

## ORIGINAL RESEARCH ARTICLE

# Comparative analysis of healthcare systems in the Horn of Africa and the evaluation of Türkiye's diplomatic health studies conducted in Somalia

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## Abstract

This study examines the effectiveness of the countries' health systems in the Horn of Africa region. It also investigates the perspectives of actors who have played an active role in health affairs in Somalia carried out by Türkiye. Using the Data Envelopment Analysis and Malmquist Total Factor Efficiency Analysis, we investigated the effectiveness of the health systems and improvements made throughout the years. In the countries of interest, efficiency levels and average total factor productivity showed positive and/or negative trends between 2000 and 2020. Kenya showed a marked performance in achieving improved average total factor productivity thanks to the effective use of current technology in health, success in integrating new technologies into the health system, and a high potential to produce more output despite insufficient existing inputs. The remaining countries lagged behind in improving their production factors. Since 2014, Türkiye has provided health services in Somalia through health diplomacy and conducted medical examinations for numerous patients in a well-equipped hospital. (*Afr J Reprod Health 2024; 28 [8]: 89-98*).

**Keywords:** Comparative analysis, healthcare system, health indicator, data envelopment analysis, health diplomacy, soft power

## Résumé

Cette étude examine l'efficacité des systèmes de santé des pays de la région de la Corne de l'Afrique. Il étudie également les perspectives des acteurs qui ont joué un rôle actif dans les affaires de santé en Somalie menées par Türkiye. En utilisant l'analyse de l'enveloppe des données et l'analyse d'efficacité des facteurs totales de Malmquist, nous avons étudié l'efficacité des systèmes de santé et les améliorations apportées au cours des années. Dans les pays intéressés, les niveaux d'efficacité et la productivité totale moyenne du facteur ont montré des tendances positives et/ou négatives entre 2000 et 2020. Le Kenya a fait preuve d'une performance marquée dans l'amélioration de la productivité totale moyenne du facteur grâce à l'utilisation efficace de la technologie actuelle dans le domaine de la santé, au succès de l'intégration de nouvelles technologies dans le système de santé et au potentiel élevé de produire plus de produits malgré l'insuffisance des produits existants. Les autres pays sont en retard dans l'amélioration de leurs facteurs de production. Depuis 2014, Türkiye a fourni des services de santé en Somalie par le biais de la diplomatie de santé et a effectué des examens médicaux pour de nombreux patients dans un hôpital bien équipé. (*Afr J Reprod Health 2024; 28 [8]: 89-98*).

**Mots-clés:** Analyse comparative, système de santé, indicateur de la santé, analyse de l'enveloppe des données, diplomatie de la Santé, soft power

## Introduction

The Horn of Africa (HOA) is a peninsula in the northeast of the African continent, comprising eight countries: Djibouti, Eritrea, Ethiopia, Kenya, Somalia, Sudan, South Sudan, and Uganda. HOA covers approximately two million km<sup>2</sup>, with approximately 115 million people<sup>1</sup>. Because of the richness of its geography, history, population, politics, and culture, this region has been particularly prone to violence, political unrest, large

socioeconomic gaps, and poor population health<sup>2,3</sup>. Drought, conflict, climate change, and increasing prices of food, fuel, and fertilizer gave rise to an unprecedented food and health crisis. Hunger and malnutrition pose a direct threat to health, but they also weaken the body's defense system and open the door to diseases including pneumonia, measles, and cholera<sup>4</sup>. The main health issues affecting the region are acute and chronic malnutrition, diarrhea, other water, food-borne diseases (cholera, typhoid, hepatitis A&E), vaccine-preventable diseases (polio,

measles), respiratory diseases (acute respiratory infections, tuberculosis), and vector-borne diseases (malaria, dengue, and yellow fever). Health consequences related to pregnancy and childbirth are also major issues affecting the region<sup>5</sup>.

It is important for health systems to improve society's health and to respond to people's expectations through the fair, efficient, and effective use of resources. For this reason, it is necessary to measure the performance of health systems systematically, to evaluate the results, and accordingly, and to continuously improve all system dimensions<sup>6</sup>.

One of the most common methods used to measure the effectiveness of health systems is the Malmquist Total Productivity Index, which analyzes "the technological change, full technical efficiency and scale efficiency change values". Whether the health systems of countries operate at a scale suitable for them, the direction of the change in the amount of output produced with the same input and managerial activities are also determined, thus contributing to the formation of the future strategies of the health system<sup>7</sup>.

Global Health Diplomacy refers to the multi-level and multi-actor negotiation processes that guide and manage the global policy environment for health and non-health forums. Over the past decades, a very complex, dynamic, and diversified global health "ecosystem" of global health diplomacy has emerged<sup>8</sup>. Considering the health inequality indicators in the world, while life expectancy at birth is 75 years or more in almost all developed countries, life expectancy at birth in less developed countries is around 60 years<sup>9</sup>.

Although life expectancy at birth increased by 6.2 years worldwide between 1990 and 2013, this increase was very slow in Sub-Saharan African countries, where premature mortality is still very high compared to other countries and regions<sup>10</sup>.

The solution for health inequalities and cross-border health problems that increase with globalization must be on a global scale. The importance of bilateral and multiple diplomatic cooperations in health has been continually increasing regarding the health, safety, and sustainability of the health status of societies. In addition to foreign policies, programs and partnerships are also needed in such an ecosystem. In the new world order, global health diplomacy

comes to the fore as one of the most important implementation tools of the soft power of countries. Global health diplomacy can also be considered humanitarian diplomacy. Türkiye is one of the top three countries globally regarding humanitarian aid<sup>10</sup>.

The current study examines the effectiveness of the countries' health systems in the Horn of Africa region. The countries' data were examined in three different periods between 2000-2020, on the axis of one output and four input variables, the changes in total factor productivity, and the reasons for this change with the Malmquist Total Productivity Index. The study also evaluates the opinions of the stakeholders who play an active role in health diplomacy, hospital projects, and other health studies carried out by Türkiye in Somalia since 2014. The initial phase of the research did not include Somalia, located in the Horn of Africa, comparing health systems due to a lack of data. It became imperative to conduct qualitative research in Somalia, a country where Türkiye has been providing healthcare services as part of health diplomacy since 2014, to thoroughly analyze the healthcare services from the perspectives of various stakeholders.

## Methods

### *Assessment of countries and their health systems in the Horn of Africa*

The study included six countries located in the Horn of Africa. All data were obtained from The World Bank DataBank Statistics<sup>11</sup> as secondary resources. The input variables consisted of the following: nurses and midwives (per 1.000 people), primary completion rate (total % of relevant age group), current health expenditure (% of GDP), and domestic private health expenditure (% of current health expenditure). In addition to the four input variables, healthy life expectancy at birth (years) was analyzed as an output variable.

### *Techniques used in data analysis*

Data were obtained and analyzed using the input-oriented Malmquist Total Factor Productivity (TFPCH) method. Statistical analyses were performed using DEAP 2.1 and SPSS 25.0 programs.

### ***Study limitations***

Because the 2021 and 2022 data were missing, those of 2000-2006, 2007-2013, and 2014-2020 were examined. When a country's data for a certain year were not available, calculations were rounded to the nearest year. Data from South Sudan and Somalia were excluded from the TFPCH analysis because of deficiencies in almost all input variables concerning these countries.

### ***Türkiye's contribution to Somalia's health system***

Apart from the main scope of our study (*Assessment of Countries and their Health Systems in the Horn of Africa*), we also evaluated Türkiye's endeavors implemented through health diplomacy in Somalia. In this context, we used a purposeful maximum diversity sampling method that included 15 individuals from Somalia involved in healthcare activities, who were selected for in-depth interviews to provide insight into Türkiye's contribution to the country's needs. The participants included academicians in health diplomacy, health professionals working voluntarily in Somalia, bureaucrats in state institutions, non-governmental organizations, ambassadors, and diplomats working in Somalia. All participants gave consent to participate.

All interviews were conducted until data saturation. A semi-structured interview form consisting of 23 questions, including 3 questions on socio-demographic characteristics, 14 questions on health diplomacy, and 6 questions about the participants' views on health services in Somalia. The data collection started on November 28, 2019 and ended on September 30, 2020. A total of 746 minutes were spent on the interviews, the shortest lasting 25 minutes and the longest 92 minutes. The researchers paid particular attention to not interrupting the participant's responses during the interview.

All interviews were computer-recorded after obtaining verbal consent of the participants. The recordings were transcribed by the researchers and a content analysis was carried out with a total of 185 pages and 63.202 words. Interviews were analyzed with a computer-assisted qualitative data analysis program (MAXQDA Analytics Pro)<sup>12</sup>. A code list was created to classify data into main domains, relevant themes and subthemes. Each

video recording was converted into text in the Word program. The contents of the responses given to the questions were categorically recorded on the excel data sheets. Using both content analysis and the *Classification* method, the information was classified into relevant themes and subthemes independently by 2 co-authors<sup>13</sup>. The number of participants and the code results were tabulated in frequency tables. The density of the number of coded sections was shown as colored dots in the density matrix. Relationship maps contained the topics that the participants commonly expressed on the same topic during the interview.

The study was approved by the Non-Interventional Research Ethics Committee of Üsküdar University (Decision date 27.11.2019, number: 2019/539).

## **Results**

### ***Assessment of countries and their health systems in the Horn of Africa***

Data on four input variables and one output variable obtained for time intervals 2000-2006, 2007-2013, and 2014-2020 are shown in Table 1.

Among the six countries assessed, Kenya's primary completion rate (total % of relevant age group) and Sudan's domestic private health expenditure (% of current health expenditure) were considerably higher compared with the rates of other countries (Figure 1).

### ***The relationships between the variables used in data envelopment analysis***

Correlation analysis showed relatively low correlation between input and output variables for the corresponding years (Table 2).

### ***Data envelopment analysis results***

The Efficiency Factor affects regression in the Total Factor Productivity (TFPCH) score by obtaining the technical efficiency change scores (EFFCH) and Technological Change Scores (TECHCH), separately. The comparative Efficiency Values are given in Table 3.

The Horn of Africa countries, from the 1<sup>st</sup> period (2000-2006) to the 2<sup>nd</sup> period (2007-2013), there was an average increase of 0.2% in technical efficiency and a decrease of 27.6% in technological change. Overall, there was a 25.9% decline in total

**Table 1:** Input and output variables used in data envelopment analysis in years

Countries	Input1			Input2			Input3			Input4			Output		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
<b>Eritrea</b>	0.921	1.299	1.328	60.81	77.51	66.46	6.63	5.15	4.06	44.25	43.9	47.63	57.32	62.133	65.529
<b>Djibouti</b>	0.565	0.645	0.729	31.24	47.72	60.01	3.33	3.21	2.55	44.35	31.77	25.62	57.563	60.305	65.751
<b>Ethiopia</b>	0.225	0.226	0.771	34.99	51.44	57.62	4.51	4.64	3.58	40.43	45.62	49.05	54.426	61.457	65.838
<b>Sudan</b>	1.048	0.993	1.056	59.5	59.33	59.76	3.9	5.83	5.58	63.25	64.05	72.65	59.734	62.736	64.885
<b>Uganda</b>	1.359	1.251	1.427	60.29	59.27	56.03	5.16	6.11	4.55	46.59	45.01	42.91	49.486	56.945	62.311
<b>Kenya</b>	0.453	0.584	1.011	86.63	92.7	98.67	5.16	5.88	4.81	54.85	45.11	39.31	52.945	60.703	65.735

1:2000-2006 2:2007-2013 3:2014-2020

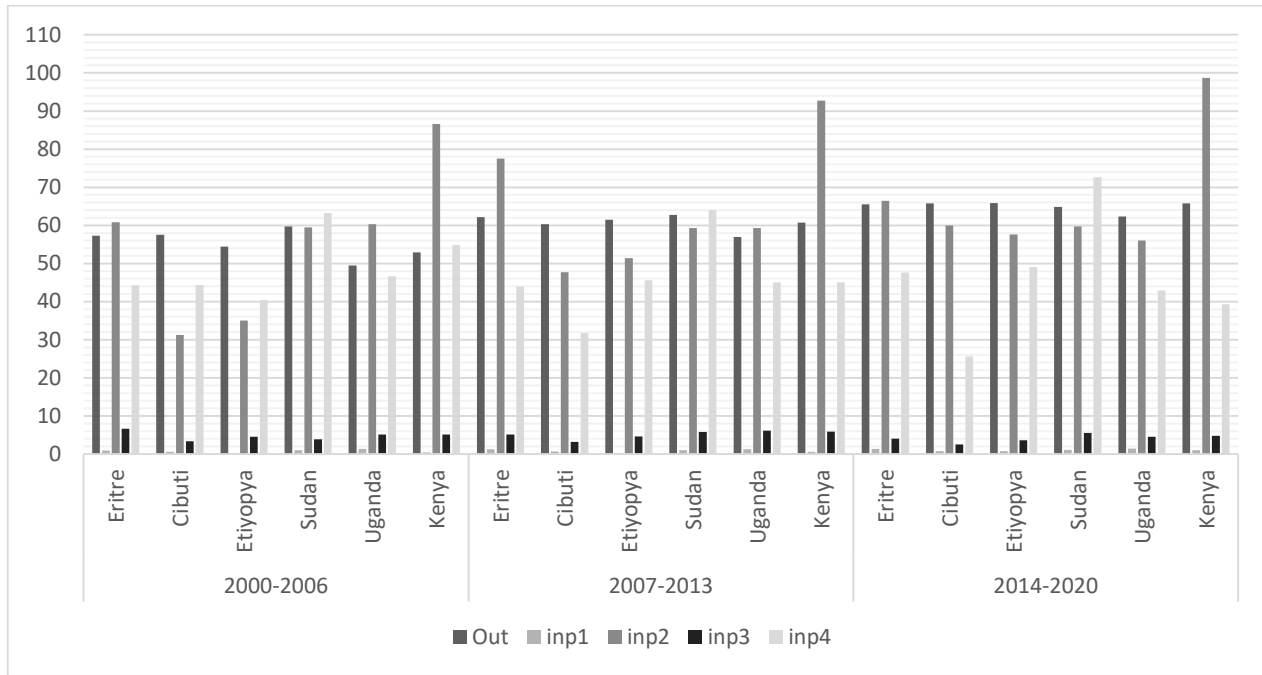
**Output:** Healthy life expectancy at birth (years)

**Input1:** Nurses and midwives (per 1,000 people)

**Input2:** Primary completion rate (total % of relevant age group)

**Input3:** Current health expenditure (% of GDP)

**Input4:** Domestic private health expenditure (% of current health expenditure).



Output: Healthy life expectancy at birth (years); Input1: Nurses and midwives (per 1.000 people). Input2: Primary completion rate total (% of relevant age group) Input3: Current health expenditure (% of GDP) Input4: Domestic private health expenditure (% of current health expenditure).

Figure 1: Graphical representation of input and output data of the 3rd period

Table 2: Relationships between variables in data envelopment analysis in three different periods between 2000-2020

Relationships between variables in data envelopment analysis (2000-2006)					
Variables	1	2	3	4	5
1 Healthy life expectancy at birth (years)	1				
2 Nurses and midwives (per 1.000 people)	-.145	1			
3 Primary completion rate. total (% of relevant age group)	-.292	.259	1		
4 Current health expenditure (% of GDP)	-.295	.240	.520	1	
5 Domestic private health expenditure (% of current health expenditure)	.322	.313	.572	-.224	1
Relationships between variables used in data envelopment analysis (2007-2013)					
Variables	1	2	3	4	5
1 Healthy life expectancy at birth (years)	1				
2 Nurses and midwives (per 1.000 people)	-.234	1			
3 Primary completion rate total (% of relevant age group)	.237	.750	1		
4 Current health expenditure (% of GDP)	-.174	.593	.498	1	
5 Domestic private health expenditure (% of current health expenditure)	.404	.211	.245	.738	1
Relationships between variables used in data envelopment analysis (2014-2020)					
Variables	1	2	3	4	5
1 Healthy life expectancy at birth (years)	1				
2 Nurses and midwives (per 1.000 people)	.094	1			
3 Primary completion rate. total (% of relevant age group)	-.259	-.336	1		
4 Current health expenditure (% of GDP)	-.615	.046	.495	1	
5 Domestic private health expenditure (% of current health expenditure)	-.044	.220	-.187	.631	1

factor productivity. Among these countries, Kenya scored the highest with an 18.6% increase in total factor productivity growth followed by Uganda with 8%, whereas Sudan had the most critical situation

with a decrease of 65.4%, followed by Eritrea (52%), Djibouti (16%) and Ethiopia (7%).

From the 2<sup>nd</sup> period (2007-2013) to the 3<sup>rd</sup> period (2014-2020), there was an overall increase by

**Table 3:** Technical technological and total factor efficiency results for the 1st and 2nd periods

Countries	2000-2006→2007-2013			2007-2013→2014-2020		
	EFFCH	TECHCH	TFPCH	EFFCH	TECHCH	TFPCH
Eritrea	1.000	0.476	0.476	0.981	0.609	0.597
Djibouti	1.000	0.836	0.836	1.000	0.614	0.614
Ethiopia	1.000	0.928	0.928	1.000	0.544	0.544
Sudan	<b>0.823</b>	<b>0.421</b>	<b>0.346</b>	1.215	1.892	2.299
Uganda	1.140	0.947	1.080	1.210	0.986	1.193
Kenya	<b>1.217</b>	<b>0.983</b>	<b>1.186</b>	1.718	3.326	5.713
Mean	<b>1.022</b>	<b>0.724</b>	<b>0.741</b>	<b>1.163</b>	<b>1.039</b>	<b>1.209</b>

**Table 4:** Technical technological and total factor efficiency results from over 21 years

Countries	2000-2006 → 2014-2020		
	EFFCH	TECHCH	TFPCH
Eritrea	0.991	0.538	0.533
Djibouti	1.000	0.717	0.717
Ethiopia	1.000	0.710	0.710
Sudan	1.000	0.892	0.892
Uganda	1.175	0.966	1.135
Kenya	1.446	1.808	2.614
<b>Mean</b>	<b>1.091</b>	<b>0.868</b>	<b>0.946</b>

16.3% in technical efficiency, by 3.9% in technological change and by 20.9% in total factor productivity. During this period, total factor productivity increased in three countries (Kenya with 571.3%, Sudan with 229.9% and Uganda with 19.3%), whereas it decreased in the remaining three countries (40% for Eritrea, 39% for Djibouti and 46% for Ethiopia).

Given the overall changes from 2000 to 2020, technical efficiency increased by an average of 9.1%, whereas technological change and total factor productivity decreased by 13.2% and 5.4%, respectively. Two countries increased total factor productivity (Kenya 261.4%, Uganda 113.5%). The remaining four countries showed decreases in total factor productivity (Eritrea 47%, Djibouti 28%, Ethiopia 29% and Sudan 11%) (Table 4).

**Further focus on Somalia’s health system**

The code matrices created for the statements of the participants, including the interactive citation matrices, are shown in Figure 1.

The health care services in Somalia were categorized by three different codes: opinions about hospitals, opinions about strategy and situation assessment for hospitals, and needs analysis.

**Opinions on hospitals in Somalia**

The code for opinions about the hospitals in Somalia was assessed under eight subcodes. The first three included an important and successful investment, the establishment of the basic health structure opportunity and satisfying local needs. The remaining five subcodes were setting an example, free treatment or treatment with reasonable fees, advanced hardware and service, sustainability of health system, and the availability to treatments.

The participants commonly focused on important and successful investments. They reported that the hospital established by Türkiye’s sources was an important and successful investment. The statements of the two participants (P5 and P7) on the subject are as follows:

*“Somalia is a relatively large country. People from other places come to the Recep Tayyip Erdoğan Hospital for treatment. Considering the infrastructure and equipment, this hospital is one of the important health facilities not only in Somalia but also in the Horn of Africa region.” (P7)*

The participants also expressed their opinions about the local needs. They emphasized that the hospital in Somalia met the region’s needs.

*“Without this hospital, the Somalian health care system would collapse. Because of the civil war and conflict in the last 30 years, there is no state structure and public service. In such an environment, this hospital has provided critical health care services. ...It offers many treatments in diverse fields even in plastic surgery.” (P5)*

Participants also expressed their views on establishing the basic health structure.

Code System	P5	P6	P7	SUM
Evaluation of Our Country's Health Diplomacy Strategies				0
Services in Somalia				0
Opinions on Hospitals in Somalia				0
Important and Successful Investment	2	1	3	6
For Local Needs	1	2	2	5
Establishing the Basic Health Structure	1		4	5
Setting an Example	2	1	2	5
Treatment with Free and Reasonable Fees	2	1	1	4
Advanced Hardware and Service	2			2
Sustainable			2	2
Opportunity to Be Treated in the Country		1		1
Needs Analysis for Hospitals in Somalia				0
Data Acquisition and Reliability Issues			2	2
Strategy and Situation Assessment for Hospital in Somalia				0
Successful Status (Administrative and Financial)	5	3	7	15
Long-Term Evaluation Requirement		1	2	3
<b>Σ SUM</b>	<b>15</b>	<b>10</b>	<b>25</b>	<b>50</b>

**Figure 2:** Code system

It was emphasized that in the region where the hospital in Somalia was established, the basic health structure was quite inadequate before.

*“The School of Health Sciences was established for the future employment of Somalian students in the hospital. This school will be handed over to the Somalian experts, and we [Türkiye] will continue to help them as consultants. The hospital is a comprehensive business, which requires sufficient capacity; the Somalian will eventually be learning this.” (P7)*

Participants also expressed their opinions about setting an example. It was emphasized that setting up a hospital in a geographical area like Somalia represents an example.

*“This hospital is a very crucial acquisition for Somalia. The Ministry of Health of the Republic of Türkiye trains people and provides healthcare services. This is a good example of successful health diplomacy that can be taught in textbooks.” (P5)*

Participants also stated that the hospital in Somalia provides free or reasonable services. Below is a sample comment.

*“Offering free service is not right. But they pay particular attention to the fact that the wage they pay is an acceptable wage in those market conditions. In addition, the hospital has a certain quota for those*

*who are in serious condition and cannot afford treatment; in such cases, the hospital provides the necessary convenience within that quota.” (P7)*

Participants also expressed their opinions about the advanced equipment and service. It has been stated that the service quality of the hospital in Somalia is quite high. The statements of the following participant on the subject are as follows:

*“The service provided by Recep Tayyip Erdoğan Hospital has nothing short of a full-fledged public hospital in our country. It offers treatment opportunities for many patients in many fields such as plastic surgery, except for specific things in many fields, be it doctors, equipment or equipment.” (P5)*

Participants find a sustainable solution such as health vocational schools in Somalia important. The statement of a participant is as follows:

*“We [Türkiye] served healthcare in Somalia through the doctors and healthcare staff of our Ministry of Health. And this is not a long-term sustainable solution; by doing so you are not creating the necessary expertise. As a solution, we started to train the Somalian healthcare personnel in the hospital. They are working with our nurses and doctors. Gradually, we were successful in building health the necessary expertise the hospital. The Somalian healthcare personnel is now responsible for the services provided. This is an important step*

forward. This way Somalian healthcare professionals will have sufficient expertise in the next 10 years. This is our aim.” (P7)

Participants emphasized that patients could access treatment services in their own countries. The remark of a participant is below:

“Human life is very important. I think it is very sad that some people die because they cannot receive the necessary treatment. The State of the Republic of Türkiye is providing such a humanitarian service in Somalia, at times even for free, without any discrimination. . . . Through the services we [Türkiye] provide, we are trying to secure the right of Somalian people’ lives even if this service is partial.” (P6)

### **Strategy and situation assessment for the hospital in Somalia**

The strategy and situation assessment code for the hospital in Somalia is also defined with two different subcodes: successful status (administrative and financial) and long-term evaluation.

Participants were positive about the successful status of the sub-code (administrative and financial). Some participants’ feedback was as follows:

“According to the statistics, our hospital has improved in recent years . . . . Since its establishment, the hospital has been increasingly serving Somalians.” (P7)

Participants also commented on the need for long-term evaluation. Since the management of the hospital established in Somalia has not completely transferred to Somalia, more time is needed to make a strategic assessment. Below are some sample comments:

“Gathering statistical information in this way in Somalia is very difficult, not only in health but also in other fields. This is a place without even a census. Figures can only be approximate, and we do not have sufficient data for statistical public opinion polls.” (P7)

### **Needs analysis for hospitals in Somalia**

The category of need analysis for the hospital in Somalia is defined with one code: data acquisition and reliability issues.

Obtaining data and reliability was the most significant problem for participants. Below are some samples.

“Collecting health data and services covering Somalia’s entire population can be done later.” (P7) According to the distribution by the intensity of the participants’ views, the large fonts represent more intensive expressions, while the small fonts designate the less intensive ones.

## **Discussion**

The current study demonstrated that the Horn of Africa countries’ efficiency levels and average total factor productivity have gradually changed in separate periods between 2000 and 2020. This study also found that Kenya showed superior average total factor productivity, leading to the efficient utilization of current health technology, successful integration of new technologies into the health system, and a significant capacity to generate greater output with existing resources between 2000-2020. Nyawira and colleagues found that although healthcare stakeholders generally agree that an efficient health system involves maximizing outputs or outcomes within a given budget in Kenya, they also acknowledge the importance of aligning these systems with the population’s health needs. The situation aligns with the perspective that being responsive to the health needs of the people is a crucial objective of the healthcare system, along with efficiency, equal access, financial risk protection, and quality<sup>14</sup>.

The importance of health diplomacy has gradually increased in Türkiye and globally. Türkiye has been delivering many healthcare services in Somalia using health diplomacy and has performed medical examinations for countless patients in a well-equipped hospital. Concurrently with our findings, previous literatures mentioned that Türkiye’s peacekeeping efforts in Somalia include providing crucial medical help<sup>15-17</sup>. Türkiye’s soft power has been greatly influenced by its health sector. Türkiye has been providing medical assistance to other countries worldwide. Somalia has been among the largest beneficiaries in recent years. TIKA, the Ministry of Health, the Turkish Red Crescent, the Istanbul Metropolitan Municipality, and other non-governmental organizations are among the formal entities providing medical assistance to the country<sup>18</sup>.



## Conclusions

### *Assessment of countries and their health systems in the Horn of Africa*

The current study examines the effectiveness of the Horn of Africa countries' health systems and the change in their efficiency status through DEA and Malmquist Total Factor Efficiency Analysis. Countries' efficiency levels and average total factor productivity have gradually changed in separate periods between 2000 and 2020. Kenya has a higher average total factor productivity, resulting in the effective use of current technology in health, success in integrating new technologies into the health system, and a high potential to produce more output with existing inputs. The remaining countries have yet to be able to manage their production factors well.

This study showed that countries that are not technologically advanced could increase average Total Factor Productivity by making the best using current health technology and increasing technical efficiency.

Different inputs and outputs in DEA analysis can change the study results. This study will guide future studies to use different inputs and outputs. This study will also provide policymakers to take action to improve their health systems.

### *Further focus on Somalia's health system*

With the developments in the field of globalization and technology, there have been changes in the sociological dimension of health such as health perceptions and health definitions. The same can be said for the social determinants of health and health policy decision-makers. The increasing interaction provided by globalization among countries and continents affects health negatively, such as climate changes, and chronic and infectious diseases. As a result of the rapid spread of health problems in different countries, different problems have emerged, and global-scale initiatives are needed to cope with them. Therefore, the necessity of health diplomacy has emerged in international relations and health policies. Global health issues management should be addressed both in the context of preventing global health problems and in humanitarian diplomacy<sup>19</sup>. The importance of health diplomacy has been gradually increasing in Türkiye,

and globally, increasing the momentum of health diplomacy studies as of 2002. In this context, many projects and programs have been carried out by actors such as TİKA, the Ministry of Health, Kızılay, AFAD, and non-governmental organizations.

In Turkish foreign policy, before 2002, Türkiye-Africa relations focused on only North Africa; however, after 2002, sub-Saharan African countries also came into perspective—countries struggling with problems such as hunger, infectious diseases, and internal conflicts for many years. The action plan—the African Initiative—was initiated in Türkiye in 1998, and developed and implemented in 2005, a year which was named the Year of Africa<sup>20</sup>. Since 2005, Türkiye's assistance has increased every year. In 2015, with \$3.2 billion Türkiye won the second global rank of the most humanitarian aid<sup>21</sup>.

Somalia Mogadishu Türkiye Recep Tayyip Erdogan Training and Research Hospital, the medical equipment and interior furnishings of which were carried out by TİKA in Somalia, includes services such as polyclinics, inpatient services, emergency services, intensive care, and delivery and operating rooms. Allegedly, it is the most modern hospital in terms of equipment, with an average of 100 operations and 6.000 patients per month<sup>22</sup>. From its establishment in 2014 to December 2019, a total of 1.211.200 people were examined and 38.212 people were treated<sup>23</sup>.

Health diplomacy is a new field for Türkiye. Although academic studies in this field are quite limited, the importance of health diplomacy will increase in the future. Health should be removed from the subtitles of other diplomacy types and integrated into foreign policy as "health diplomacy." Steps can be taken to ensure cooperation and coordination among stakeholders in health diplomacy.

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The authors declared that this study has received no financial support.

## Conflict of interest

No conflict of interest was declared by the authors.

## Ethics approval

All procedures performed in this study involving human participants were in accordance with the

ethical standards of the institutional research committee (Uskudar University Ethics Committee) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

## Consent to participate

Informed consent was obtained from all individual participants included in the study.

## Authors' contributions

FKY and PGK participated in the study design, FKY contributed to the data analysis. All authors participated in the interpretation of the data, writing and revision of the manuscript. All authors contributed to the revision of the final work.

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