

Analyzing Competitiveness of the Hospital Sector and its Value Chain in the City of Tbilisi – Using Smart Specialisations Methodology Components

FINAL REPORT



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Ilia State University Business Research Center (ISU)

Policy and Management Consulting Research Center (PMRC)

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Research

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DEFINITION OF KEY TERMS

PRODUCTION VALUE - determines quantity of production made by an economic entity, and volume of realized output including goods or services bought for resale and changes in stocks of finished goods.

VALUE ADDED - in basic prices is calculated on the basis of output, to which the subsidies on products are added, and purchasing of goods and services are subtracted (except products, that are bought for as-is-resale), and also changes in stocks of materials and supplies are added or subtracted. This amount is value added, which is estimated according to cost of various factor expenses of industrial activity of the economic entity.

TURNOVER - is an indicator of an economic activity during an accounting period. It corresponds to the volume of sales of goods or services made by the entity. Turnover does not include sale of fixed capital, and the subsidies on production, which are received from the state bodies.

HUMAN HEALTH ACTIVITIES - include activities of short- or long-term hospitals, general or specialty medical, surgical, psychiatric and substance abuse hospitals, sanatoria, preventoria, medical nursing homes, asylums, mental hospital institutions, rehabilitation centres, leprosaria and other human health institutions which have accommodation facilities and which engage in providing diagnostic and medical treatment to inpatients with any of a wide variety of medical conditions.

RESIDENTIAL CARE ACTIVITIES - include the provision of residential care combined with either nursing, supervisory or other types of care as required by the residents. Facilities are a significant part of the production process and the care provided is a mix of health and social services with the health services being largely some level of nursing services.

SOCIAL WORK ACTIVITIES WITHOUT ACCOMMODATION - include the provision of a variety of social assistance services directly to clients. The activities in this division do not include accommodation services, except on a temporary basis.

HOSPITAL ACTIVITIES - short- or long-term hospital activities, i.e. medical, diagnostic and treatment activities, of general hospitals and specialised hospitals, carried out under the direct supervision of medical doctors and include: services of medical and paramedical staff, services of laboratory and technical facilities, including radiologic and anaesthesiologic services, emergency room services, provision of operating room services, pharmacy services, food and other hospital services, services of family planning centres providing medical treatment such as sterilisation and termination of pregnancy, with accommodation.

MEDICAL AND DENTAL PRACTICE ACTIVITIES: includes medical consultation and treatment done by general medical practitioners and medical specialists, including surgeons, dentists etc.

OTHER HUMAN HEALTH ACTIVITIES: includes activities for human health not performed by hospitals or by medical doctors or dentists: activities of nurses, midwives, physiotherapists or other paramedical practitioners in the field of optometry, hydrotherapy, medical massage, occupational therapy, speech therapy, chiropody, homeopathy, chiropractic, acupuncture, etc.

ABBREVIATIONS

LQ Location Quotient

SSA Shift-Share Analysis

VCA Value Chain Analysis

GEOSTAT National Statistics Office of Georgia

1 INTRODUCTION

Tbilisi is not only the capital city of Georgia, but is also the centre of the country's economic development. Around 49% of the country's GDP (GEL 14.3 billion as of 2016) is created in Tbilisi. Furthermore, 31% of the Georgian population (1.16 million people as of 1 January 2018) lives in the capital.

Recently, there has been a general trend to study the economic ties between centres of investment attraction and the surrounding territories. For the present study, we chose the region of Kvemo Kartli (Lower Kartli) as the area of research due to its proximity to Tbilisi. According to the 2016 data, 8% of the country's GDP was created in Kvemo Kartli and agriculture and manufacturing accounted for the largest proportion of created gross added value (49%).

Table 1. Main economic figures (2016)

| Region | GDP (mln. GEL) | Population (1000 people) | GDP Per Capita (GEL) |
|--------------|----------------|--------------------------|----------------------|
| Georgia | 34,028.5 | 3,720.4 | 9,146.4 |
| Tbilisi | 14,297.5 | 1,113.0 | 12,845.9 |
| Kvemo Kartli | 2,348.7 | 426.4 | 5,508.2 |

Source: National Statistics Office of Georgia

Based on preliminary data from National Statistics Office of Georgia in 2017, Tbilisi accounted for 78% of direct foreign investment coming into Georgia (USD 1,467 million), while Kvemo Kartli accounted for 3.4% (USD 64 million). With regards to unemployment levels, these were higher in Tbilisi compared to other regions. In 2017, unemployment in Tbilisi stood at 24.7%, with the figure for Kvemo Kartli being 14.1% - the highest outside the capital.

The Government of Georgia has prepared several regional development programmes in recent years. However, a development strategy does not currently exist for Tbilisi. The 2018-2021 Regional Development Programme emphasises the role of competitiveness in the development of Georgian regions, and the country as a whole.² The document states that the growth of individual regions' competitiveness will have a significant effect on increasing the country's competitiveness, which, in the long term, will help to achieve the goals stated in the 2018-2021 Regional Development Programme. These goals include increasing the per capita GDP, increasing the shares of product and service exports in the GDP, reducing the proportion of the population living below the poverty line at the national level, and increasing the share of investments in fixed assets at the regional level (as a percentage of the national GDP).

The main purpose of this study is to identify and examine competitive economic sectors and subsectors in Tbilisi and the surrounding area, and to devise relevant recommendations for central and local Government, what will promote improving competitiveness of Tbilisi and the surrounding area (hereinafter referred to as sector), which, in turn, will help to increase economic activity and living standards, as well as reduce poverty and unemployment.

² <http://mrddi.gov.ge>

2 METHODOLOGY

The present study is based upon the European Union's Smart Specialisation strategy,² which sets priorities at national and regional levels in order to build competitive advantages by matching the strengths of research and innovation with business needs.

According to the Smart Specialisation methodology, the process of identifying priority areas for the above mentioned region is based upon the following three components:

1. Economic potential
2. Innovative potential
3. Scientific potential

Since the focus of the study is the assessment of regional competitiveness, the research team proceeded to evaluate the economic potential component³ of smart specialisation methodology, which itself consists of the following subcomponents:

1. Domestic competitiveness (specialisation, growth dynamics and relative importance of industrial subsectors), which is measured through employment figures, value added created within the industries and the number of companies engaged in that industry; and
2. International competitiveness, which is measured according to the export potential of the main export product groups.

This research focuses on domestic competitiveness of the economic potential, because there is an absence of information about exports by region and exports by services (i.e. there are no records available to determine what proportion of exports was produced in which region). Furthermore, there are no full records available about the export of services, which makes it impossible to accurately compare and contrast the service sector and the manufacturing sector. Therefore, our research has only focused on the domestic competitiveness of the economic potential, which using by smart specialization methodology is examined by the following variables in the sector:

1. Level of employment;
2. Value added created; and
3. Number of companies.

Based on these indicators, we have used regional analysis methods such as Location Quotient (LQ) and Shift-Share Analysis (SSA) (see Appendix 1: Location Quotient and Shift-Share Analysis).

The analysis includes private (business sector) as it is essential to evaluate where private sector foresees potential, therefore to determine where new enterprises/employment opportunities emerge and value added is created.

² Smart Specialisation Platform, European Commission, <http://s3platform.jrc.ec.europa.eu/s3-design>

³ Joint Research Centre, Supporting an Innovation Agenda for the Western Balkans, Tools and Methodologies, http://publications.jrc.ec.europa.eu/repository/bitstream/JRC111430/2018-04-24_western-balkans-report_online.pdf

Shift-Share Analysis was chosen as the primary method because changes in the dynamics of employment figures and value added form the main observation cornerstone. For example, if the number of people employed in the sector is growing each year, and the rate of growth significantly exceeds the changing trends in employment figures in other sectors, then it points towards this sector's high level of competitiveness, making it more attractive for additional investment. The same principles are used for the value added section. LQ was used as an auxiliary method to determine each sector's regional concentration.

The above mentioned methods were used to identify the most competitive economic activities in the city of Tbilisi and the Kvemo Kartli region (hereinafter referred to as 'sector').

Once the most competitive sector was determined, the next stage of research was to identify the main productive subsectors. Since the National Statistics Office does not record regional employment figures at subsector level, a combined approach was used for this part of the study.

In order to choose the subsectors, we studied the demographic data and sizes of the existing enterprises, examined the statistics for enterprise birth entry and death exit rates in each subsector, and ruled out those sectors where the number of liquidated enterprises exceeded the number of newly established ones. We used the enterprise size (large, medium, small) to take the lowest margins of employment at each enterprise and used them to establish the weights based on which we carried out stratified sampling of the subsector (the number of enterprises operating in the subsector multiplied by the relevant weight).

Having identified the main competitive economic sectors and leading subsectors in Tbilisi and Kvemo Kartli, we used a value chain model ⁴ to study those sectors. (See Appendix 1: Value Chain Model).

In order to eliminate the factors hindering development of the sector identified by Value Chain Analysis (VCA) in the research, we devised recommendations for local and central government representatives.

■ 2.1. Data Collection

Desk research and other qualitative methods were used for data collection purposes. More specifically, desk research was used for LQ and Shift-Share Analysis, while both desk research and field research (in-depth interviews and focus groups) were used to study the subsector value chain.

Secondary Data Collection

The main competitive sectors in Tbilisi and Kvemo Kartli were identified with the help of business sector employment figures and GDP statistics for 2010-2016, the source of which was the National Statistics Office of Georgia.⁵

Business demography statistics such as enterprise birth / death rates and enterprise figures from the National Statistics Office of Georgia were used to identify the leading subsectors.⁶

⁴ Michael Porter - Competitive Advantage (1985)

⁵ http://geostat.ge/?action=page&p_id=211&lang=geo

⁶ http://geostat.ge/?action=page&p_id=2656&lang=geo

Primary Data Collection

Primary data about the identified competitive subsectors was used to study the competitiveness of subsectors at regional level.

Weighting the existing data about subsectors (namely, employment figures) enabled distribution of respondents based on enterprise size,⁷ thus determining how many small, medium and large enterprises were to be surveyed. The enterprises were divided into three strata (small, medium and large), based on which respondents for each stratus were selected randomly.

Focus groups and structured interviews were carried out with leading figures from small, medium and large enterprises. Focus groups and interviews were held with value chain representatives. A total of 30 interviews (17 in Tbilisi and 13 in Kvemo Kartli) and 8 focus groups were held. Each focus group had between 4 and 10 participants.

2.2. Data Storage and Processing

Audio recordings were made during structured interviews and focus group meetings and qualitative data was subsequently examined in detail based on transcripts. Quantitative data obtained from the National Statistics Office of Georgia was processed in accordance with the LQ and Shift-Share Analysis methodology.

After Qualitative data was obtained, it was analysed based on the respondents' suggestions and assessments, information obtained during the interviews and focus groups, as well as existing statistical information.

⁷ Size determined based on the old methodology of the National Statistics Office of Georgia: a large enterprise has an average annual number of employees of more than 100, or an average annual turnover of GEL 1.5 million; a medium enterprise has an average annual number of employees of 20-100, and an average annual turnover of between GEL 0.5 million and GEL 1.5 million; a small enterprise has an average annual number of employees of no more than 20, and an average annual turnover of no more than GEL 0.5 million.

3 IDENTIFYING COMPETITIVE SECTORS

3.1. Shift-Share Analysis

Shift-Share Analysis of Tbilisi's Economy⁸

The Shift-Share Analysis method, which identifies competitive sectors and the factors that determine changes in employment figures in each sector, revealed that the following sectors are competitive in the city of Tbilisi:

- Healthcare and social work;
- Education;
- Agriculture, hunting and forestry;
- Manufacturing;
- Electricity, gas and water supply; and
- Mining and quarrying.

Table 2. Results of Shift-Share Analysis in Tbilisi

| Economic Activity (Sector) | | National Growth Effect (NGE) | Industrial Mix Effect (IME) | Competitiveness Effect (CE) | Quantitative Change in Employment (2016, Compared to 2010) |
|----------------------------|--|------------------------------|-----------------------------|-----------------------------|--|
| 1 | Agriculture, Hunting and Forestry | 1205 | 625 | 1912 | 3742 |
| 2 | Fishing | | | NA | NA |
| 3 | Mining and Quarrying | 221 | -117 | 247 | 351 |
| 4 | Manufacturing | 18383 | -9044 | 993 | 10332 |
| 5 | Electricity, Gas and Water Supply | 8137 | -8229 | 973 | 881 |
| 6 | Construction | 18261 | 2002 | -375 | 19887 |
| 7 | Wholesale and Retail Trade and Repair of Motor Vehicles and Personal and Household Goods | 38112 | 32386 | -4676 | 65823 |
| 8 | Hotels and Restaurants | 7758 | 5410 | -2966 | 10202 |
| 9 | Transport and Communications | 22323 | -11305 | -3580 | 7438 |

⁸ NGE shows how many jobs in the industry in the region can be attributed to the growth of the national economy. IME shows how many jobs in the industry in the region can be attributed to the growth of that industry nationwide. CE shows how many jobs in the industry in the region can be attributed to the competitiveness of that industry in that region.

| | | | | | |
|----|---|-------|--------|-------|-------|
| 10 | Real Estate, Renting and Business Activities | 18778 | 8191 | -200 | 26769 |
| 11 | Education | 6011 | -1314 | 1999 | 6696 |
| 12 | Health and Social Work | 17773 | -10674 | 8265 | 15364 |
| 13 | Community, Social and Personal Service Activities | 8196 | 1926 | -2086 | 8036 |

Source: National Statistics Office of Georgia

Based on the results, the most competitive sector in Tbilisi is the healthcare and social work industry. Between 2010 and 2016, the number of people employed in the aforementioned sector grew by 15,364. It also accounted for the highest number of jobs created (8,265) due to the competitiveness of the sector.

The second-most competitive sector in Tbilisi is education, where the number of people employed in the industry grew by 6,696 between 2010 and 2016, with 1,999 jobs created precisely due to the competitiveness of the education industry in the capital.

The least competitive sectors in Tbilisi are wholesale and retail trade and repair of motor vehicles and personal and household goods, as well as transport and communications.

To determine the competitiveness of the sectors, Shift-Share Analysis was also carried out based on GDP figures. Here too, healthcare and social work represents Tbilisi's most competitive sector. Between 2010 and 2016, GDP in the healthcare and social work sector grew by GEL 543 million. The competitiveness of the aforementioned sector in Tbilisi accounted for the creation of GEL 60 million.

■ 3.2. Primary and secondary sectors (Location Quotient)

Location Quotient (LQ) Results in Tbilisi

The LQ measures the sector's concentration level (i.e. the level to which the sector constitutes a driving force for economic growth). The following main sectors were identified for Tbilisi based on the LQ:

- Electricity, gas and water supply;
- Construction;
- Wholesale and retail trade and repair of motor vehicles and personal and household goods;
- Transport and communications;
- Real estate, renting and business activities;
- Education;
- Healthcare and social work; and
- Communal, social and personal services.

Table 3. Primary and secondary sectors for Tbilisi based on LQ Analysis

| Economic Activity (Sector) | | Number of People Employed in Georgia (2016) | Number of People Employed in Tbilisi (2016) | LQ | Primary/Secondary |
|----------------------------|--|---|---|-----|-------------------|
| 1 | Agriculture, Hunting and Forestry | 12,522 | 4,718 | 0.6 | Secondary |
| 2 | Fishing | 464 | 0 | 0.0 | Secondary |
| 3 | Mining and Quarrying | 8,000 | 602 | 0.1 | Secondary |
| 4 | Manufacturing | 92,538 | 39,552 | 0.7 | Secondary |
| 5 | Electricity, Gas and Water Supply | 20,245 | 15,210 | 1.2 | Primary |
| 6 | Construction | 73,648 | 43,956 | 1.0 | Primary |
| 7 | Wholesale and Retail Trade and Repair of Motor Vehicles and Personal and Household Goods | 170,567 | 113,270 | 1.1 | Primary |
| 8 | Hotels and Restaurants | 37,431 | 20,870 | 0.9 | Secondary |
| 9 | Transport and Communications | 65,219 | 45,423 | 1.1 | Primary |
| 10 | Real Estate, Renting and Business Activities | 66,181 | 49,747 | 1.2 | Primary |
| 11 | Education | 21,970 | 15,343 | 1.1 | Primary |
| 12 | Healthcare and Social Work | 65,557 | 44,076 | 1.1 | Primary |
| 13 | Communal, Social and Personal Services | 32,447 | 19,569 | 1.0 | Primary |

Source: National Statistics Office of Georgia

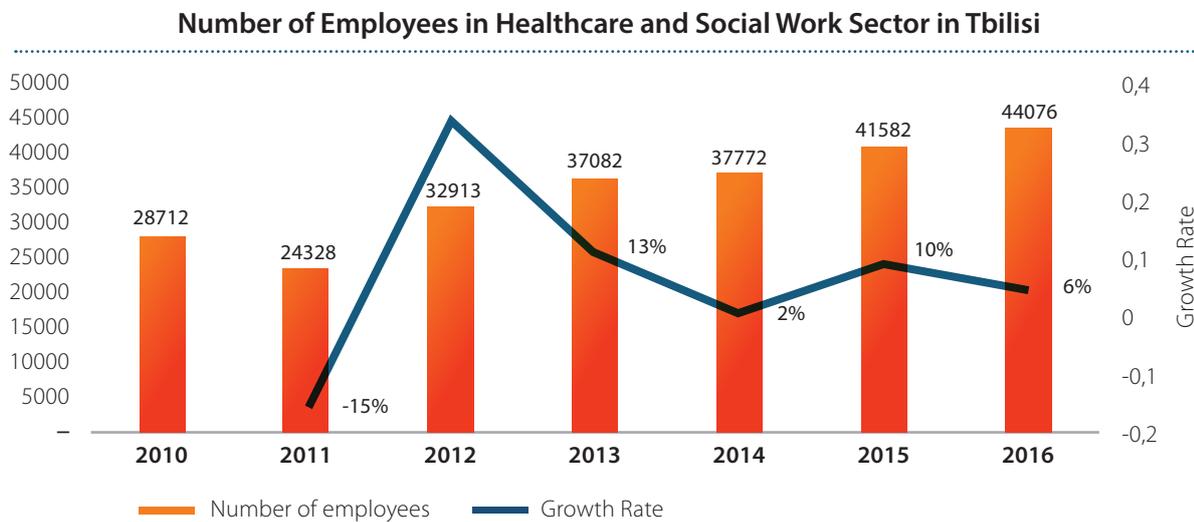
4 ANALYSIS OF THE IDENTIFIED COMPETITIVE SECTORS

4.1. Healthcare and Social Work – Tbilisi

Employment

According to the most recent available data from 2016, 44,076 people were employed in the healthcare and social work sector in Tbilisi, which represents 11% of all people employed in the private sector in the capital. Employment in this sector grew by 54% compared to 2010, at an average annual rate of 8.4%. The highest growth rate during the 2010-2016 period was recorded in 2012, reaching 35.3%. Overall, 99% of the people working in the private healthcare and social work sector in Tbilisi were hired employees.

Figure 1. Number of people employed in the healthcare and social work sector in Tbilisi

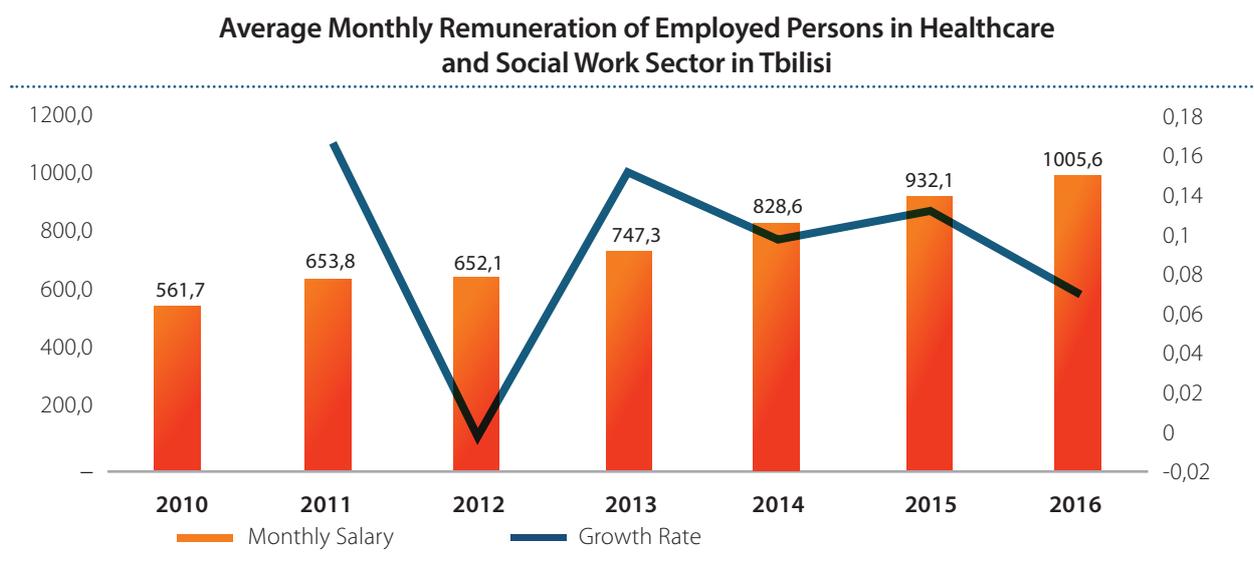


Source: National Statistics Office of Georgia

Average Monthly Salary

The average monthly salary for hired employees in the private healthcare and social work sector in Tbilisi amounted to GEL 1005.6 in 2016, which is 12% higher than the national average for this sector. The average monthly salary in the private healthcare and social work sector in Tbilisi grew by an average of 10% annually between 2010 and 2016. In 2016, it grew by 8% compared to the previous year.

Figure 2. Average salary for hired employees in Tbilisi



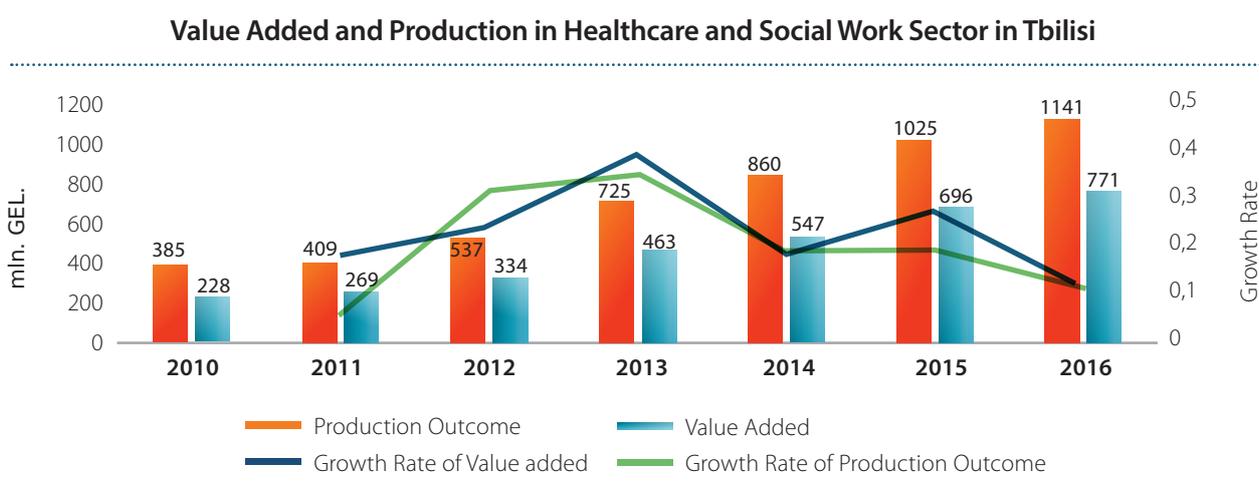
Source: National Statistics Office of Georgia

Value Added and Production

Parallel to the growth in employment and salaries in the private healthcare and social work sector in Tbilisi, we can observe growth in product manufacturing, as the changes made to state programmes led to the increased affordability of medical services in 2016, product manufacturing in the aforementioned sector was worth GEL 1140.6 million. Average annual growth was 20% during the 2010-2016 period. In 2015, the growth rate increased by 11.3% compared to the previous year.

Excluding intermediary consumption, the value added created in the healthcare and social work sector in Tbilisi was GEL 771.1 million in 2016, which is 6.5% of the total value added created in the private sector in the capital. Since 2010, the rate of growth in added value in the private healthcare and social work sector in Tbilisi has been increasing. The average rate of growth in added value in the aforementioned sector during the 2010-2016 period was 23%. In 2015, the growth rate increased by 10.8% compared to the previous year.

Figure 3. Product manufacturing and added value created in the healthcare and social work sector in Tbilisi

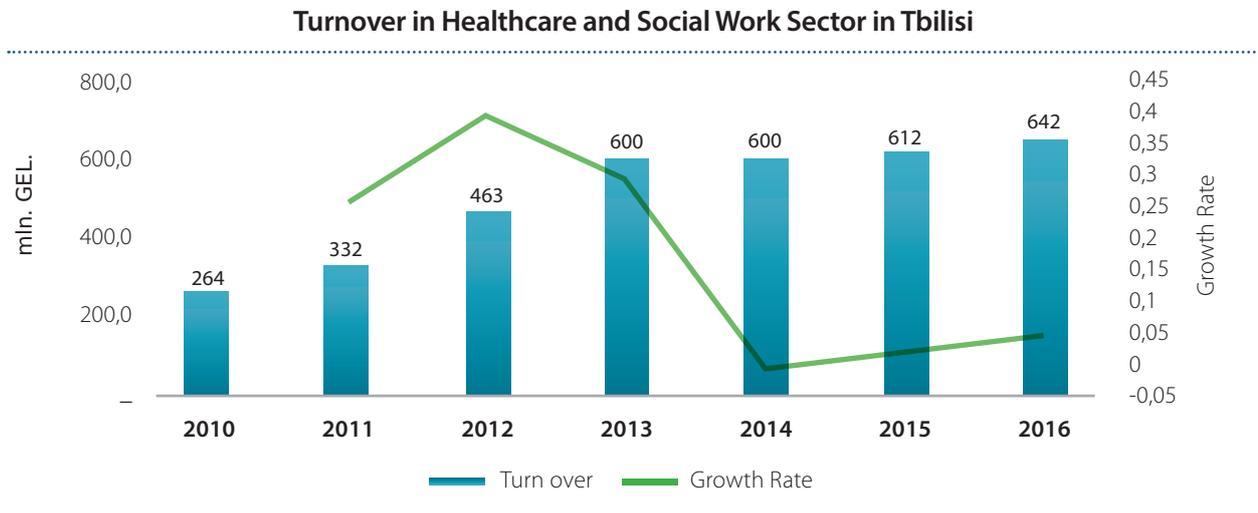


Source: National Statistics Office of Georgia

Turnover

Turnover in the private healthcare and social work sector in Tbilisi has also been characterised by growth. In 2016, turnover in the aforementioned sector amounted to GEL 641.8 million, which is 4.9% higher than the previous year's figure, and amounting to 1.4% of the total turnover in Tbilisi's private sector. It is also worth noting that turnover in the healthcare and social work sector does not exceed the value added created in the sector, since the turnover figure does not include state subsidies.

Figure 4. Turnover in the healthcare and social work sector in Tbilisi

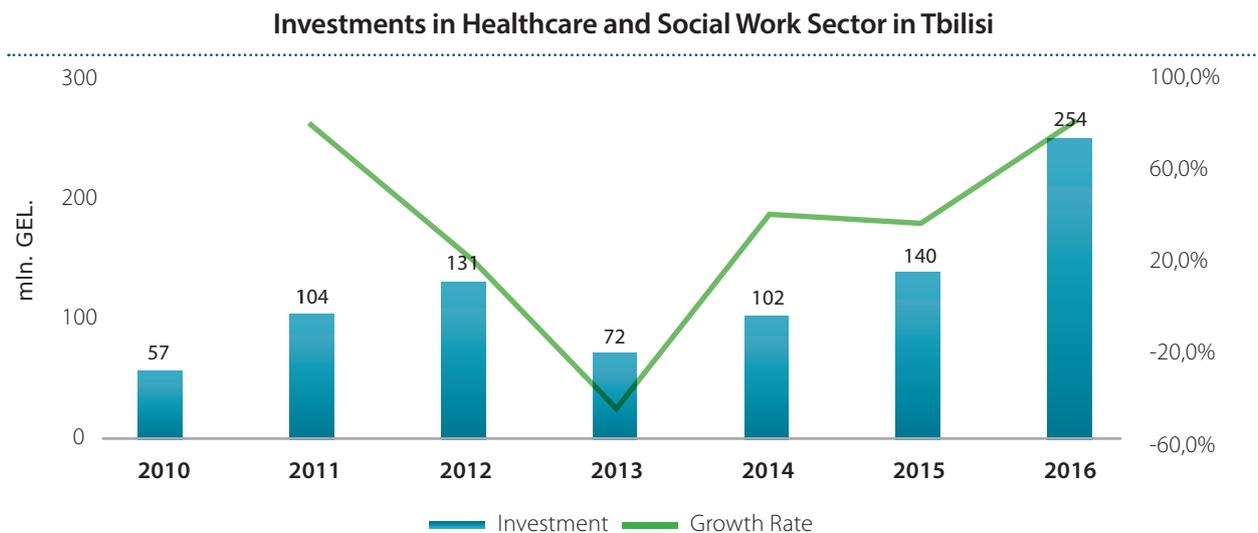


Source: National Statistics Office of Georgia

Investments⁹

Investments in the healthcare and social work sector in Tbilisi amounted to GEL 253.9 million in 2016, which is 7.4% of the total investment put into Tbilisi's private sector. Growth in the volume of investments in the private healthcare and social work sector in Tbilisi was particularly strong in 2012 and 2016 (82.3% and 82%, respectively).

Figure 5. Investments in the healthcare and social work sector in Tbilisi



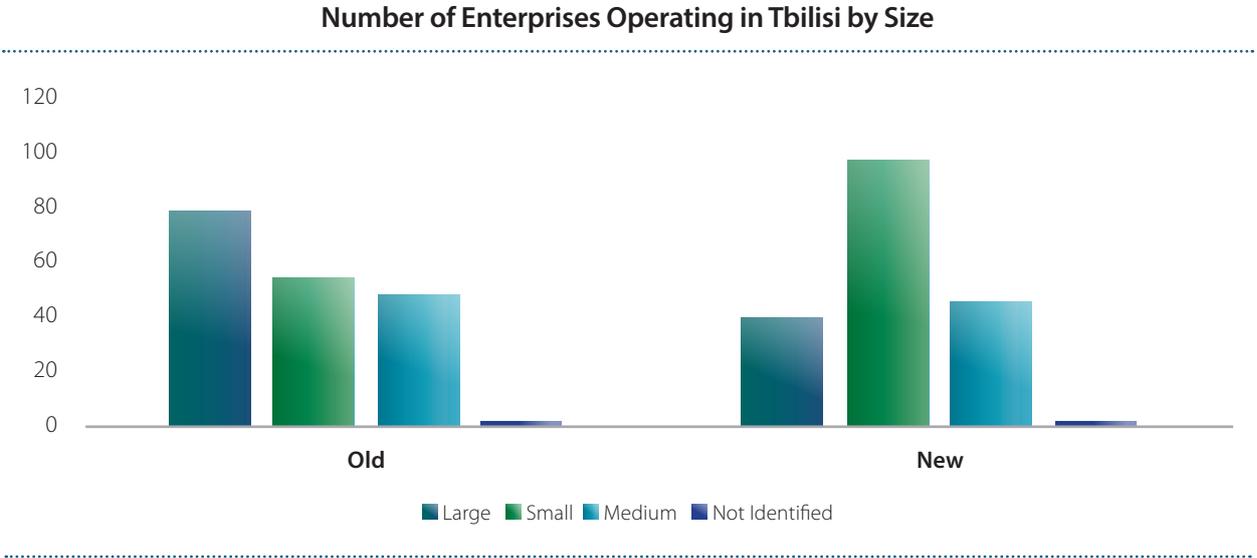
Source: National Statistics Office of Georgia

⁹ Investments in fixed assets. Includes both direct foreign and domestic investment.

Enterprises Operating in the Healthcare and Social Work Sector in Tbilisi

As of April 2018, there are 185 hospitals¹⁰ operating in the medical service sector in Tbilisi. The majority of these (43%) are large hospitals, 29% are medium-sized hospitals, and 26% are small hospitals.¹¹

Figure 6. Number of enterprises operating in Tbilisi by size



Source: National Statistics Office of Georgia

¹⁰ Hospitals according to economic classifier (NACE 1) include short- or long-term hospital activities, i.e. medical, diagnostic and treatment activities, of general hospitals (e.g. community and regional hospitals, hospitals of non-profit organisations, university hospitals, military-base and prison hospitals) and specialised hospitals (e.g. mental health and substance abuse hospitals, hospitals for infectious diseases, maternity hospitals, specialised sanatoriums)

¹¹ Based on the National Statistics Office of Georgia's old methodology of measuring enterprises

5.1 Identifying Tbilisi's Most Competitive Sub-sectors

Based on the Shift-Share Analysis for Tbilisi, and having identified healthcare and social work as Tbilisi's most competitive sector, we then determined the most competitive subsectors. According to NACE-2 classification, the healthcare and social work sector can be divided into the following three subsectors:

1. Healthcare activities;
2. Residential activities; and
3. Social service activities (excluding housing).

Two of these subsectors – residential activities and social service activities (excluding housing) – are insignificant in terms of numbers, turnover and employment figures. Furthermore, the dynamics of enterprise birth rates in these subsectors are characterised by falling numbers, while the number of enterprise deaths is increasing. Therefore, the two aforementioned subsectors were ignored for the purposes of this study, and healthcare activities were chosen as the main subsector of research.

Table 4. Enterprise birth and death rates in Tbilisi by healthcare and social work activities in 2012-2017

| Enterprise birth and death rates in Tbilisi by healthcare and social work activities in 2012-2017 (as of 1 June 2018) | | | | | | | | |
|---|---------------------------------------|-------------------|------|------|------|------|------|------|
| Activity Code | Activity (NACE Rev. 2) | | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
| Q | Healthcare and Social Work Activities | Enterprise Births | 237 | 213 | 155 | 140 | 118 | 111 |
| | | Enterprise Deaths | 40 | 2 | 79 | 94 | 127 | 129 |
| Q 86 | Healthcare Activities | Enterprise Births | 205 | 156 | 138 | 126 | 106 | 93 |
| | | Enterprise Deaths | 38 | 2 | 53 | 67 | 95 | 102 |
| Q 87 | Residential Care | Enterprise Births | 1 | 4 | 3 | 0 | 0 | 6 |
| | | Enterprise Deaths | 2 | 0 | 2 | 10 | 7 | 5 |
| Q 88 | Social Service Activities | Enterprise Births | 31 | 53 | 14 | 14 | 12 | 12 |
| | | Enterprise Deaths | 0 | 0 | 24 | 17 | 25 | 22 |

Source: National Statistics Office of Georgia

The next stage of analysis of the healthcare activities subsector involved identifying its largest component group. Healthcare activities were sub-divided into the following three groups: 1) hospital activities; 2) medical and dental practices; and 3) other healthcare activities. As a result of weighting, it was determined that hospital activities constitute the largest group in this subsector, therefore hospital activities were further analysed by the study team.

According to the GeoStat database, there are 185 establishments operating in the hospital field. After weighting the employment figures, it was established that 83% of the respondents represented large establishments, while the remaining 17% represented medium-sized establishments. A simple random se-

lection method was used to choose 14 respondents among large establishments, and three respondents among medium-sized establishments. Their distribution by property type is presented below:

Table 5. *Distribution of selected enterprises by property type*

| | Large Enterprise | Medium Enterprise |
|--------------------------|------------------|-------------------|
| Local Private Property | 11 | 3 |
| Mixed Property | 1 | 0 |
| Foreign Private Property | 2 | 0 |

Focus group meetings were held with the main participants of the value chain. A questionnaire was compiled for each of them in advance. Participants of the focus group meetings included the following groups:

1. Economists;
2. Pharmacy representatives;
3. Patients;
4. Suppliers of personnel: academic staff and administration from medical universities;
5. Medical university students (both Georgian and foreign);
6. Medical university graduates (Georgian);
7. Doctors; and
8. Private insurance company representatives.

■ 5.1.1. Analysis of Tbilisi's Most Competitive Subsector

Overview of Economic Figures

State spending on healthcare has increased in recent years. According to the data from the Ministry of Finance of Georgia total of GEL 982.5 million was spent on healthcare in 2016, which constitutes a 14.9% increase compared to the previous year. Based on data from 2017, spending on healthcare took up 10.3% of the state budget while accounting for 2.8% of the country's GDP.

In spite of the aforementioned growth, Georgia is among the lower-ranked countries in Europe with regards to share of spending on healthcare within the total state spending. According to the World Health Organization's data for 2015, the share of state spending on healthcare within total spending for Georgia was 10.5%, compared to 25.2% in Switzerland, 21.4% in Germany and 19.0% in Netherlands.

The number of hospitals in Georgia has been growing since 2012, amounting to 272 units by the end of 2017. The number of beds, doctors and regular medical personnel in the hospitals has also been growing.

Overview of the Healthcare Models in Georgia in 1995-2017

Until 1995, the Georgian healthcare system was based on the Soviet-era 'Semashko model,' where management, administration and funding were centralised.

Since 1995, healthcare has become decentralised. Public healthcare services were established within local governing bodies, funding the public healthcare programmes.

Since 2006, government reforms has aimed to privatize existing state establishments in the healthcare system, with existing universal programmes being replaced by target group-oriented programmes. Hospital privatisation began in 2007, while private insurance firms became involved in state healthcare programmes. Based on the reforms, individuals could use a voucher to become insured by the insurance company of their choice. However, this freedom of choice was removed in 2010, and was replaced by mandatory three-year insurance with companies selected by the Government based on regional principles.

The next stage of reforms saw the introduction of a universal healthcare programme covering the entire population in 2013. Changes to this programme were introduced in 2017, with four target groups of beneficiaries being identified:

Group I: individuals with annual income of GEL 40 000 or more. This group no longer benefits from the universal healthcare programme;

Group II: individuals with a monthly income of more than GEL 1000, whose annual income does not exceed GEL 40 000. If the cost of medical care for these patients does not exceed GEL 1000, then the costs are covered entirely by the patients themselves, while in cases where the costs exceed GEL 1000, they are covered by the State.

Group III: individuals with a monthly income of less than GEL 1000, individuals without regular employment and self-employed individuals whose income is not evident to the State. For this category of patients, medical costs in excess of GEL 500 are covered by the State.

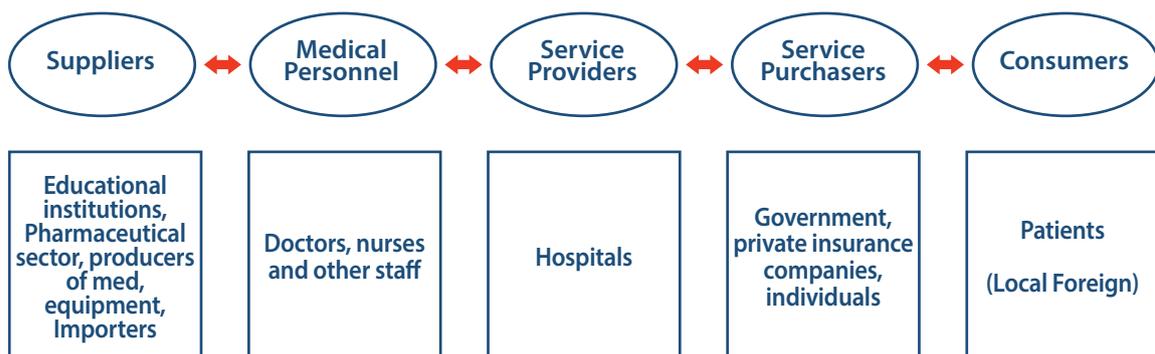
Group IV: children aged 0-5 years, youths aged 6-15 years, students, teachers, pensioners, disabled individuals and socially vulnerable persons. This group has retained all services provided by the universal healthcare programme.

6 VALUE CHAIN DESCRIPTION

6.1. Value Chain of Hospital Activities

This study has identified the following links in the value chain of hospital activities:

1. Hospital service beneficiaries / patients;
2. Organisations / individuals procuring / funding the services (the Government, insurance companies or individuals);
3. Medical personnel;
4. Suppliers:
 - Suppliers of medical equipment;
 - Manufacturers and suppliers of pharmaceutical products (pharmacies);
 - Suppliers of personnel (medical educational facilities).



Regulators

Regulatory Agency: Disease Control Center, Social Service Agency, Ministry of Internally Displaces Persons from the Occupied Territories, Labour, Health and Social Affairs of Georgia

7.1. Interview Results

Hospitals (Administrators)

Interviews revealed that the process of new players entering the market is still on-going, with there being no state barriers to those who wish to enter the market. It is particularly easy for establishments offering outpatient services to enter the market, as the technical regulations for them are quite liberal. Establishments offering stationary services are relatively more difficult and expensive to set up.

Hospitals are competing against each other in terms of pricing, technologies and qualified staff (hospitals are frequently chosen by patients due to the presence of specific doctors).

Location is important for hospitals with emergency departments, as patients requiring emergency treatment are taken to the most geographically accessible hospital. It is also worth noting that there is evidence of vertical integration on the market, with large medical groups and holdings uniting almost all participants of the value chain (hospitals, insurance firms, pharmacies, etc.). Therefore, some of the respondents see such large players/holdings as a potential threat due to the risk of monopolisation of the industry.

Unlike many other service sectors, hospital activities do not require special promotion. Therefore, representatives from this industry rarely advertise their services in the media. Most of them use social media, as well as participation in various events and initiatives, as means to increase awareness about themselves and their work.

The average profit margin for most hospitals is 10-12%, while average annual turnover exceeds GEL 1.5 million. The majority of the surveyed hospitals are at the growth stage of their life-cycle. Most of them are planning to expand their profile and add new services, since procurement of medical services through state programme allocations is growing. A small number of the respondents believed that their establishments are at a stage of maturity. However, all of them are planning to continue operating in the industry.

The local population accounts for the majority (90-95%) of medical service users, although the number of foreign patients has been growing in recent years. The majority of the surveyed hospitals serve an average of approximately 20,000 patients per year.

The number of employees in each hospital ranges between 300 and 1200. Hospital representatives themselves believe that, in many cases, their personnel require further training / improvement in qualifications, which is often difficult to accomplish due to a lack of time and resources. Some hospitals train their staff on site, or fund their participation at international conferences. There is a need to improve both medical qualifications and technical skills. Against the background of continuous technological advancement, it is important to ensure that staff are trained to use the latest equipment and technologies.

Hospitals are satisfied with their current medical equipment and technologies. However, technological advancement requires them to continuously upgrade their equipment. Most hospitals do not have their own research and development (R&D) unit, with a lack of financial resources being the most commonly cited reason. Nevertheless, some of the medical establishments are involved in various kinds of medical research such as blind study of medicaments, academic activities, and publishing scientific articles.

When in need of financial resources, most medical establishments turn to banks or investors. Some hospitals use loans to purchase/renovate buildings, upgrade infrastructure or purchase equipment. The majority of respondents claimed that they have not had any difficulties with repaying their loans.

The main weakness of hospitals cited by respondents was a lack of qualified personnel. Most hospitals are staffed by medical personnel who work at two or more facilities simultaneously. Most of the respondents admit that medical personnel are frequently being enticed to switch employers, while those who are employed at several facilities are often overburdened, which affects the quality of their service. There are staff shortages in many areas/professions, such as nurses, anaesthesiologists, emergency medics, health economists and health managers, and this is being cited by most hospitals as the gravest threat facing the sector. According to them, failure to change the situation and address the issue of staff shortages may result in the country being left without any doctors in certain fields in a few years.

Another problem being cited by the respondents is the increasing number of small clinics that satisfy the licensing conditions but have a shortage of beds and qualified staff, putting patients' health under risk in the process.

As for state programmes and regulations, the universal healthcare programme, which has been operating since 2013, is being perceived by majority of hospitals as both an obstacle and a strength of the healthcare sector simultaneously. The pricing scheme of the universal healthcare programme is being cited as an obstacle by the survey participants, since it was developed on the basis of 2012 research, and has not been significantly revised since then. Thus, while medicaments, equipment and other necessary hospital materials become more expensive, the money which the State pays to the hospitals for their services in accordance with the aforementioned pricing scheme remains largely unchanged. At the same time, the universal healthcare programme is being perceived by most of the hospitals as a step forward, and as an advantage which many other countries do not have. According to the majority of respondents, the existence of universal healthcare has made medical services financially affordable and physically accessible for patients and has created a stable environment for investors.

■ 7.2. Focus Group Results

Pharmacy Representatives

Focus group participants named PSP, GPC, Pharmadepot and Aversi as the main players on the pharmaceutical market, with Impex also being cited as a growing company. According to pharmacists, the pharmaceutical market is currently facing the following problems:

1. The price of medicines has largely increased in recent years, creating difficulties for consumers. However, certain medicines have become cheaper. It was also noted that consumer behaviour is difficult to gauge on the basis of price changes, since patients have to purchase the required medicine at the price set by the pharmacies.
2. A large proportion of the medical products on sale in pharmacy networks are imports.
3. Consumers are mainly interested in the price of medicines, since a large proportion of the population struggles financially. However, the manufacturer, the country of origin and quality of the medicine are also of interest to consumers.
4. The main problem cited with regards to customer relations is inaccurate prescriptions (excessive amount of prescribed medicines, excessive dosages and inaccurate names of medicaments). There have been cases of medicines of the same kind being prescribed under different brand names, as well as cases of excessive polypharmacy (concurrent use of multiple medicines).

As for standards, some respondents insist that medicines are not being allowed onto the market unless they comply with the Good Manufacturing Practices (GMPs).

Generally, pharmacy employees do not have accurate information about the precise nature of the inspections which the medicines have to undergo prior to crossing the border into Georgia. Germany, Turkey and (to a lesser degree) India were cited as some of the main countries of origin of medicines on the Georgian market.

Patients

The following problems were identified by the focus groups of patients:

1. Regular check-ups are only being undertaken by individuals who are suffering from chronic diseases that require continuous monitoring and control. For those who consider themselves healthy, even those who are insured do not undergo regular check-ups and only go to hospital in case of an emergency. Reasons commonly cited for not getting a check-up include lack of time and money, bureaucracy, lack of trust, lack of punctuality and professionalism displayed by doctors, and frequent cases of misdiagnosis. Several respondents cited personal experiences of being falsely diagnosed with serious illnesses following tests, only to find out later that their conditions were substantially less threatening, and could have been treated easily with common medicines. Such episodes can be very harmful to the patient and create an environment of public mistrust towards the system.
2. Only a small number of participants are privately insured. Many respondents stated that although they are happy with the terms of their private insurance, they all had instances when in order to avoid bureaucratic delays and receive treatment quickly, they had to contact non-participating hospitals directly and largely pay for the treatment themselves. All other participants are enrolled in the universal healthcare programme, although two of the respondents have previous experience of being privately insured.
3. The majority of the respondents cited the need to visit a private doctor as the main problem associated with private insurance. This is due to the fact that private doctors have numerous patients and are neither able to see them promptly nor devote the necessary amount of time and attention to them. Therefore, getting a consultation with a specialist is a time-consuming formal process. It has also been noted that patients visiting non-participating hospitals (due to the fact that the necessary treatment cannot always be obtained in a participating establishment) have to pay in full for their treatment themselves, and are only reimbursed after presenting certain documents, which causes them a considerable amount of discomfort and difficulty.
4. Among the most serious existing problems cited by the respondents are the indifference of the doctors towards patients, false diagnoses and artificially enlarged lists of prescribed medicines, as well as a lack of basic facilities in some hospitals (damaged buildings, untidy offices, poor sanitary conditions, etc.), lengthy processes and doctors' chaotic schedules.
5. Most of the respondents stated that there are highly professional doctors and well-equipped hospitals in Georgia, but they all agreed that the quality of the treatment is negatively influenced by doctors' commercial interests, examples of which include prescribing an unnecessarily high amount of medicines, manipulating patients (e.g. selectively choosing when parents should pay for a child's medication), indifference of doctors toward patients, and the presence of ineffective medicaments on the market.
6. According to the respondents, challenges in the Georgian healthcare sector include the quality of services/treatment, poor sanitary conditions, poor infrastructure and nebulous bureaucratic processes. A respondent who only visits hospital in Georgia when absolutely necessary stated that he used to regularly visit hospital for routine check-ups when living abroad, as this process consumed considerably less effort, time and financial resources than in Georgia.

The patients stated that they choose a hospital based on their specific needs, ultimately selecting the establishment with the 'best possible' specialists.

The respondents receive information about necessary treatment from friends and family, and base their choices on their past experiences and recommendations.

While receiving treatment in a hospital, respondents have the following priorities: quality of service, the doctor's attitude towards the patient, acceptable facilities and well-functioning infrastructure.

Most respondents believe that in order to improve the situation in the sector, it is necessary to weaken the commercial interests of those who work in the medical field, to improve the quality of services, to develop infrastructure, to enhance the qualifications of staff and to raise public awareness about the state programmes that are already operating in the healthcare sector.

Medical Universities: Suppliers of Personnel

Interviews revealed that one of the most serious problems facing the country's medical sector today is the shortage of qualified personnel.

Personnel for the medical field are prepared and supplied by educational facilities, representatives of which have identified the following obstacles limiting qualified personnel in Georgia:

1. The existing certification / licensing system. Doctors must satisfy certain standards and obtain a license in order to be able to practice medicine. To obtain the license, they must pass an oral exam which consists largely of tests known in advance (75-80%), with the remaining part (20-25%) consisting of unknown tests. This allows doctors to memorise the tests to obtain the necessary certificate. Doctors are usually hired on the basis of that certificate, rather than being further tested on their knowledge, leading to not suitably knowledgeable personnel being hired by medical establishments.
2. Brain drain. Many young people in the medical field are leaving the country, meaning that the market faces a shortage of qualified personnel.
3. Lack of continuous education. The medical field is constantly developing and progressing. For doctors to keep up with the pace of innovation and modern medicine, they must continuously develop, learn and attend conferences. However, since doctors' income is determined by their workload, they prefer to receive more patients rather than devote time to develop themselves and learn about innovations in the medical field.
4. Absence/severe shortage of medium and low-level medical personnel. It would be preferable to have a smaller number of doctors, provided that they are assisted by an adequate number of staff such as paramedics and highly qualified nurses. This way, doctors would not have to perform administrative duties, and work assignments would be distributed in a more effective manner.
5. Lack of opportunities for professionally educated personnel to professionally develop themselves. For example, nurses do not have the opportunity of furthering their knowledge and professional development, resulting in a lack of interest towards their field of work. Nursing education is limited to college, and furthering their education would require prospective nurses to start from scratch and take university exams.
6. The practice of operating bioethics councils and/or conciliums is weak or non-existent in medical establishments, preventing the implementation and development of evidence-based medicine.

Medical Students and Graduates

Following on from hearing about the universities' concerns about the shortage of qualified personnel in the country, interviews with students helped to identify the problems that prevent young people from obtaining sufficient medical education:

1. Lack of modern literature in Georgian language. All of the existing Georgian-language medical literature is outdated. Students can only read up-to-date literature if they speak a foreign language (English or Russian, in particular).

2. Lack of illustrative material. Obtaining medical education is difficult without appropriate visual aids, such as models or electronic displays.
3. Lack of practical work in hospitals. Although medical establishments are open to students and the latter's educational programmes include practical work, only a short period of time is devoted to this practice, which is not enough to provide medical students with the necessary experience.
4. Public attitude towards trainee students. Patients often do not wish to be examined by trainees, or to tell them about their cases, or even to allow them to be present in the same room. The level of public awareness on how important it is for trainee students to attend real life cases is low.
5. Unmotivated lecturers, many of whom have neither the inclination nor the motivation to pass on their knowledge and share their experience with students.
6. Shortage of places allocated for residency. The number of graduate students significantly exceeds the number of places available for residency. As a result, some of the students are forced to either continue their studies abroad or remain as junior doctors on lower salaries.
7. There is a tendency among students to choose the medical professions that are associated with less responsibility and more comfort, rather than choosing a profession that would require them to work around the clock, with even a single mistake being potentially fatal for the patient. This tendency leads to a shortage of specialists in certain fields.

Doctors

Majority of doctors view the dynamics of development of the healthcare sector positively, but believe the development to be asymmetrical, meaning that some areas of the sector are developing, while others are stagnating. There are areas that do meet the needs of patients, but there are also specialist fields in which Georgian patients are currently only able to obtain high-quality services abroad.

Most of the doctors positively assess the universal healthcare programme, as well as the state programmes designed to manage oncological diseases, dialysis and hepatitis C. The doctors believe that public access to healthcare has improved, together with the quality of services and hospital infrastructure.

Doctors cite the following problems that exist in the healthcare sector:

1. A rapid increase in the number of underqualified medical establishments on the market. Doctors believe that lax regulations allow the establishment of new hospitals that provide patients with low-quality services at lower prices.
2. Unmotivated doctors – low pay is cited as the main reason for a lack of motivation.
3. Shortage of qualified personnel in various areas of healthcare.
4. Lack of mandatory continuous professional development.
5. Poorly developed professional associations.
6. Shortage of nurses – doctors highlight the importance of the nursing profession. The low numbers and low salaries, as well as a general lack of appreciation of the nursing profession, are regarded as major weaknesses in the healthcare sector.
7. Patients' negative attitude towards doctors.

8. Unrealised potential of medical tourism – doctors believe that Georgia has the potential to develop as a tourist destination in certain medical fields, such as cardiac surgery, stomatology, plastic surgery, children’s oncohematology and hydrotherapy.
9. Lack of professional independence-most of the times doctors’ activities are determined by the business interests of the medical establishments.
10. Lack of a professional activities’ insurance tool.

Insurance Companies

Generally, Insurance firms view the development of the healthcare sector positively due to improved public access to healthcare, as well as improved hospital infrastructure. However, they believe that the existing system has the following problems:

1. The “chaotic” mushrooming of smaller hospitals which offer a low quality of service. Insurance firms believe that the lack of regulations on entry to the healthcare market has allowed new clinics to multiply in a chaotic manner, often offering patients sub-standard levels of service.
2. Weak primary healthcare.
3. Lack of a control mechanism. Insurers state that the absence of a control mechanism allows hospitals to inflate prices, which increases costs for the Government and leads to higher costs for patients. In the past, insurance firms acted as regulators. However, under the current system, hospitals are no longer dependent on the insurers, with some insurance companies themselves owing hospitals. Therefore, government interference in this matter and establishment of a control mechanism is regarded as urgently needed. Insurance firms state that allowing the universal healthcare programme to be administered by the insurers would reduce costs by at least 30%.
4. Increased corporate insurance costs. Insurance companies claim that the current healthcare system disadvantages individuals who have corporate insurance. According to the insurers, market prices do not currently exist, with prices being determined and set by the Government. However, hospitals then set different prices for insurance firms, often significantly exceeding the prices offered by the Government.
5. A rapid increase in the number of multi-profile hospitals. Insurance firms state that the current healthcare system encourages hospitals to adopt multiple profiles. Due to a lack of personnel, this has a negative effect on the quality of service.
6. Lack of commercial interest from the hospitals towards the insurers. At present, the Government (through the universal healthcare programme) is the main subject of interest for the hospitals. The latter do not see insurance firms as lucrative partners. While in the past hospitals were doing everything to become service providers for the insurance companies, now their attitude has changed and it is the insurers who have to make concessions.
7. Shortage of qualified personnel. Insurance companies believe that the existing education system has to be improved, while the tests for doctors ought to be changed. The companies emphasise the importance of private partnerships in the process of enhancing staff qualifications.

Economists

Economists provided the following observations and recommendations regarding the reforms that have been carried out during the last 10 years and their results:

1. The healthcare sector is developing, although there are certain areas such as primary healthcare, diagnostics, post-surgical recovery and others, which are underdeveloped due to a lack of education, high-tech equipment and finances;
2. As a result of the reforms carried out since in 2012, healthcare became affordable and physically more accessible, although the standards of treatment have fallen. This, in turn, has led to an increasing number of Georgians travelling abroad for treatment in areas such as cardiac surgery in recent years;
3. Primary healthcare is the weakest area of the national healthcare system. One of the problems here concerns the number of personnel trained as family doctors and their distribution across the country. This problem is attributable to a lack of adequate equipment in primary healthcare establishments (polyclinics), as well as the absence of labs that provide high-quality service. Concentration of funds in the universal healthcare programme also creates an obstacle to the development of primary healthcare.
4. The pharmaceutical market is oligopolised. Hospitals are owned by commercial and pharmaceutical firms. Three companies dominate the local market: Aversi, PSP, and the Georgia Healthcare Group.
5. Programmes aimed at elimination of hepatitis C and establishing a cancer registry are viewed positively by economists. In this regard, patients have gained access to medicines that were previously unavailable on the market.
6. The universal healthcare programme model established as a result of the changes introduced in 2017 is also viewed positively, although certain problems still persist. It would be beneficial to only enrol individuals on lower incomes and target groups in the programme, while offering insurance packages or similar services to others.
7. The state control mechanism of the universal healthcare programme is very weak. It would be beneficial to divide the programme budget among target groups in the form of insurance policies and hand it over to insurance firms. Such a scheme could be regarded as a good example of a monitoring and quality control mechanism.
8. A health information system ought to be implemented.
9. Developing the insurance market may be the best route towards improving primary healthcare. Risk management mechanisms can be used to optimise high-tech expenses through the function of a high-quality and affordable primary healthcare link.
10. Georgia has potential to develop medical tourism in certain fields, such as stomatology, plastic surgery, hydrotherapy, rehabilitation services and reproductive health. Enhancing medical tourism requires improving the quality of service and enhancing staff qualification.

8 SWOT ANALYSIS

Based on the results of the interviews and focus groups were determined strong and weak sides of the value-chain in the hospital sector, also those opportunities using of which will promote better functioning of mentioned sector. Furthermore, were identified those threats which may hinder increase of competitiveness of the value chain in the hospital sector.

Table 6. SWOT Analysis of Hospital Value Chain

| • Strengths | • Weaknesses |
|---|--|
| <ul style="list-style-type: none"> • High-quality services in hospital sector; • High quality of infrastructure in hospital sector compared to neighbouring countries; • Business-oriented environment; • Standards established at pharmaceutical market; • Health insurance “know-how” of the private insurance sector. | <ul style="list-style-type: none"> • Low qualification level of medical personnel; • Shortage of qualified staff in hospital sector; • Asymmetry in staff qualification and composition (uneven proportion of doctors and nurses); • Weak Regulation and low level of its implementation; • Non-existence of R&D Units; • Current certification/licensing system of medical personnel; • Non-existence of continuous education. |
| • Opportunities | • Threats |
| <ul style="list-style-type: none"> • Increased demand on health tourism worldwide; • Implementing a health information system; • Upcoming changes for professional education level (e.i. new type of nurses) | <ul style="list-style-type: none"> • Brain drain; • Monopolisation of the value chain in hospital sector (due to presence of large corporations); • Oligopoly of pharmaceutical market; • Unstable finances in mid a long-term perspective in the value chain of the hospital sector. |

9 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The interviews and focus group meetings identified several problems that hinder the development of hospitals and connected actors and the enhancement of the sector's competitiveness.

PROBLEM #1. SHORTAGE OF QUALIFIED PERSONNEL IN HOSPITAL SECTOR

The evident shortage of qualified personnel on the market in hospital sector is caused, on the one hand, by a flow of qualified individuals out of the country and, on the other hand, by the low level of qualification of existing staff.

The low level of personnel qualification in the country can be explained by the current licensing system for doctors, which is based entirely on theoretical knowledge and does not allow for the doctor's competence to be assessed. Furthermore, the country's education system cannot supply the market with adequately qualified personnel. Another reason is the absence of a mandatory continuous professional education system and the weak role played by professional associations in this regard.

Recommendations

1. It would be favourable, doctors to be issued licenses based not only on theoretical knowledge but on practical skills as well.
2. It would be favourable, for educational programmes to be improved, and a mandatory continuous professional education system to be introduced.
3. It would be favourable, for students to be given the opportunity to develop their practical skills and learn theory. To this end, the involvement of hospitals should be strengthened, and practical education/training programmes should be developed on site. The number of bachelor's degree students should be brought into line with the number of places available for residency.
4. It would be also favourable to devise public-private partnership (PPP) model to ensure organisation of the system for public and private medical service providers in order to develop residential and continuous professional education.

PROBLEM #2. UNMOTIVATED MEDICAL PERSONNEL

Reasons for the low motivation of the existing high-level medical personnel include the following:

1. Unstable and inadequate income;
2. Limited professional development;
3. Shortage of medium- and low-level medical personnel (nurses, assistants, ambulance workers) and their qualification, which ought to optimise the workload of high-level medical staff reflected in time management, income growth and professional development.

Recommendations

1. A continuous professional education system must be implemented to classify the medical personnel based on their qualification levels
2. Popularisation of the medium- and low-level medical professions must be improved, and state support must be obtained to develop professional programmes and regulate the labour market (determine the ratios between medium/low and high-level medical staff; introduce a remuneration scheme that corresponds to the staff's qualification levels).

PROBLEM #3. SHORTAGE OF SPECIALIST MEDICAL STAFF IN CERTAIN FIELDS

There is a lack of policy-based motivation for students to study the professions where personnel shortages exist. Professional associations and medical service suppliers have no role in this area.

Recommendations

1. Develop a policy of encouraging students to study professions where staff shortages exist, and devise an appropriate strategy and motivation plan.
2. Establish a format of cooperation among professional associations, medical service suppliers and the Government.

PROBLEM #4. WEAK REGULATION AND ITS LOW IMPLEMENTATION LEVELS

1. Establishing a business in the healthcare sector is easy due to the liberal technical regulations. This creates an environment where many new medical establishments are entering the market, which may have a negative impact on quality-oriented competition. Furthermore, the weak regulation of the current healthcare funding model lead to an increase in healthcare costs in the form of spending on non-essential medical services.
2. There are numerous threats attached to the currently weak regulation, particularly against the background of vertical integration in the form of large medical groups which unite nearly all members of the value chain (hospitals, insurers, pharmacies, universities, etc.). Apart from those considering vertical integration tendencies as one of the problems can emerge polypharmacy and polypragmasia issues.

Recommendations

1. In order to ensure the necessary quality of service, the optimisation of costs and the affordability of medical services, it is necessary to establish an orderly regulatory system which will, on the one hand, support healthy competition in the sector and, on the other hand, enable provision of effective, high-quality services.
2. The regulatory system must resolve the issues of polypharmacy and polypragmasia, thereby ensuring that high-quality medical services are provided.

PROBLEM #5. WEAKNESS OF THE PRIMARY HEALTHCARE SYSTEM

The weakness of primary healthcare increases the total costs in the sector, as diagnosis and prevention of diseases are not carried out on a timely basis, and chronic diseases are not managed in a cost-effective manner. As a result, a large proportion of the healthcare sector's revenue is spent on managing the issues which the primary healthcare system is unable to prevent, instead of spending these funds on more vital services.

Recommendation

Establish a clear financial motivation to improve primary healthcare, which would ensure provision of high-quality, affordable primary healthcare services.

PROBLEM #6. LACK OF INFORMATION ABOUT PATIENTS' MEDICAL HISTORY

Hospitals often do not have access to information about a patient's medical history and results of past tests/examinations, which makes the process of managing patients more difficult and expensive.

Recommendation

Implement a health information system (e-health), which would facilitate provision of medical services and raise the quality of service at the same time.

PROBLEM #7. UNREALISED POTENTIAL IN MEDICAL TOURISM

Georgia has strong potential to establish itself on the health tourism map due to the country's geographic location and natural resources. Potentially significant areas include stomatology, plastic surgery, hydrotherapy, rehabilitation and reproductology.

Recommendation

Popularise medical tourism at state policy level.

PROBLEM #8. PROBLEMS ASSOCIATED WITH THE FUNDING / REMUNERATION SYSTEMS

Bureaucratic procedures in the state programme remuneration system cause a problem with regards to financial management (managing the flow of funds, fulfilling obligations towards third parties, re-investing funds) in medical establishments.

Recommendation

The existing state programme remuneration system must be evaluated and bureaucratic mechanisms must be reduced as much as possible.

Recommendations to enhance the competitiveness of Tbilisi and the surrounding areas:

- Develop health tourism – due to its proximity to Armenia and Azerbaijan, the Kvemo Kartli region has the potential to develop health tourism. This would require improving hospital infrastructure and ensuring that hospitals are staffed with qualified personnel. Since most qualified personnel are based in Tbilisi, the region's proximity to the capital should be beneficial in this regard.
- Address nursing shortages – this is a significant challenge facing the Georgian healthcare sector. The Kvemo Kartli region would benefit enormously from the establishment of professional institutions where locals would be able to learn professions such as nursing.

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APPENDIX: 1

1.1. LOCATION QUOTIENT

The Location Quotient (LQ) identifies the sectors that are driving economic growth in Kvemo Kartli region. This method measures the level of the sector's concentration in the region compared to the country as a whole. The aforementioned method was used to identify the primary and secondary economic sectors for the region. Primary sectors contribute significantly to the region's economic development, while secondary sectors' contribution is relatively insignificant. The LQ is calculated by comparing the aforementioned sector's share of regional employment with its share of national employment.

$$LQ = \frac{e_i}{e} / \frac{E_i}{E}$$

Whereby

e_i – (i) The number of people employed in the sector across the region

e – Total number of people employed in the region

E_i – (i) The number of people employed in the sector across the country

E – Total number of people employed in the country

If $LQ_i > 1$, sector (i) represents a primary sector for the region. If $LQ_i < 1$, sector (i) represents a secondary sector for the region. A high LQ and a high number of employees indicate that the sector in question is one of the driving forces for the region's economic growth. We calculate the LQ for all sectors operating in the region. The results allow us to divide the sectors into primary and secondary categories

| Primary Sector | Secondary Sector |
|----------------|------------------|
| | |
| | |
| | |
| | |
| | |
| | |

1.2. Shift-Share Analysis of the Region

Shift-Share Analysis represents one of the most common methods of regional analysis. This method allows us to identify the most competitive sectors for the region. The given analysis helps us to identify the factors that determine changes in employment figures in the aforementioned region's economic sectors during a certain period.

Shift-Share Analysis explains changes in employment figures during a certain period through the following three effects: the national growth effect (*NGE*), the industry mix effect (*IME*), and the competitiveness effect (*CE*).

$$e_i^{t+n} - e_i^t = e_i^t \left[\frac{E_i^{t+n}}{E_i^t} - 1 \right] + e_i^t \left[\frac{E_i^{t+n}}{E_i^t} - \frac{E_i^{t+n}}{E^t} \right] + e_i^t \left[\frac{e_i^{t+n}}{e_i^t} - \frac{E_i^{t+n}}{E_i^t} \right]$$

$$e_i^t \left[\frac{E_i^{t+n}}{E_i^t} - 1 \right] - NGE$$

$$e_i^t \left[\frac{E_i^{t+n}}{E_i^t} - \frac{E_i^{t+n}}{E^t} \right] - IME$$

$$e_i^t \left[\frac{e_i^{t+n}}{e_i^t} - \frac{E_i^{t+n}}{E_i^t} \right] - CE$$

e_i^{t+n} - The number of people employed across the region in sector (i) in year (t+n)

e_i^t - The number of people employed across the region in sector (i) in year (t)

E_i^{t+n} - The number of people employed across the country in sector (i) in year (t+n)

E_i^t - The number of people employed across the country in sector (i) in year (t)

E^{t+n} - The number of people employed across the country in all sectors in year (t+n)

E^t - The number of people employed across the country in all sectors in year (t)

The *NGE* shows the number of jobs created in sector (i) that can be explained by the country's economic growth. For example, if the calculation for the agriculture sector shows that *NGE*=300, it means that 300 jobs were created in the agriculture sector due to national economic growth.

The *IME* shows the number of jobs created in sector (i) that can be explained by the growth of sector (i) across the country. For example, if the calculation for the agriculture sector shows that *IME*=300, it means that 300 jobs were created in the agriculture sector due to the growth of this sector in Georgia.

The *CE* shows the number of jobs created in sector (i) that can be explained by the region's competitiveness in the given sector (this factor only applies to a specific sector in a specific region). For example, if the calculation for the agriculture sector shows that *CE*=300, it means that 300 jobs were created in the agriculture sector due to the fact that it is a competitive sector within the given region.

The *NGE* and the *IME* represent the expected changes in employment figures in sector (i), while *CE* reflects the changes in employment figures due to the competitiveness of the given sector in the region. Thus, *CE* will be the main indicator of which sector in the region is most competitive.

We conduct Shift-Share Analysis for each sector operating in the region and identify the sectors where the region has competitive advantages.

| | Sector | NGE | IME | CE | Quantitative Change in Employment (2016, compared to 2010) |
|---|--------------------------------------|-----|-----|----|---|
| 1 | Agriculture, Hunting and Forestry | | | | |
| 2 | Fishing | | | | |
| 3 | Mining and Quarrying | | | | |
| 4 | Manufacturing | | | | |

| | | | | | |
|----|--|--|--|--|--|
| 5 | Electricity, Gas and Water Supply | | | | |
| 6 | Construction | | | | |
| 7 | Wholesale and Retail Trade and Repair of Motor Vehicles and Personal and Household Goods | | | | |
| 8 | Hotels and Restaurants | | | | |
| 9 | Transport and Communication | | | | |
| 10 | Real Estate, Renting and Business Activities | | | | |
| 11 | Education | | | | |
| 12 | Health and Social Work | | | | |
| 13 | Community, Social and Personal Service Activities | | | | |

1.3. Value Chain Model

Porter's value chain model includes five primary and four secondary activities.

Primary activities include the following:

1. Inbound logistics – processes related to receiving, storing and distributing inputs internally, communicating with suppliers, etc.
2. Operations – transformation activities that change inputs into outputs. These include all the activities that are required to create products out of raw materials.
3. Outbound logistics – applies to transport companies, distributors, retailers, wholesalers, etc. Includes all the activities that are required to deliver products or services to the customer.
4. Sales and marketing – includes advertising, pricing, etc.
5. Service – all service-related processes, such as customer support, repairs, installation, training, etc.

Secondary activities include the following:

1. Administration and infrastructure – financial management, planning, administration, etc.
2. Product / technological development – activities related to the development of products or service technologies.
3. Human resource management – hiring, training, promotion, development and other HR management-related activities.
4. Procurement – activities related to the procurement of production means.

