applicable legislation by carrying out all kinds of qualitative and quantitative chemical analyzes except for the analysis of the substances causing environmental pollution and medical analysis.

6 It is stated that this unit is in compliance with the "ISO / IEC 17065 Conformity Assessment - Requirements Standard for the Organizations that Provide Product, Process and Service Documentation" and is the "first institution to certify the product in the TRNC". The tasks of the unit are summarized as follows: "[T] is responsible for the preservation of the geographical signs and traditional product names, as well as for checking and certifying that the products supplied to the market are manufactured in accordance with the registered specifications".

7 The "SWOT" analysis summarizes the "opportunities" and "threats" that the country faces with its "strong" and "weak" aspects.

The lack of coordination between the institutions, as referred to in the first item, may be due to the fact that institutional standards have not been adopted. As identified in Chapter 2 of this Competitiveness Report, Northern Cyprus has had an unsuccessful performance in terms of corporate development over the last nine years. One of the most frequent problems in various circles in Northern Cyprus is the lack of institutional public reforms. Institutional public reforms, in essence, mean a transformation that will achieve international standards in public administration, but it is known that concrete and regular steps have not been taken in this direction. The second item directly states that there are too many deficiencies in the determination of quality standards. In the third item, it is emphasized that private companies are insufficient in terms of institutional standards. The low quality of the local products mentioned in the fourth item and the low confidence in these products is also a direct standardization problem. The introduction of a "national standards institute" will provide significant contributions to the phasing out of these problems. It will also be useful to make conscious efforts to standardize all stakeholders (companies, consumers and the state) and organize continuing education programs. Standardization is not a "burden", on the contrary, it must be passed on to all segments of the society where it plays an important role in increasing the competitiveness of the country, facilitating access to foreign markets, and enhancing export performance. It should be emphasized that the standards of the environmental protection features increase the consumer welfare in the import and domestic market processes.

On the other hand, almost all of the threats stated in this "SWOT" analysis are directly or indirectly related to the problems of standardization:

- Not observing community interests and inefficient public sector
- Lack of legislation to regulate sectors / inadequacy
- The public cannot renew itself according to the needs of the sector (incentives, permits, standards, increase entrepreneurship)
- Weakness of infrastructure and capacities of ports
- Organized Industrial Zone management not being done correctly
- Failure to compete in post-solution quality standards
- Bureaucratic obstacles in front of foreign investors
- Competition that will result from the outward international capital / technology with the agreement

The fact that almost all of the threats Northern Cyprus economy faces are related to the standardization, revealing how urgent and important it is to standardize products and services in the country. The threats in the first three items can be drastically eliminated by adopting and implementing institutional standards. The weakness of the infrastructure and capacities of the ports in the fourth item may be mainly due to the inadequate financing of infrastructure investments. However, if the widespread adoption of product and service standards in the private sector and in the public sector is considered to provide a more efficient and safer resource management than the economy in general, the standardization will play an important role in addressing this problem. The fact that the Organized Industrial Zones in the fifth item can not be properly managed and can be overcome by focusing on other standardization activities, especially management system standards. The threat of "unable to compete in quality standards after the solution", which is included in the sixth item, should also be taken seriously. Whether or not a solution exists, it is in every case that Northern Cyprus can comply with international standards in products and services. Compliance with the standards is highly necessary for the economic development and competitiveness of Northern Cyprus, even if there is no solution at all. Threats in the seventh and eight items can also be significantly reduced by becoming aware of all stakeholders at the national level of standardization and by becoming willing and enthusiastic about implementing the standards.

It can be seen as a fact, that Northern Cyprus has too many deficiencies related to standardization, even within a report which does not have standardization as a focus.. Another important and useful example of this situation can be found in the "Report on the Negotiation process and the Turkish Cypriot Economy" prepared by the Turkish Cypriot Chamber of Commerce (KTTO) (Gökçekuş et al., 2016). In almost every part of this report, the authors have rightly pointed out that Northern Cyprus has too many deficiencies in many areas and sectors, especially in harmonization with EU standards.

This report examines the situation of the agricultural, industrial, construction, trade, tourism, higher education, transportation and communication sectors of Northern Cyprus according to EU policies. "SWOT" analysis was conducted for each sector and the necessary things to do are listed. The report divides the list into two categories as "general" and "sector specific". Among the general issues, the shortcomings directly related to standardization are valid for almost all sectors : 1) the lack of legislation and regulations in line with the EU acquis; 2) the inadequacy of the necessary capacity of the buildings, facilities, equipment and personnel in the public sector to ensure and enforce the implementation of these legislation and regulations; 3) the absence of independent acreditation agencies and laboratories 4) The fact that the enterprises do not have the necessary documents about EU occupational health and safety, production / industry standards and food and health regulations, 5) The tax system and its rates are not in line with the EU. The specific topics in the Report are much more diverse and detailed. The important issue about these is that, they are all directly related to the problems of standardization. This detailed and important report (Gökçekuş et al., 2016) points out the shortcomings of Northern Cyprus in terms of standardization and in particular compliance with EU standards, as well as reminding them of the need for standardization of the governing body, as well as suggesting that a "national standards institute" is essential. It can also be a good guide in determining the activity priorities.

As a result, it is useful to emphasize that there is a very long way to go during the process of standardization for Northern Cyprus. Northern Cyprus's standardization problems are not limited to those mentioned above. For example, accounting systems are not fully in line with international standards and EU legislation. The statistical records in the country have not yet been fully standardized yet. The task of the "statistical institution" is largely sought by the State Planning Organization and it is not fully specialized in national statistics of the country. On the other hand, most of the countries in the World have such an expert institution compiling and recording national statistics in accordance with international standards. Both the banking system, the finance sector and the insurance regulatory framework have also many deficiencies when compared with international standards. Even in tourism, higher education and real estate sectors where the country has its relative advantages, it is not possible to mention standards in full compliance. It can be said that the standardization problems in all these areas are one of the important reasons why the investment climate in the country cannot reach the desired level.

Although appeared to be promising in its first years the Green Line Trading (GLT), has lost momentum, especially in recent years. One of the reasons for that is, since the products did not comply with EU standards (in particular hygiene, food safety and packaging standards) they are excluded from the GLT. In recent years, products such as farm fish, honey and potatoes, which are included in the scope of GLT, have to be produced in accordance with EU standards. In addition, imports of counterfeit goods in the country are quite common. However, imitation products will not be imported into the country if they don't conform with EU acquis and standards. It is beneficial for importers adjust themselves to this situation and to stop importing counterfeit goods. In the event of a possible settlement, it is known that the entire island will be open for free trade. It is clear that in Northern Cyprus, free trade and EU membership conditions cannot provide benefits and benefits for everyone. Economic actors who are already preparing for a solution can benefit from the conditions that they have adopted and implemented EU standards. It is very difficult for actors who see compliance with standards in products and services as "burden" and who are not already preparing for the solution to make a significant benefit from those conditions.

Northern Cyprus needs a deep-rooted mental transformation and a new story that will speed up its economic development and increase its competitiveness regularly and permanently. Such a mental transformation can be initiated by institutional public reforms. Such a new story can only be written by starting to act consciously, willingly and diligent about standards in products and services.

ANNEX I

Annex 1: Macroeconomic Indicators

		2008	2009	2010	2011	2012	2013	2014	2015
Real Growth Rate (% change)		-3,4	-5,7	3,6	4	0,5	1,3	4,9	4
GDP (Million TL)		5.079	5.376	5.614	6.508	6.955	7.607	8.858	10.225,5
GDP per capita (Current prices. US$)		16.005	13.292	14.611	15.285	15.123	15.357	15.140.3	13.737,00
Consumer Price Index (CPI,. %)		14,5	5,7	5,7	14,7	3,6	10,2	6,5	7.78
Exchange Rates (TL/€)		1,94	2,15	2,06	2,06	2,3	2,53	2,91	3,02
Exchange Rates (TL/$)		1,28	1,55	1,51	1,51	1,8	1,9	2,2	2,73
Total Deposits (Million, TL)		5.563	6.505	7.067	8.403	9.284	10.684	11.774	13.950,6
Total Deposits / GDP (%)		110	126	126	133	132	140	132.9	136
Total Loans (Million, TL)		3.431	3.976	4.189	5.402	6.288	7.870	9.557	10.399
Total Loans / GDP (%)		68	77	75	85	90	103	107.8	102
Loan / Deposit Rate (%)		62	61	59	64	73	78	81	75
Balance of Public Budget / GDP (%)		-14,2	-18,4	-15,4	-14	-8,8	-7,2	-4,8	-3,7
Public Debt Stock / GDP (%)		116	130	139	141	139	154	148,6	157
Foreign Trade Balance (Surplus + / Deficit -) (Million US$)		-1.597	-1.255	-1.507	-1.547	-1.583	-1.579	-1.650	1.382,5
Foreign Trade Balance / GDP (%)		44,6	40,2	45,6	47,8	47,3	45,7	48,6	43,2
Current Account Balance (Surplus + / Deficit -) (Million US$)		-390,3	-65,4	-275,8	-173,1	-125,1	-44,7	-12,6	271,6
Current Account Balance / GDP (%)		-9,9	-1,9	-7,4	-4,5	-3,2	-1,1	-0,3	7,2
Total Employment		91.223	91.550	93.498	97.103	99.117	101.181	103.149	112.811
Public Administration Employment		27.893	27.627	27.244	29.695	27.141	30.266	31.276	32.218
Active Insured Persons		70.115	66.685	70.331	71.144	74.869	77.334	79.711	84.793
Number of Unemployed		9.881	12.941	12.619	10.411	9.174	8.929	9.320	9.043
Minimum Wage (TL)		1.190	1.237	1.300	1.300	1.300	1.415	1.675	1.730

State Planning Organisation

Calculated using data from the State Planning Organisation

TRNC Central Bank

Calculated using data from the State Planning Organisation and TRNC Central Bank

Ministry of Labor and Social Security

ANNEX II

Annex 2 : Technical Notes and Sources for Competitiveness Report Hard Data

	Unit	Source / Method of Calculation	Amount	Implied GCR Rank	Comments / Reliability of Estimate
Investor Protection Index	Investor Protection Index 0-10 (best)	CTIDA Doing Business Report / 2015	4,5	101	
Available Seat Kilometers	Scheduled per week originating in the economy (in millions)/2015	Calculated using data from the Civil Aviation Office	29,71	113	This estimate is based on all scheduled flights from Ercan Airport plus %20 off the available seat km in the Greek Cypriot community since Turkish Cypriots use those airports too
Mobile telephone subscribers	per 100 population / 2015	Calculated using data from the SPO	246,4	1	Mobile telephone subscribers (2015): 805.422 Population: 326.160
Telephone lines	per 100 population / 2015	Calculated using data from the SPO	29,7	39	Telephone lines (2015): 805.422 Population: 326.160
Balance of Public Budget	GDP % /2015	SPO	-3,69	80	
National Savings Rate	GDP % / 2015	SPO	22,9	53	
Inflation	Annual percentage change in consumer price index / 2015	SPO	7,78	122	
Public Debt	As a percentage of GDP / 2015	SPO	157	137	
National Loan Rates			n/a	n/a	
Malaria incidence	per 100,000 population / 2015	Calculated using data from the Heath Authority	3,9	50	Malaria incidence (2015): 13 persons
Tuberculosis incidence	per 100,000 population / 2015	Calculated using data from the Heath Authority	12,6	36	Tuberculosis incidence (2015): 41 persons
HIV prevalence	as a percentage of adults aged 15 - 49 years / 2015	Calculated using data from the Heath Authority	0,02	1	HIV prevalence (2015) : 42 persons
Infant mortality	per 1000 live births / 2015	SPO	10,31	60	
Life expectancy	at birth years / 2015	Calculated using data from the SPO	81,5	17	Life expectancy(2015); male 79,7% female 83,3%
Primary enrollment	net primary education enrollment rate 2015	SPO	100	1	
Secondary enrollment	gross secondary education enrollment rate 2015	SPO	93,5	69	Secondary Enrollment (2015) : %100, high school and vocational high school: %87
Higher education enrollment rate	higher education enrollment rate 2015	SPO	87	5	

Annex 2 : Technical Notes and Sources for Competitiveness Report Hard Data

	Unit	Source / Method of Calculation	Amount	Implied GCR Rank	Comments / Reliability of Estimate
Total tax rate	%of profit tax, contribution and other taxes	CTIDA Doing Business Report / 2015	45,5	96	
Number of procedures required to start a business		CTIDA Doing Business Report / 2015	17	138	
Time required to start a business	number of days	CTIDA Doing Business Report / 2015	23	106	
Trade-weighted tariff rate	the avarage rate of duty per imported value unit / 2015	Calculated using data from the Trade Office and Finance Authorities	1,21	33	Calculated based on tatol ariff revenue divided by total value of imports for that period. Total tariff revenue at current prices (2015): 49.298.315 TL Import of goods (2015): 4.088.298.315 TL
Imports as a percentage of GDP	as a percentage of GDP / 2015	Calculated using data from the SPO	40,02	72	Import of goods (2015): 1.500.577.384 $
Firing Costs	in weeks of wages		n/a	n/a	
Female participation in the labor force	as a percentage of male participation / 2015	Calculated using data from the SPO	0,56	119	female participation in the workforce (2015): %35,90 Male participation in the labor force (2015): %64,10
Legal rights index	index on a 0-10 (best) scale	CTIDA Doing Business Report / 2015	6	46	
Internet users	percentage of internet users / 2015	Calculated using data from BTHK	116,35	1	Internet Users: Fixed + mobile broadband Total 379,472
Broadband Internet subscribers	per 100 population / 2015	Calculated using data from BTHK	20,67	43	
International Internet broadband	per user / 2015	Calculated using data from BTHK	82,01	44	kb/s/2015
Mobile broadband subscribers	per 100 population / 2015	Calculated using data from BTHK	95,67	16	
Domestic Market size Index	(GDP + value of imports - vaşu of exports) normalized on a 1-7 (best) scale (2015)	Calculated using data from the SPO	1,08	137	
Foreign market size index	value of exports of goods and services normalized on a 1-7 (best) scale / 2015	Calculated using data from the SPO	2,72	133	
GDP valued Purchasing Power Parity		Calculated using data from the SPO	4,87	135	
Exports as a percentage of GDP	as a percentage of GDP (2015)	Calculated using data from the SPO	49,40	37	
Utility patents	per million population / 2015		n/a	n/a	

Annex III:
Economic Regression Tables for Competitiveness in Northern Cyprus Section

1 a) All countries (15 countries)

PARTIAL LEAST SQUARES PATH MODELING (PLS-PM)

MODEL SPECIFICATION

1	Number of Cases	135
2	Latent Variables	4
3	Manifest Variables	15
4	Scale of Data	Standardized Data
5	Non-Metric PLS	FALSE
6	Weighting Scheme	centroid
7	Tolerance Crit	1e-06
8	Max Num Iters	100
9	Convergence Iters	4
10	Bootstrapping	FALSE
11	Bootstrap samples	NULL

BLOCKS DEFINITION

	Block	Type	Size	Mode
1	TG	Exogenous	4	A
2	EA	Endogenous	6	A
3	IG	Endogenous	2	A
4	KREE	Endogenous	3	A

BLOCKS UNIDIMENSIONALITY

	Mode	MVs	C.alpha	DG.rho	eig.1st	eig.2nd
TG	A	4	0.802	0.874	2.57	0.869
EA	A	6	0.885	0.916	3.91	0.932
IG	A	2	0.860	0.935	1.75	0.246
KREE	A	3	0.772	0.870	2.08	0.701

OUTER MODEL

		weight	loading	communality	redundancy
TG					
1	Institutions	0.391	0.934	0.872	0.000
1	Infrastructure	0.382	0.916	0.839	0.000
1	Mac. stability	0.234	0.613	0.376	0.000
1	Health and pri. edu.	0.207	0.687	0.471	0.000
EA					
2	Higher edu. and training	0.234	0.915	0.838	0.695
2	Goods market eff.	0.235	0.899	0.808	0.670
2	Labor market eff.	0.202	0.791	0.626	0.519
2	Fin. market soph.	0.206	0.808	0.652	0.541
2	Tech. readiness	0.217	0.857	0.735	0.610
2	Market Size	0.125	0.502	0.252	0.209
IG					
3	Business Sophistication	0.570	0.945	0.893	0.813
3	Innovation	0.497	0.927	0.860	0.783
KREE					
4	Basic Requirements	0.427	0.765	0.585	0.545
4	Efficiency Enhancers	0.342	0.806	0.650	0.606
4	Inn. and soph. factors	0.435	0.913	0.833	0.777

CROSSLOADINGS

		TG	EA	IG	KREE
TG					
1	Institutions	0.934	0.891	0.823	0.900
1	Infrastructure	0.916	0.896	0.797	0.860
1	Macroeconomic stability	0.613	0.515	0.481	0.566
1	Health and pri. edu.	0.687	0.483	0.330	0.571
EA					
2	Higher edu. and training	0.845	0.915	0.855	0.858
2	Goods market efficiency	0.834	0.899	0.856	0.881
2	Labor market eff.	0.733	0.791	0.739	0.736
2	Fin. market soph.	0.738	0.808	0.772	0.743
2	Tech. readiness	0.810	0.857	0.756	0.805
2	Market Size	0.331	0.502	0.575	0.462
IG					
3	Business Sophistication	0.829	0.912	0.945	0.904
3	Innovation	0.672	0.855	0.927	0.779
KREE					
4	Basic Requirements	0.775	0.843	0.807	0.765
4	Efficiency Enhancers	0.727	0.647	0.567	0.806
4	Inn. and soph. factors	0.805	0.827	0.836	0.913

INNER MODEL

$EA

	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	2.18e-16	0.0358	6.09e-15	1.00e+00
TG	9.11e-01	0.0358	2.54e+01	6.83e-53

$IG

	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	-4.92e-16	0.0261	-1.89e-14	1.00e+00
TG	-3.15e-01	0.0631	-5.00e+00	1.80e-06
EA	1.23e+00	0.0631	1.95e+01	9.19e-41

$KREE

	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	5.83e-16	0.0227	2.56e-14	1.00e+00
TG	5.52e-01	0.0600	9.20e+00	7.47e-16
EA	6.34e-02	0.1086	5.84e-01	5.60e-01
IG	3.98e-01	0.0759	5.24e+00	6.31e-07

CORRELATIONS BETWEEN LVs

	TG	EA	IG	KREE
TG	1.000	0.911	0.807	0.930
EA	0.911	1.000	0.945	0.942
IG	0.807	0.945	1.000	0.903
KREE	0.930	0.942	0.903	1.000

SUMMARY INNER MODEL

	Type	R2	Block_Communality	Mean_Redundancy	AVE
TG	Exogenous	0.000	0.639	0.000	0.639
EA	Endogenous	0.829	0.652	0.540	0.652
IG	Endogenous	0.910	0.877	0.798	0.877
KREE	Endogenous	0.932	0.689	0.643	0.689

GOODNESS-OF-FIT

[1] 0.7816

TOTAL EFFECTS

	relationships	direct	indirect	total
1	TG -> EA	0.9106	0.000	0.911
2	TG -> IG	-0.3153	1.122	0.807
3	TG -> KREE	0.5519	0.379	0.930
4	EA -> IG	1.2323	0.000	1.232
5	EA -> KREE	0.0634	0.490	0.553
6	IG -> KREE	0.3977	0.000	0.398

Table 1. Partial Least Squares Path Modeling Results

1 b) North Cyprus

```
> out4lvkk <- plspm(kk, inner, outerkk, modes)
> summary(out4lvkk)
```

PARTIAL LEAST SQUARES PATH MODELING (PLS-PM)

MODEL SPECIFICATION

1	Number of Cases	9
2	Latent Variables	4
3	Manifest Variables	11
4	Scale of Data	Standardized Data
5	Non-Metric PLS	FALSE
6	Weighting Scheme	centroid
7	Tolerance Crit	1e-06
8	Max Num Iters	100
9	Convergence Iters	7
10	Bootstrapping	FALSE
11	Bootstrap samples	NULL

BLOCKS DEFINITION

	Block	Type	Size	Mode
1	TG	Exogenous	3	A
2	EA	Endogenous	4	A
3	IG	Endogenous	2	A
4	KREE	Endogenous	2	A

BLOCKS UNIDIMENSIONALITY

	Mode	MVs	C.alpha	DG.rho	eig.1st	eig.2nd
TG	A	3	0.756	0.860	2.02	0.583
EA	A	4	0.775	0.857	2.41	0.779
IG	A	2	0.500	0.800	1.33	0.667
KREE	A	2	0.510	0.803	1.34	0.658

OUTER MODEL

	weight	loading	communality	redundancy
TG				
1 Institutions	0.575	0.883	0.780	0.0000
1 Macroeconomic stability	0.319	0.813	0.660	0.0000
1 Health and pri. edu.	0.317	0.734	0.539	0.0000
EA				
2 Higher edu. and training	0.427	0.893	0.798	0.0216
2 Goods market efficiency	0.412	0.909	0.827	0.0224
2 Fin. market soph.	0.215	0.605	0.366	0.0099
2 Market Size	0.183	0.626	0.391	0.0106
IG				
3 Business Sophistication	0.674	0.856	0.734	0.4164
3 Innovation	0.547	0.772	0.596	0.3382
KREE				
4 Basic Requirements	0.431	0.694	0.481	0.4412
4 Inn. and soph. factors	0.767	0.914	0.836	0.7665

CROSSLOADINGS

	TG	EA	IG	KREE
TG				
1 Institutions	0.88317	-0.0504	0.7636	0.80303
1 Macroeconomic stability	0.81265	-0.2735	0.1631	0.46115
1 Health and pri. edu.	0.73414	-0.1517	0.2918	0.44666
EA				
2 Higher edu. and training	0.08548	0.8932	0.4709	0.38870
2 Goods market efficiency	-0.00326	0.9094	0.4486	0.29563
2 Fin. market soph.	-0.37911	0.6053	0.0167	-0.00625
2 Market Size	-0.64562	0.6257	-0.0836	-0.22988
IG				
3 Business Sophistication	0.68236	0.2348	0.8565	0.76159
3 Innovation	0.22587	0.3938	0.7719	0.74330
KREE				
4 Basic Requirements	0.83655	-0.1542	0.3851	0.69363
4 Inn. and soph. factors	0.50857	0.4052	0.9839	0.91425

INNER MODEL

$EA

	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	-7.53e-16	0.373	-2.02e-15	1.000
TG	-1.64e-01	0.373	-4.41e-01	0.673

$IG

	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	-2.41e-16	0.268	-8.98e-16	1.0000
TG	6.63e-01	0.272	2.44e+00	0.0507
EA	4.83e-01	0.272	1.77e+00	0.1263

$KREE

	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	-1.58e-15	0.129	-1.23e-14	1.0000
TG	3.45e-01	0.184	1.88e+00	0.1196
EA	3.74e-02	0.161	2.32e-01	0.8257
IG	7.05e-01	0.196	3.60e+00	0.0156

CORRELATIONS BETWEEN LVs

	TG	EA	IG	KREE
TG	1.000	-0.164	0.584	0.751
EA	-0.164	1.000	0.374	0.244
IG	0.584	0.374	1.000	0.920
KREE	0.751	0.244	0.920	1.000

SUMMARY INNER MODEL

	Type	R2	Block_Communality	Mean_Redundancy	AVE
TG	Exogenous	0.000	0.660	0.0000	0.660
EA	Endogenous	0.027	0.596	0.0161	0.596
IG	Endogenous	0.568	0.665	0.3773	0.665
KREE	Endogenous	0.917	0.658	0.6039	0.658

GOODNESS-OF-FIT

[1] 0.5666

TOTAL EFFECTS

relationships	direct	indirect	total
1 TG -> EA	-0.1644	0.0000	-0.164
2 TG -> IG	0.6631	-0.0794	0.584
3 TG -> KREE	0.3454	0.4052	0.751
4 EA -> IG	0.4829	0.0000	0.483
5 EA -> KREE	0.0374	0.3404	0.378
6 IG -> KREE	0.7048	0.0000	0.705

2 Bootstrapped Estimates (15 countries)

PARTIAL LEAST SQUARES PATH MODELING (PLS-PM)

MODEL SPECIFICATION

1	Number of Cases	135
2	Latent Variables	4
3	Manifest Variables	15
4	Scale of Data	Standardized Data
5	Non-Metric PLS	FALSE
6	Weighting Scheme	centroid
7	Tolerance Crit	1e-06
8	Max Num Iters	100
9	Convergence Iters	4
10	Bootstrapping	TRUE
11	Bootstrap samples	200

BLOCKS DEFINITION

	Block	Type	Size	Mode
1	TG	Exogenous	4	A
2	EA	Endogenous	6	A
3	IG	Endogenous	2	A
4	KREE	Endogenous	3	A

BLOCKS UNIDIMENSIONALITY

	Mode	MVs	C.alpha	DG.rho	eig.1st	eig.2nd
TG	A	4	0.802	0.874	2.57	0.869
EA	A	6	0.885	0.916	3.91	0.932
IG	A	2	0.860	0.935	1.75	0.246
KREE	A	3	0.772	0.870	2.08	0.701

OUTER MODEL

	weight	loading	communality	redundancy
TG				
1 Institutions	0.391	0.934	0.872	0.000
1 Infrastructure	0.382	0.916	0.839	0.000
1 Macroeconomic stability	0.234	0.613	0.376	0.000
1 Saglık_İlkögretim	0.207	0.687	0.471	0.000
EA				
2 Higher edu. and training	0.234	0.915	0.838	0.695
2 Goods market efficiency	0.235	0.899	0.808	0.670
2 Labor market eff.	0.202	0.791	0.626	0.519
2 Fin. market soph.	0.206	0.808	0.652	0.541
2 Tech. readiness	0.217	0.857	0.735	0.610
2 Market Size	0.125	0.502	0.252	0.209
IG				
3 Business Sophistication	0.570	0.945	0.893	0.813
3 Innovation	0.497	0.927	0.860	0.783
KREE				
4 Basic Requirements	0.427	0.765	0.585	0.545
4 Efficiency Enhancers	0.342	0.806	0.650	0.606
4 Inn. and soph. factors	0.435	0.913	0.833	0.777

CROSSLOADINGS

	TG	EA	IG	KREE
TG				
1 Institutions	0.934	0.891	0.823	0.900
1 Infrastructure	0.916	0.896	0.797	0.860
1 Macroeconomic stability	0.613	0.515	0.481	0.566
1 Health and pri. edu.	0.687	0.483	0.330	0.571
EA				
2 Higher edu. and training	0.845	0.915	0.855	0.858
2 Goods market efficiency	0.834	0.899	0.856	0.881
2 Labor market eff.	0.733	0.791	0.739	0.736
2 Fin. market soph.	0.738	0.808	0.772	0.743
2 Tech. readiness	0.810	0.857	0.756	0.805
2 Market Size	0.331	0.502	0.575	0.462
IG				
3 Business Sophistication	0.829	0.912	0.945	0.904
3 Innovation	0.672	0.855	0.927	0.779
KREE				
4 Basic Requirements	0.775	0.843	0.807	0.765
4 Efficiency Enhancers	0.727	0.647	0.567	0.806
4 Inn. and soph. factors	0.805	0.827	0.836	0.913

INNER MODEL

$EA

	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	2.18e-16	0.0358	6.09e-15	1.00e+00
TG	9.11e-01	0.0358	2.54e+01	6.83e-53

$IG

	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	-4.92e-16	0.0261	-1.89e-14	1.00e+00
TG	-3.15e-01	0.0631	-5.00e+00	1.80e-06
EA	1.23e+00	0.0631	1.95e+01	9.19e-41

$KREE

	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	5.83e-16	0.0227	2.56e-14	1.00e+00
TG	5.52e-01	0.0600	9.20e+00	7.47e-16
EA	6.34e-02	0.1086	5.84e-01	5.60e-01
IG	3.98e-01	0.0759	5.24e+00	6.31e-07

CORRELATIONS BETWEEN LVs

	TG	EA	IG	KREE
	1.000	0.911	0.807	0.930
EA	0.911	1.000	0.945	0.942
IG	0.807	0.945	1.000	0.903
KREE	0.930	0.942	0.903	1.000

SUMMARY INNER MODEL

	Type	R2	Block_Communality	Mean_Redundancy	AVE
AVE					
TG	Exogenous	0.000	0.639	0.000	0.639
EA	Endogenous	0.829	0.652	0.540	0.652
IG	Endogenous	0.910	0.877	0.798	0.877
KREE	Endogenous	0.932	0.689	0.643	0.689

GOODNESS-OF-FIT

[1] 0.7816

TOTAL EFFECTS

	relationships	direct	indirect	total
1	TG -> EA	0.9106	0.000	0.911
2	TG -> IG	-0.3153	1.122	0.807
3	TG -> KREE	0.5519	0.379	0.930
4	EA -> IG	1.2323	0.000	1.232
5	EA -> KREE	0.0634	0.490	0.553
6	IG -> KREE	0.3977	0.000	0.398

BOOTSTRAP VALIDATION

weights

	Original	Mean.Boot	Std.Error	perc.025	perc.975
TG-Institutions	0.391	0.390	0.01484	0.3629	0.422
TG-Infrastructure	0.382	0.381	0.01610	0.3535	0.412
TG-Macroeconomic stability	0.234	0.232	0.02791	0.1818	0.287
TG-Health and Pri. Edu.	0.207	0.206	0.02420	0.1518	0.248
EA-Higher edu. and training	0.234	0.235	0.01054	0.2165	0.259
EA-Goods market efficiency	0.235	0.235	0.01061	0.2187	0.262
EA-Labor market eff.	0.202	0.202	0.00854	0.1864	0.219
EA-Fin. market soph.	0.206	0.206	0.00869	0.1914	0.224
EA-Tech. readiness	0.217	0.217	0.00880	0.2022	0.237
EA-Market Size	0.125	0.123	0.01174	0.0991	0.141
IG-Business Sophistication	0.570	0.574	0.01908	0.5423	0.618
IG-Innovation	0.497	0.495	0.00980	0.4730	0.512
KREE-Basic Requirements	0.427	0.430	0.02850	0.3848	0.489
KREE-Efficiency Enhancers	0.342	0.343	0.01691	0.3108	0.374
KREE-Inn. and soph. factors	0.435	0.436	0.02176	0.4007	0.482

loadings

	Original	Mean.Boot	Std.Error	perc.025	perc.975
TG-Institutions	0.934	0.933	0.01174	0.906	0.953
TG-Infrastructure	0.916	0.918	0.01213	0.887	0.937
TG-Macroeconomic stability	0.613	0.612	0.08045	0.454	0.752
TG-Health and Pri. Edu.	0.687	0.688	0.05174	0.571	0.777
EA-Higher edu. and training	0.915	0.915	0.01315	0.887	0.939
EA-Goods market efficiency	0.899	0.897	0.02013	0.856	0.933
EA-Labor market eff.	0.791	0.792	0.04219	0.705	0.854
EA-Fin. market soph.	0.808	0.807	0.03893	0.726	0.870
EA-Tech. readiness	0.857	0.856	0.02195	0.810	0.894
EA-Market Size	0.502	0.494	0.07749	0.343	0.621
IG-Business Sophistication	0.945	0.945	0.00726	0.928	0.958
IG-Innovation	0.927	0.924	0.01637	0.888	0.952
KREE-Basic Requirements	0.765	0.763	0.04055	0.675	0.833
KREE-Efficiency Enhancers	0.806	0.804	0.04786	0.703	0.877
KREE-Inn. and soph. factors	0.913	0.909	0.02533	0.850	0.951

paths

	Original	Mean.Boot	Std.Error	perc.025	perc.975
TG -> EA	0.9106	0.9109	0.0120	0.888	0.931
TG -> IG	-0.3153	-0.3285	0.0555	-0.431	-0.223
TG -> KREE	0.5519	0.5581	0.0604	0.452	0.671
EA -> IG	1.2323	1.2421	0.0480	1.154	1.333
EA -> KREE	0.0634	0.0512	0.1425	-0.194	0.311
IG -> KREE	0.3977	0.4048	0.0998	0.211	0.572

rsq

	Original	Mean.Boot	Std.Error	perc.025	perc.975
EA	0.829	0.830	0.0218	0.788	0.867
IG	0.910	0.908	0.0191	0.864	0.940
KREE	0.932	0.933	0.0190	0.895	0.965

total.efs

	Original	Mean.Boot	Std.Error	perc.025	perc.975
TG -> EA	0.911	0.911	0.0120	0.888	0.931
TG -> IG	0.807	0.803	0.0276	0.753	0.856
TG -> KREE	0.930	0.930	0.0110	0.909	0.949
EA -> IG	1.232	1.242	0.0480	1.154	1.333
EA -> KREE	0.553	0.555	0.0489	0.468	0.652
IG -> KREE	0.398	0.405	0.0998	0.211	0.572

3 REBUS Estimates (15 countries)

RESPONSE-BASED UNIT SEGMENTATION (REBUS) IN PARTIAL LEAST SQUARES PATH MODELING

Parameters Specification

Number of segments:	4
Stop criterion:	0.005
Max number of iter:	100

REBUS solution (on standardized data)

Number of iterations:	15
Rate of unit change:	0
Group Quality Index:	0.7566576

REBUS Segments

	Class.1	Class.2	Class.3	Class.4
number.units	48	46	21	20
proportions(%)	36	34	16	15

$path.coef

	Class.1	Class.2	Class.3	Class.4
TG->EA	0.9067	0.9139	0.9858	0.9709
TG->IG	-0.1067	0.1114	-1.2901	0.0526
TG->KREE	0.2769	0.6272	0.2811	-0.0591
EA->IG	1.0129	0.6841	2.2429	0.8964
EA->KREE	0.5049	0.0781	0.3693	0.2196
IG->KREE	0.2290	0.2954	0.3617	0.8156

$loadings

	Class.1	Class.2	Class.3	Class.4
Institutions	0.8692	0.8254	0.9801	0.9257
Infrastructure	0.9428	0.7208	0.9874	0.9586
Macroeconomic stability	-0.1513	0.4561	0.6669	0.8939
Health and pri. edu.	0.9114	0.5640	0.8865	0.8223
Higher edu. and training	0.9131	0.7772	0.9760	0.9445
Goods market efficiency	0.6708	0.7724	0.9846	0.8951
Labor market eff.	0.6639	-0.3228	0.9438	0.8804
Fin. market soph.	0.3825	-0.1224	0.9761	0.9595
Tech. readiness	0.8059	0.6623	0.9577	0.9606
Market Size	0.0215	0.8397	0.9644	0.8387
Business Sophistication	0.9286	0.8833	0.9686	0.9534
Innovation	0.9090	0.8880	0.9689	0.9412
Basic Requirements	0.8482	0.8351	0.9287	0.5872
Efficiency Enhancers	0.9505	0.8068	0.9983	0.7505
Inn. and soph. factors	0.9126	0.8070	0.9384	0.9432

$quality

	Class.1	Class.2	Class.3	Class.4
Aver.Com				
Com.TG	0.6245147	0.4317570	0.7915289	0.8127558
Com.EA	0.4201115	0.4106083	0.9354950	0.8358641
Com.IG	0.8442621	0.7843336	0.9385339	0.8974834
Com.KREE	0.8185688	0.6664998	0.9132494	0.5992465
Aver.Redu				
Red.EA	0.3453975	0.3429109	0.9091775	0.7879630
Red.IG	0.7103044	0.4860007	0.9288721	0.8058093
Red.KREE	0.7795351	0.5900942	0.9109723	0.5645883
R2				
R2.EA	0.8221568	0.8351290	0.9718678	0.9426928
R2.IG	0.8413317	0.6196352	0.9897055	0.8978542
R2.KREE	0.9523147	0.8853629	0.9975066	0.9421637
GoF				
GoF	0.7682325	0.6687287	0.9394137	0.8540394

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