



# Analyzing Ways to Promote Research in the Social Sciences in Georgia's Higher Education Institutions

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# Analyzing Ways to Promote Research in Social Sciences in Georgia's Higher Education Institutions

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**Policy Paper**

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## Analyzing Ways to Promote Research in Social Sciences in Georgia's Higher Education Institutions

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Study is undertaken by Georgia's Reforms Associates (GRASS)-a non-partisan, non-governmental multi-profile policy watchdog and think-tank, which conducts research and public policy analysis and provides advice and project management in the fields of public policy and public administration reform. GRASS has identified Foreign Policy and Security, European Integration, Occupied Regions and Engagement, National Minorities, Education, Vulnerable Groups and Justice and Liberty as the areas of its work. GRASS was established in October 2012 by a group of like-minded former senior civil servants form the Georgian Ministries of Justice, Interior, Economy, Foreign Affairs and Defense, among other government agencies and former international civil servants with worldwide experience.



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# Analyzing Ways to Promote Research in Social Sciences in Georgia's Higher Education Institutions

## Executive Summary

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The present study was undertaken by independent think-tank GRASS within the framework of the “Policy, Advocacy, and Civil Society Development in Georgia” (G-PAC), funded by USAID. Georgia’s Reforms Associates (GRASS) is a non-partisan, non-governmental think tank which conducts research and public policy analysis, and provides project management, advice, and advocacy in the fields of public policy and public administration reform.

The Georgian education system has made significant efforts to overcome its Soviet education legacy and establish an intellectually stimulating environment in higher education institutions (HEIs). Yet despite a reforms, Georgian HEIs are still in transitional period and certain fields are underdeveloped, such as research in the social sciences. There are hardly any international referenced academic journals in Georgia in the field of social sciences, and production of scientific work in this field is extremely slow. The Faculty of Social and Political Sciences at Tbilisi State University (which has over 100 professors) published only 12 articles in international peer-reviewed journals during the four academic years from 2010 to 2014. Consequently, there is a need for high quality research in line with academic standards. On the other hand, new knowledge produced as a result of social science research can be utilized in different sectors, such as for government, NGOs, media, etc., to facilitate informed decision-making processes and bolster the country’s development.

The overall purpose of this project is to analyze the main causes for the absence of social science research in Georgia’s HEIs, and develop strategic recommendations for the Ministry of Education and Science of Georgia (MES), parliamentary committees, donor organizations, HEIs, and academic research institutions to promote research in the social sciences.

To achieve this goal, 14 Georgian higher education institutions were examined using both qualitative and quantitative research methods. The main research instruments used during the study were: Desk review, focus groups discussions, in-depth interviews, internet scholarly database analysis, and academic personnel survey. The study was conducted in March-May 2014 by GRASS researchers with the help of part-time interviewers who administered the academic personnel questionnaires. We divided our main findings into two parts: Structural factors that

determine the state of social science research in the Georgian academic environment, and individual factors that make individual researchers successful in the given environment. The first part was analyzed qualitatively with the help of in-depth interviews, and quantitatively with the help of descriptive statistics and statistical tools such as Independent Samples T-Test and correlation analysis. The second part was analyzed with the help of binary logistic regression analysis.

We used three sources to determine the real state of affairs in Georgian social science research. We used Scopus database, Google Scholar, and our own GRASS Index to calculate the number of publications in social sciences between the years 2010-2013 that have some scholarly value. We found that the average number of self-reported publications (the number of publications reported by the respondents during the survey) across all the 277 publications was 4.66, which was 7.87 times higher than the average number of Scholar-listed publications (0.59), and 61.4 times higher than Scopus-listed (0.076) per academic. Based on this, we concluded that there is a dramatic mismatch between the self-reported number of publications and the actual number of publications by Georgian academics that have scholarly value.

The data collected from the academic and administrative university personnel was analyzed qualitatively by in-depth interviews, and quantitatively with the help of descriptive statistics and such statistical instruments as Independent Samples T-Test and correlation analysis. As a result of the analysis, we identified four types of structural factors that determine the social scientific output in Georgia: Lack of funding, institutional factors, localization of knowledge, and the Soviet legacy. All of these factors have substantial impact on the productivity and quality of social science research in Georgia.

We also identified individual factors that make individual professors successful in the given environment (the two levels of analysis were separated to avoid the ecological and individual fallacies). English-language writing skills turned out to be a statistically significant factor that contributes to the productivity of researchers; English-language writing skills enable professors to publish articles in English that can easily be noticed and placed in the Google Scholar database.

We divided the recommendations section of the policy paper into two: Recommendations for universities, and recommendations for the government. Overall, we drafted 26 recommendations. Each outlined problem has a corresponding recommendation.

# Higher Education System in Georgia

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## 1. Overview

During the years 2004-2007, the Georgian government took on the difficult task of revamping its higher education system. After joining the Bologna Process in 2005 --which created compatible and coherent education systems in Europe -- all Georgian HEIs implemented a three-cycle education structure (Bachelor's, Master's, and Doctorate degrees) and quality assurance systems. In 2004, the Law of Georgia on Higher Education was adopted. One of the primary targets to improve the education system was by upgrading personnel qualifications through university quality assurance services at the institutional level, as well as at the National Center for Education Quality Enhancement. Integrating teaching and research was another major challenge for the higher education system. During Soviet times, universities were primarily for teaching, and research was outsourced to the National Academy of Science. Even in the post-Soviet period, universities were still notable to fully utilize their resources, both financial and human, to bridge the fields of both teaching and research. Through the various education reforms, Georgian universities made significant breakthroughs in transforming the centrally-managed, Soviet-style education system into a more autonomous and dynamically governed one. Still, Georgian HEIs face struggles as they enter the rapidly developing world of global higher education.

The Law of Georgia on Higher Education adopted in December 2004 prepared a legal basis for reforms, defining the roles and responsibilities of all players involved in higher education, the levels of higher education, rules for admission, licensing, authorisation, and accreditation procedures, types of educational institutions, introduction of credits, etc. (NTO, 2012). Several amendments to the law were enacted in the last few years, including the changes in the legal status of public higher education institutions, definitions of academic positions, and changes in the management of HEIs. The law created new Doctoral degree programs – and the PhD research thesis --replacing the Soviet classification of *Aspirantura* and *Kandidat Nauk*. This was also in response to the initiative to integrate teaching and research.

There are three types of higher education institutions in Georgia:

- a) University: A higher education institution offering all three cycles of education that also conducts scientific research;
- b) Teaching university: A higher education institution that offers Bachelor's and Master's degrees, but does not offer Doctoral studies.
- c) College: A higher education institution implementing only the first cycle of higher educational programs.

## **2. Public and Private Higher Education**

According to the Law on Higher Education of Georgia, a higher education institution must be established as a legal entity by public or private law. Public higher education institutions are established by the state, and private higher education institutions are established by non-state actors. The creation of private higher education in Georgia in the early 1990s was a response to the demand for new occupations and skills in the job market, and to political and socio-economic changes following the breakup of the Soviet Union (Sharvashidze, 2005). In 1991 Parliament enabled the establishment of nongovernmental private HEIs, subsequently preparing the basis for creating a new type of higher educational institutions.

Currently, there are 57 higher education institutions authorized by the Ministry of Education and Science. Of these, 28 are research universities providing all three cycles of higher education. The remaining 29 have the status of teaching universities and have only a minor contribution to research. 20 of the HEIs are public and 37 are private (NTO Georgia, 2012). 64 % of HEIs are located in the capital city, Tbilisi. The total number of students in all HEIs is 99,000 (as of April 2012). 62 % of students are enrolled in the five biggest public universities (NTO Georgia, 2012). All public institutions were previously either state institutions, until the major higher education reforms in 2006, or were established by the mergers of state-run universities and institutes and granted the status of a Legal Public Entity.

## **3. Management and Funding**

The higher education system in Georgia is managed by the state.

The parliament of Georgia determines the key direction of higher education policy and management and adopts according legislation; it regularly hears reports from the Ministry of Education and Science regarding state policy, financial activities, and fulfillment of public programs in the field of higher education; the government approves the volume and amount of state-funded study grants; it can also establish a public HEI. The Ministry of Culture, Monuments Protection, and Sports and Youths Affairs approves the statute of a higher education institution in the field of Fine Arts and Sports Higher Education.

The structure of a higher education institution is defined by the respective institution's charter and approved by the Ministry of Higher Education. HEIs have the freedom to develop study and research policies, determine the rules for personnel recruitment, elect their management bodies, and manage their finances.

Funding for HEIs comes from the state. HEIs receive funds from tuition fees, private grants or contributions, research grants from the state, program financing allocated by the ministries of relevant fields, and revenues from economic activities. Grants from the government are provided

to public universities for infrastructure projects, when necessary. Private universities receive no direct funding from the government, but receive indirect subsidies through state grants given to their enrolled students, based on students' merit.

# Social Science Research in Higher Education

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Social science research does not have a rich tradition in Georgia; the field only developed after the collapse of the Soviet Union and Soviet ideological limitations. Although a number of progressive steps were implemented after 2004, there are still challenges associated with the Soviet legacy, and social science research in Georgia is still in an incipient stage.

## Regulation

The main documents regulating academic research in Georgia are the Georgian Law on Higher Education (adopted in 2005), the Georgian Law on Science, Technologies, and their Development (adopted in 1994 and amended in 2006), the Georgian Law on the Georgian Academy of Sciences (adopted in 2007) and the Georgian Law on State Grants (adopted in 1996). These documents outline the general framework of scientific activity and identify key stakeholders and their responsibilities. Another important document is the State Policy on Science and Technology that prioritizes fields in the country's socio-economic life that need improvement and reform.

## Key players determining policy

- **The Government:** In close cooperation with scientific communities directs, the Science and Technology Policy document in order to identify priority research areas. The government also develops suggestions for strengthening the science and technology potential of the country, including infrastructure development projects, and establishes important international contacts.
- **Parliament:** Approves priority areas for science and technology as well as the annual budget. It is responsible for monitoring and prioritizing scientific activities.
- **Ministry of Education:** Has a leading role in implementing programs, projects, developing infrastructure, funding research institutions, and establishing cooperation with relevant international partners.
- **National Center for Educational Quality Enhancement:** Coordinates educational programs to be compatible with accreditation standards. The Center has other duties related to the

enhancement of the quality of education at Georgian universities, and is introducing regular self-evaluations to improve educational quality.

- Local Government: Supports development in science and technology through implementation of specific programs, projects, and targeted activities, and develops infrastructure on a regional level.
- Georgian Academies of Sciences: Serves in an advisory role to the government to determine priority areas and establish international contacts.

## **Key players involved in research activities**

Higher Education Institutions: Despite quite limited research activities, after the 2007 reform, HEIs have great scientific potential. NGOs: A number of local and international NGOs conduct social science research, however it is not academic. They conduct research work to influence policy-making or help international donors identify areas of intervention.

- Academic Research Institutes (ARIs): These institutions formerly operated under the Georgian Academy of Sciences. In 2007 they were established as independent legal entities of public law reporting to the Ministry of Education and Science, which funds their research projects. As part of the reform of the education system, Academic Research Institutes then became associated with state higher educational institutions to decrease the gap between research and education.
- Shota Rustaveli Foundation: Founded in 2010 by the Ministry of Education and Science and responsible for managing and evaluating grant competitions in the fields of Georgian studies, humanities, socio-economic studies, engineering, IT and telecommunications, math, physics and chemistry, medicine, earth studies, life studies, and agriculture. The grants support development in these fields by building infrastructure, attracting young researchers, working with international partners, and providing financial support. It is led by a director and steering committee comprised of members of the cabinet, the Georgian Academy of Sciences, and leaders of HEIs.
- NGOs: A number of local and international NGOs engage in social science research, however not all of them meet academic standards. Their aim is mainly to a) influence government decision-making and policy, or b) help international donors identify areas of intervention.
- International Donors: More than 15 international donors are currently supporting research activities in Georgia through grant competitions, international exchange programs, support in publishing, and nurturing international cooperation. We were not able to find figures on how much money is spent annually by donors supporting research activities in Georgia.

# Methodology

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## Scope of the Study

This report is based on the findings of a study undertaken by GRASS within the framework of a USAID funded project entitled “Analyzing Ways to Promote Research in Social Sciences in Georgia’s Higher Education Institutions.” The study was conducted in March-May 2014 by GRASS researchers. The study comprises an academic personnel survey of 14 Georgian higher education institutions, two focus group discussions, 16 desk-research surveys, and 16 in-depth interviews. The study covers both regional universities and universities located in the capital.

## Objective of the Study

The overall purpose of the project is to analyze the main reasons for low scientific productivity in the social sciences in Georgia’s HEIs, and develop strategic recommendations for the Ministry of Education and Science of Georgia, parliamentary committees, donor organizations, HEIs, and academic research institutions for the purpose of promoting research in the social sciences.

## Research Population and Sample Design

The research population consists of representatives of private and public universities (academics, administrators of the faculties, resource officers), and representatives of research institutions and donor organizations.

We examined the following 14 universities within the framework of this project:

1. Tbilisi State University (TSU)
2. Ilia State University
3. Georgian Technical University
4. Kutaisi State University
5. Gori State University
6. Batumi State University
7. Telavi State University
8. Grigol Robakidze University
9. Black Sea University
10. Caucasus University
11. Free University
12. American Humanitarian University
13. University of Georgia
14. Georgian Institute of Public Affairs (GIPA).

Table 1 shows the data they provided about the numbers of their faculty members:

**Table 1. The number of social science faculty members at 14 Georgian Universities and Return Rate (2013)**

	<b>University</b>	<b># of faculty members</b>	<b># of respondents</b>	<b>Response rate</b>
1	Tbilisi State University	93	72	77%
2	Ilia State University	46	35	76%
3	GIPA	34	16	47%
4	Caucasus University	32	16	50%
5	Kutaisi State University	32	32	100%
6	Batumi State University	28	15	54%
7	Georgian Technical University	26	20	77%
8	Black Sea University	25	12	48%
9	Grigol Robakidze University	20	13	65%
10	University of Georgia	16	7	44%
11	Telavi State University	13	6	46%
12	Free University	11	8	73%
13	Gori State University	7	7	100%
14	American Humanitarian University	3	3	100%
	<b>Total</b>	<b>386</b>	<b>278</b>	<b>72%</b>

The 386 professors were those who reported themselves to be officially employed by the faculty administration. We excluded 20 professors from this initial dataset that did not belong to the social sciences and were wrongly classified to the discipline by the universities.

All 386 professors were contacted and were asked to meet for an interview. Those who were abroad at the time of the survey were sent questionnaires by email and were asked to fill it electronically. Overall return rate was 72 %. as can be seen in Table 1.

## **Instruments**

Both qualitative and quantitative methods were used for data collection. The main instruments were: Desk review, focus group discussions, in-depth interviews, internet scholarly database analysis, and academic personnel survey.

### **Desk review**

For desk research, GRASS researchers designed four questionnaires for Social Science faculty members, administrators, donor organizations, and the Ministry of Education. The data was used to generate a sample of faculty (full professors, assistant professors, and associate professors) to further explore the situation of academic researchers from various universities. It was also used to learn more about funding opportunities and donor organizations.

## **Focus Groups**

Purposive sampling widely used in qualitative research was employed for recruiting the respondents for this component of the study.

Discussion participants were representatives of social science faculties and administrators from both private and public universities in Tbilisi and the regions. In order to recruit respondents for focus groups and interviews, GRASS sent letters to the respective universities requesting a list of their faculty as well as resource officers supporting faculty in preparing research proposals and grant administrations. Selection of participants was conducted taking into consideration the region (Tbilisi/Regions) and type of university (private/public).

The representatives were invited to participate in focus group discussions. At the end, public universities were presented by Iv. Javakhishvili Tbilisi State University, Ilia State University, Georgian Technical University, Kutaisi Ak. Tsereteli State University, and private ones by International Black Sea University, University of Georgia, Georgian American University, Caucasus University, Free University. The focus group discussions with private and public universities took place separately in the GRASS office in Tbilisi.

The discussions were recorded, transcribed, and analyzed by GRASS researchers.

## **Structured Interviews**

In-depth interviews were conducted with representatives of faculty members and research institutions. In total, 16 interviews were conducted. From regional public universities - 4, Tbilisi private universities - 3, Tbilisi Public Universities - 7, and research institutions - 2. Selected candidates were mainly those with high scientific output and expertise in their field. The interviews were conducted by GRASS researchers. They were recorded and transcribed.

## **Collecting information from Internet Scholarly Databases**

Internet Scholarly databases Google Scholar and Scopus were used to collect information about the publications published by Georgian professors from 2010 to 2013. Data that was collected from the Google Scholar database was checked by two different researchers. Additionally, self-reported lists of publications from academic personnel surveys were also used to ensure that no Scholar-listed publication was left uncounted.

## **Survey/Questionnaire**

A questionnaire was designed by GRASS. It was piloted and administrated by GRASS researchers and part-time interviewers. The survey was targeted for Social Science faculty members of the universities.

### ***Survey Documents and Preparation for Fieldwork***

At the preparatory stage of the survey, GRASS recruited part-time interviewers and trained them on the subject of the survey, study tools, questionnaires, and how to complete the questionnaire. They were given detailed instructions on how to ensure that the respondents understood the importance of participation in the study and to ensure confidentiality.

Respondents living in the regions were contacted by GRASS researchers themselves and were asked to send the filled questionnaires electronically.

### ***Control of Questionnaires***

Before sending the filled-out questionnaires to the GRASS head office, the part-time interviewers checked the quality of each completed questionnaire. In the event of any inconsistencies, they asked the respondents for additional information. In addition, GRASS researchers conducted the questionnaire's logical control and editing processes, to identify any missing information or inaccuracies in the questionnaire.

GRASS researchers conducted coding of open-ended questions after the questionnaires had undergone all quality assurance procedures including primary control, quality control, and logical control.

### ***Data Entry and Data Analysis***

GRASS part-time interviewers entered the data in SPSS 20. The latter statistical software was used for quantitative analysis. Binary logistic regression and correlation analysis were used as main tools for the data analysis.

## **Limitations of the Study**

For the Limitations of the Study, See Annex 1.

### **Current State of Social Scientific Output in Georgia**

In order to assess the state of social science research in Georgian higher education institutions, we gathered data on academic publications produced by the social science faculties of these institutions between the years 2010 and 2013.

We gathered and analyzed the data on publication output for each of the 366 professors and each of the years individually by using two databases: Google Scholar and Scopus. We also gathered the number of self-reported publications. The first source for determining the number of publication was professors' own lists of publications in the academic personnel questionnaires. Apart from the fact that we had data for self-reported publications only for 277 professors, this method suffered from a major limitation.

There was a very weak association between the self-reported number of publications and quality research. For the 277 professors who filled the questionnaire, the correlation between the number of Scholar-listed publications and the number of self-reported publications is extremely low: 0.230 ( $p < 0.05$ ). The correlation between the self-reported N of publications and the number of citations attracted is only 0.158 ( $p < 0.05$ ). And the correlation between the self-reported number and the number of Scopus-listed articles is even lower: 0.067 ( $p < 0.05$ ), which essentially implies lack of any association. The average number of self-reported publications across all the 277 is 4.66, which

is 7.87 times higher than their average number of Scholar-listed publications (0.59) and 61.4 times higher than Scopus-listed (0.076). In other words, the number of publications reported by a professor does not reflect his/her scientific impact.

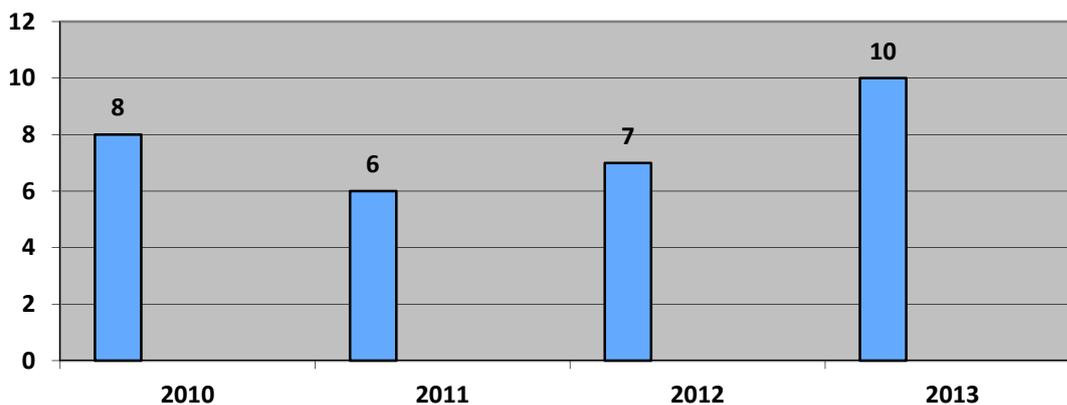
In order to measure a real scientific impact, we compiled three datasets for the social scientific output: Scopus-listed publications, Google Scholar-listed publications, and the GRASS Index.

The first approach, listing only Scopus-listed publications, we called a conservative approach. Using only Google Scholar for determining the number of publications we considered a liberal approach. The reasons for this is that Google Scholar covers a much wider range of publications than relatively restricted databases such as Scopus or Web of Science, often covering non-peer reviewed publications as well.<sup>1</sup>We also offered a third, moderate approach and constructed our own GRASS Index to compile a dataset that does not compromise on quality of research as much as the liberal approach.

#### a) Conservative Approach: Scopus-Listed Articles

The percentage of researchers with Scopus-listed publications is very low. Out of the 366 professors, only 23 (6.3%) produced at least one such article in the years 2010-2013. The total number of distinct Scopus-listed articles produced is 31. The distribution of the articles by year is given in Graph 1.

**Graph 1. The number of Scopus-listed articles by Georgian social scientists, by year**

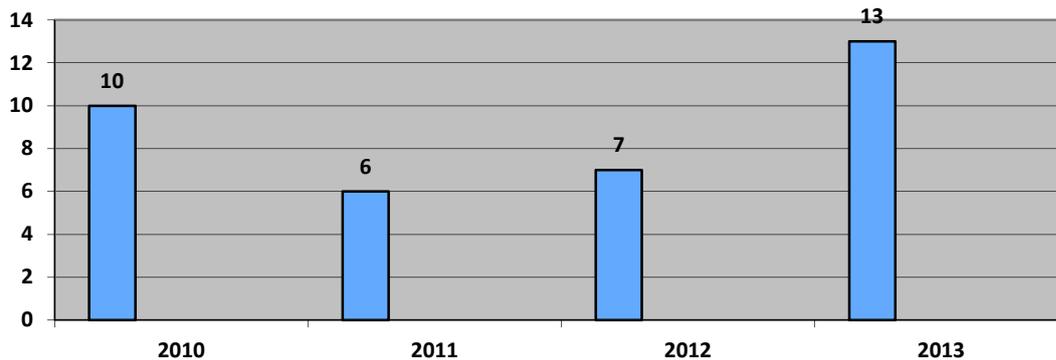


We can also calculate the number of authorships by Georgian social scientists (not the number of unique publications which is shown in Graph 1). We got 36 authorships from 2010 to 2013. That is about 1 article a year per 50 professors. The results are shown on Graph 2.

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<sup>1</sup>Bar-Ilan, Judit. "Which h-index?—A comparison of WoS, Scopus and Google Scholar." *Scientometrics* 74, no. 2 (2008): 259.

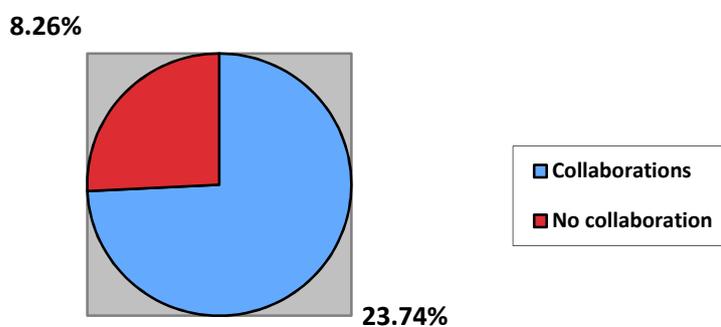
**Graph 2. The Number of Authorships by Georgian Social Scientists in Scopus database, by year**



The highest number of Scopus-listed articles produced by one professor in the four years is 4. Out of the 9 professors who produced more than one Scopus-listed publication, two are foreigners working in Georgia (one of the articles produced by the foreigners have Georgian co-authors). They are also the only foreigners among all the 366 professors.

As is seen in Graph 3, out of the 31 publications, 23 are collaborations.

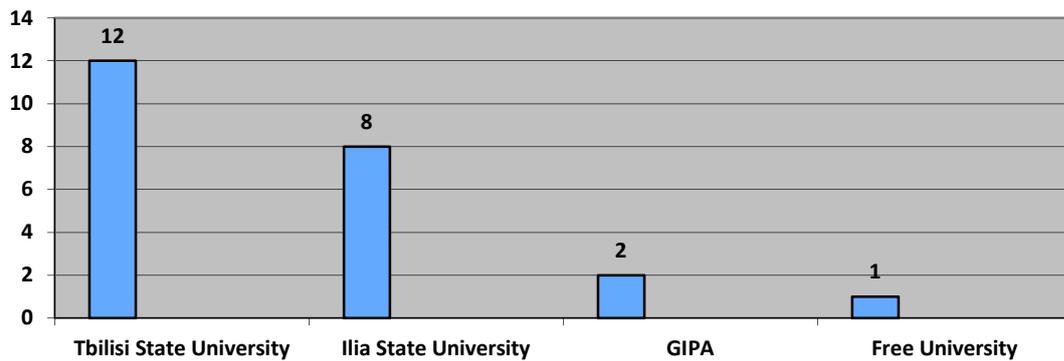
**Graph 3. The Percentage of Collaborations among Scopus listed articles (2010-2013)**



Also almost half of the collaborations --15 of them -- have at least one foreign co-author (not to be confused with the two foreigners working as professors in Georgia). Six professors produced Scopus-listed articles without co-authors (foreign or non-foreign), and two of them are again the two foreigners.

All Scopus-listed articles are authored by the social scientists affiliated with universities in Tbilisi. And all of them, except three, are authored by the professors at public universities. Graph 4 shows the distribution of authorships by university.

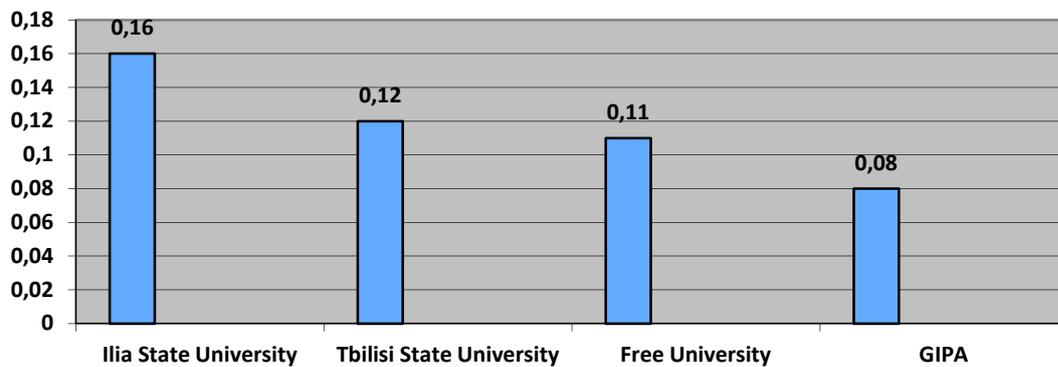
**Graph 4. Distribution of Authorships by Universities (2010-2013)**



Tbilisi State University has most authorships; the university with second-most authorships is also public.

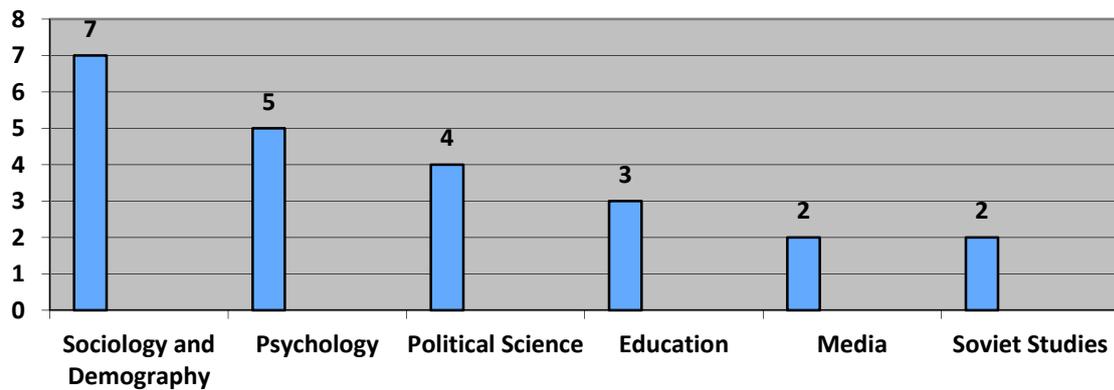
If we are interested in the number of authorships per faculty member, then the ranking will change. Ilia State University is the most productive in terms of social science output per faculty member. For graphical illustration, see Graph 5.

**Graph 5. The Number of Authorships per Faculty Member by Universities (2010-2013)**



As for the disciplines that have most authorships, see Graph 6.

**Graph 6. Distribution of Authorships by Disciplines (2010-2013)**

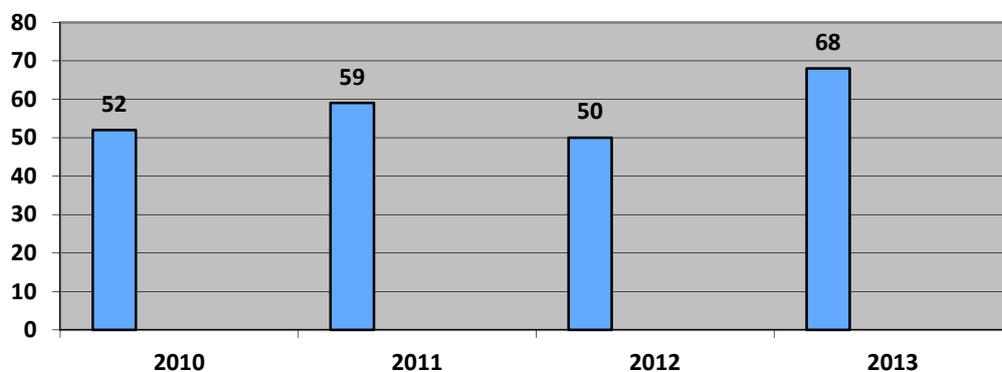


Sociology, demography, and psychology received most of the 33 % of authorships. The two authorships in Soviet Studies were both by the foreign professors working in Georgia.

#### **B) Liberal Approach: The Number of Authorships Found in Google Scholar**

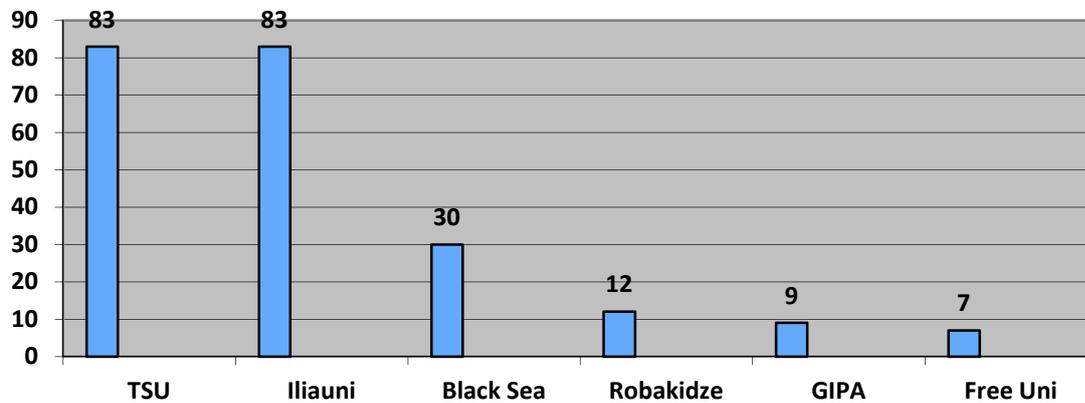
The second approach implies listing only the raw numbers of publications by Georgian professors that are found in the Google Scholar database. Here we only compiled the number of authorships by Georgian social scientists, not the number of separate publications. Google Scholar found 229 authorships by Georgian professors in the time span 2010-2013. The results, divided by year, can be seen on Graph 7.

**Graph 7. The number of authorships by Georgian social scientists found in Google Scholar, by year**



We also checked which universities produced the most authorships. The results are shown on Graph 8.

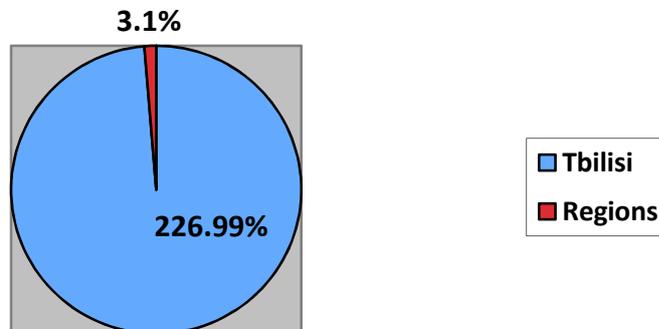
**Graph 8.**The number of authorships by Georgian social scientists found in Google Scholar, by universities (2010-2013)



Tbilisi State University (TSU) and Ilia State University (Iliani) shared first place with 83 authorships each. Black Sea University occupied the third place. Telavi State University, Georgian Technical University, Kutaisi State University, American Humanitarian University, and University of Georgia had no authorships in the specified time period. Caucasus University and Batumi State University had two authorships each, while Gori State University had only one.

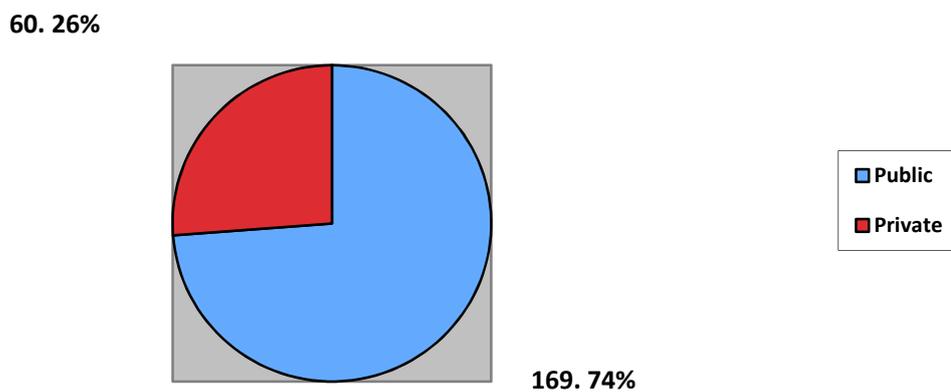
We were also interested in a regions-Tbilisi gap. Graph 9 shows that only 1% of all authorships found in Google Scholar came from the regions. Scopus database contained no record of the articles that were either authored or co-authored by the Georgian professors affiliated at regional universities.

**Graph 9. The number of authorships by Georgian social scientists found in Google Scholar, by the location of universities (2010-2013)**



We also looked at the ownership type of universities (public/private) and how the number of authorships was distributed according to this criterion.

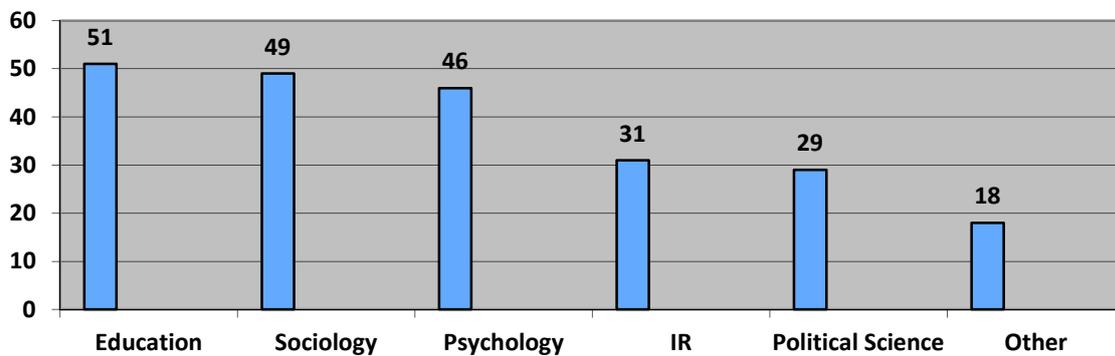
**Graph 10. The number of authorships by Georgian social scientists found in Google Scholar, by the ownership type of universities (2010-2013)**



As is seen in Graph 10, only 26 % of all authorships were from social scientists that were affiliated at private universities.

Even though we didn't have a complete list of specializations of social scientists, we still decided to provide the relevant numbers broken down by disciplines.

**Graph 11. The number of authorships by Georgian social scientists found in Google Scholar, by disciplines (2010-2013)**



Graph 11 shows that Education, Sociology, and Psychology are the three disciplines where professors produce the most articles (65 % of all authorships). Media is the least productive sphere with only 6 authorships in the four year span.

**c) Moderate Approach– GRASS Index**

We decided to find a third way between the two approaches; counting only Scopus-listed authorships deprives us the possibility to describe the extensive dataset with additional variables that will eventually help us in inferential statistics. As we noted above, only 6 % of the Georgian social scientists published at least one Scopus-listed article in the given time period.

However, the second, liberal approach seems heavily tilted towards measuring productivity rather than quality. The quality of publications listed in Google Scholar varies dramatically. One of the main quality indicators is citations. There are only 36 professors among the 366 (10%) whose publications from the four years attracted at least one external citation listed in Google Scholar, as of June 2014. Taking into account that 97 professors have one or more publications listed in Scholar, it means that publications of 57 (59%) of them have not attracted a single external citation.

Understandably, the correlation between the number of Scholar-listed publications and the number of citations is rather modest (0.388). The correlation between the numbers of Scholar-listed and Scopus-listed publications is even lower (0.257). In other words, having a relatively large number of Scholar-listed publications does not guarantee that the author has a visible scientific impact or produced quality research.

To restore the balance, we decided to introduce the GRASS Index that will count Google Scholar authorships by taking into account several criteria that determine the quality of the publication.

The following formula will be used to calculate the GRASS Index:

$$\text{Publication Score} = (1 - \text{TimeCoeff} * (2013 - \text{Year})) * (\text{BaseScore} + \text{RankCoeff} * \text{SJR} + \text{ForeignCoeff} * \text{IsForeign} + \text{LangCoeff} * \text{LangIndex} + \text{ExtCiteCoeff} * \text{NExtCites} + \text{SelfCiteCoeff} * \text{NSelfCites}) / \text{SQRT}(1 + \text{NLocalCoauth} + \text{NForeignCoauth})$$

- **TimeCoeff:** The effect of the coefficient is to assign more weight to more recent articles. The coefficient is set to 0.1. It partly balances the fact that the older articles had a longertime period to be cited (what is called a citation window).
- **BaseScore:** The minimum score assigned to an article irrespective of other parameters, such as citations, impact factor, and language. Set to 0.25.
- **RankCoeff:** The coefficient by which the SciMago Journal Rank factor is multiplied. Set to 5.0. For instance, if the impact factor of a journal is 0.132, the corresponding member  $\text{RankCoeff} * \text{SJR} = 5 * 0.132 = 0.660$ .
- **ForeignCoeff:** Equals 0.5. If an article is published in a foreign journal (or by a foreign publishing house etc.), we add 0.5 to the score: *IsForeign* is the corresponding dummy variable.
- **LangCoeff:** Equals 0.125 and is multiplied by *LangIndex*, which is 0 for Georgian, 1 for other languages except for English (in practice, we only deal with German, French, and Russian), and 2 for English (this product reflects how accessible is an article for the international scientific community).
- **ExtCiteCoeff:** Equals 1.5 and is multiplied by the number of external citations: i.e. citations made by researchers other than the author or the co-authors.
- **SelfCiteCoeff:** Equals 0.5 and is multiplied by the number of citations made by the authors of the article.
- **1 + NLocalCoauth + NForeignCoauth:** Effectively is the number of authors of the article. I.e., we divide the total score by the square root of the number of authors, to avoid a situation. For instance, if an article has 9 authors, the score is divided by 3.

From the values of the coefficients we can see, the decisive role is assigned to the citations and the impact factor. The maximum score that an article without citations in a zero-impact journal can get is  $0.25(\text{base score}) + 0.5(\text{if it's published outside of Georgia}) + 0.25(\text{if it's in English}) = 1.0$ . At the same time, one external and one self-citation account to  $1.5 + 0.5 = 2.0$ , and if an article is published in a journal with an impact factor (Scimago journal rank) of 0.4, it also amounts to  $5 * 0.4 = 2.0$ .

The GRASS Index was productively used for regressions analysis. The basic descriptive statistics will not be provided here in this policy paper.

### **Overall Scientific Impact - Summary**

The number of Georgian social science professors who, we can conclude, have had at least some scientific impact through publications from the years 2010-2013 does not exceed 47 (11.7%). This is the number of professors who have either published at least one article in a quality (Scopus-

listed) journal, or published at least one article that has attracted one or more external citations. Of the remaining 355 professors, 50 have one or more Scholar-listed article. However, none of their articles have thus far shown to have an impact on other scientists' research.

Having Scholar-listed publications is not a strong sign of having produced quality research: The correlation between the number of Scholar-listed articles and the number of citations attracted or the number of Scopus-listed articles are below 0.4. The number of self-reported publications is an even weaker predictor, showing virtually no correlation with the quality indicators. The self-reported number exceeds the Scholar and Scopus-based numbers of publications by factors of 8 and 61 respectively.

Even the professors who have had non-zero impact produced low numbers of quality publications (at most, four), attracting low numbers of citations: only three professors' work attracted 10 or more external citations.

# The Structural Factors that Determine the State of Affairs in Social Science Research in Georgia

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## The Scope of the Analysis

Our analysis of the current state of social science research in Georgia is based on a two-pronged approach. First, we are interested in the state of Georgian social science research as a whole, and second, in the variability of conditions surrounding social science research. We argue that there are structural factors that contribute to the level of development of social science research in Georgia. The impact of those factors are more or less invariable across individual cases (i.e. individual professors). When it comes to the second part of the analysis, we look at the individual variations that set certain categories of individuals apart from the rest in terms of their scientific output. In the second instance, we will use only those structural factors as variables that are not invariable across cases.

The unit of observation in the first case will be the country's academic sphere, while in the second case, it will be individual professors. This is justified because our interest lies not only in determining what makes individual scientists successful within the shared academic space, but also in the structural factors that contribute to the disadvantaged position of the Georgian academic sphere as a whole. The contention is that there are overarching structural factors that contribute to the low social scientific output in Georgia that can be described by exploring the academic community of the country.

The other method of determining the factors that make Georgian social science research relatively disadvantaged would be comparing countries' social science academic environments quantitatively, by considering key structural variables. However, this would require a massive amount of data and resources that lie beyond the current capabilities of this project. Our approach is to draw on the in-depth interviews with the selected group of professors of Georgian universities and focus group discussions to find out the most important structural factors that inhibit social science research in the country. The qualitative findings will be reinforced with the descriptive statistics from desk-research questionnaires and academic personnel questionnaires.

Certainly, the qualitative approach that we offer in the first part of the analysis may look relatively limited in comparison to the quantitative approach in terms of validity, but there are two general reasons why it is justified: First, there are very strong causal mechanisms discernible in the analysis; second, some of the factors that contribute to the low level of social scientific output in Georgia are discursive factors. It can be argued that qualitative approach in this case will be far more relevant and productive than the quantitative one.

One more limitation of our qualitative analysis is the lack of tangible measurement criteria. Part of the research conclusions are based on the subjective appraisals of the professors and much less on the evaluation/comparison of objective factors. Desk-research questionnaires, academic personnel questionnaires, available statistics from the local and international organizations, and other sources provide some objective figures, but generally, there is no conclusive measurement criteria in several of the cases (for instance, when it comes to measuring real infrastructure problems). Despite this, our research may prepare the ground for more rigorous investigations. The subjective evaluations of professors are important for the public policy analysis as it shows the extent to which professors themselves perceive the lack of capabilities, the low quality of academic environment, and the absence of modern paradigms in social science research.

#### **Four Types of Structural Factors that Determine the Social Scientific Output in Georgia**

We identified four types of structural factors that determine the social scientific output in Georgia: Lack of funding, institutional factors, localization of knowledge, and Soviet legacy.

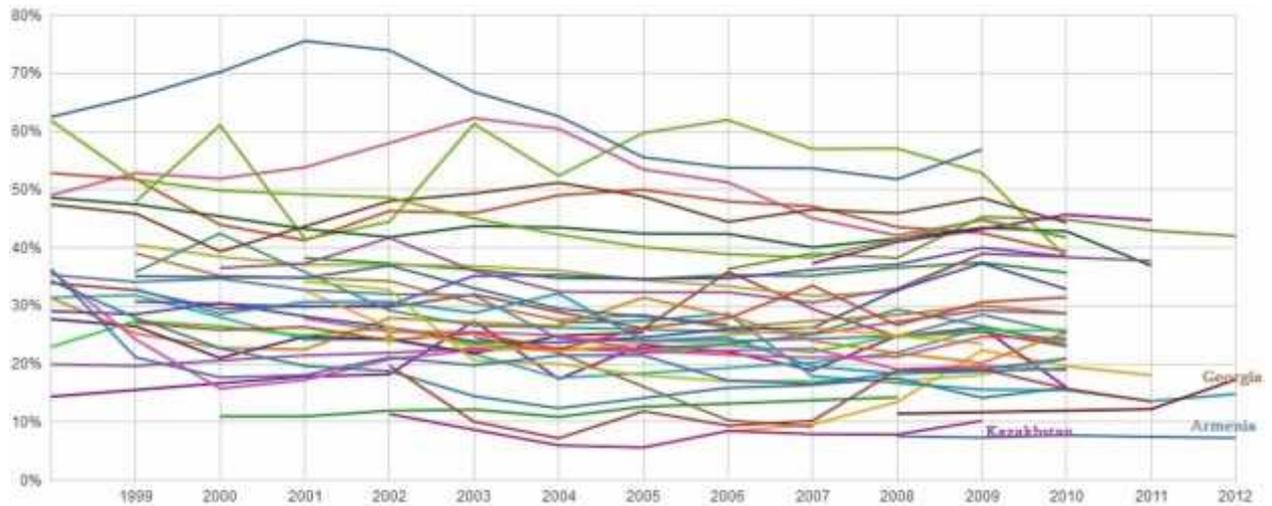
#### **Lack of Funding**

##### **a) Low Salaries at Higher Education Institutions**

In-depth interviews and focus-group discussions showed that limited funding for higher education is considered to be one of the major impediments to social science research in Georgia. The World Bank World Development Indicators show public expenditure per student at the level of tertiary education for the past ten years. Public expenditure per student is public current and capital spending on education divided by the number of students by level as a percentage of GDP per capita.

Graph 12 shows that Georgia spent around 11-12 % of GDP per capita on each student from 2008 to 2011, lagging behind the rest of the region (Europe and Central Asia), except for Kazakhstan and Armenia. Only in 2012 Georgia started to increase the spending to around 17%. This is more of a measure of education rather than scientific development, but it also clearly captures to what extent the state considers universities its priority.

**Graph 12. Expenditure per Student at the Level of Tertiary Education in the Countries of Europe and Central Asia from 2008 to 2012**

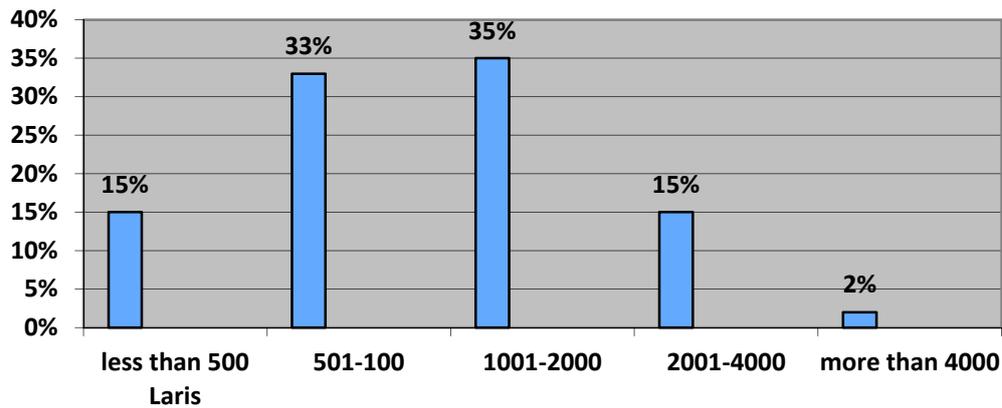


Sources: World Bank, Google Public Data.

However, for better understanding of the influence of funding on social science research, we need to look at actual budgets of the faculties of social sciences. For this purpose, we designed a desk-research questionnaire that was distributed to the faculties of social sciences of both the public and private universities. Since public spending alone cannot account for the low productivity and quality of scientific output, private spending also needs to be taken into account.

Graph 13 shows the average income from academic activities for selected professors in 2013.

**Graph 13. Average Academic Income in 2013 (N=260)**

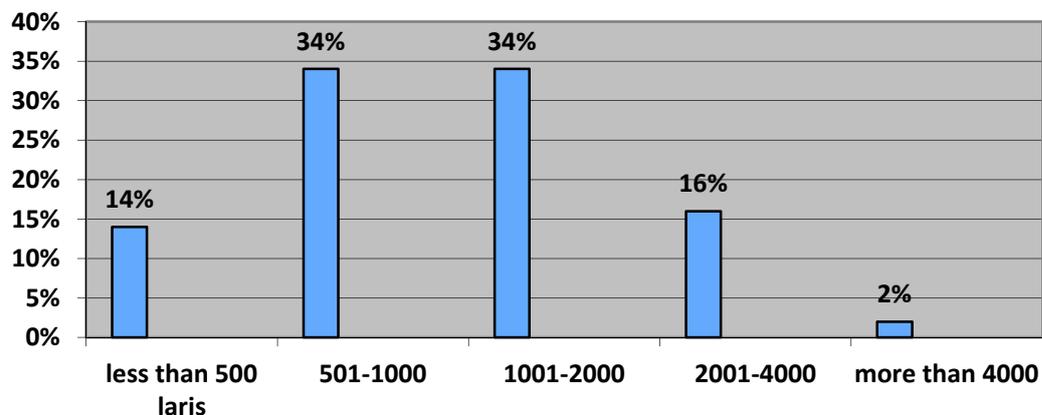


The majority of professors (68 %) received an academic income in the range of 501-2000 laris. 15 % of professors had an income of less than 500 laris, and only 17 % had an income over 2000 laris.

However, we must take into account that a number of the professors were working for more than one university at a time. 89 professors out of 278 were working in more than one university. If we exclude these 89 professors from the sample, we get different statistics.

Graph 14 shows the salaries of those professors affiliated with only one university.

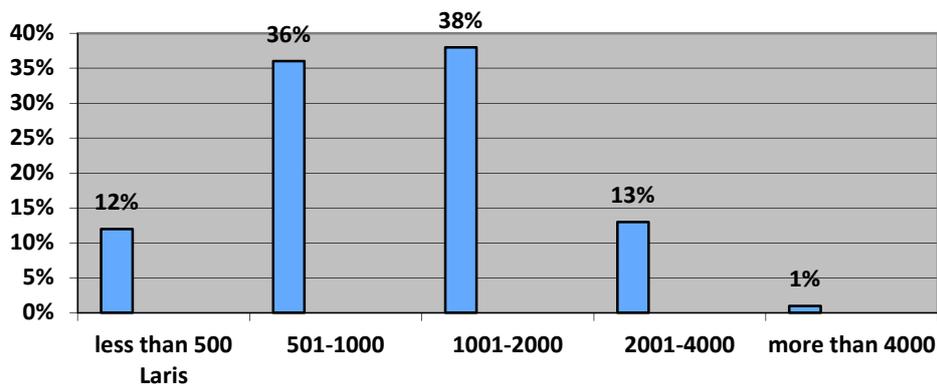
**Graph 14. Average Academic Income of Those Professors who are Affiliated with Only One University (N=179)**



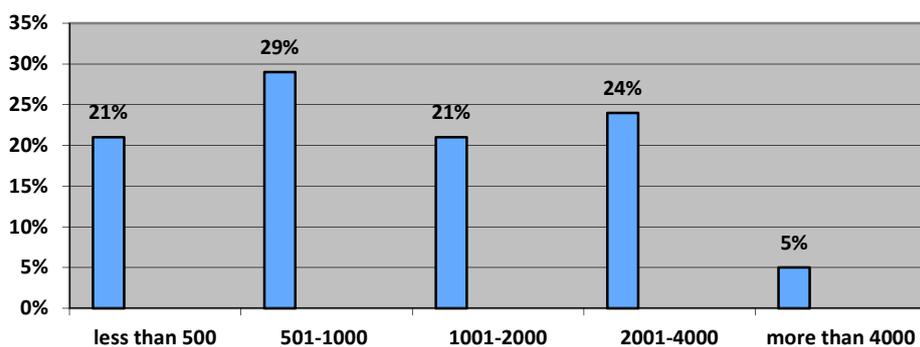
It can be seen from Graph 12 that there is no substantial difference between this figure and the previous Graph 11. The two figures are almost comparable.

If we exclude those 89 professors who are affiliated with more than one university, we can also compare average salaries between public and private universities, and between public universities in the regions and public universities in Tbilisi. Unfortunately, the universities did not provide us with average salary figures when we requested it for the desk research questionnaires. As a result we were obliged to make such comparisons based on the academic personnel questionnaires (See Graph 15 and Graph 16).

**Graph 15. Average Academic Income at Public Universities in 2013 (N=136).**



**Graph 16. Average Academic Income at Private Universities in 2013 (N=38)**

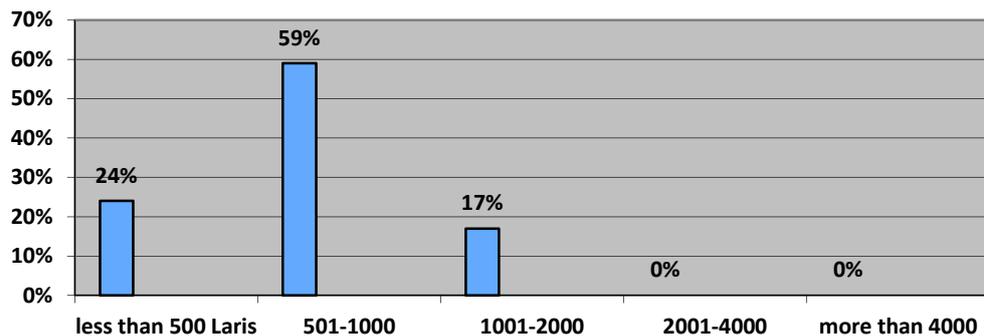


Independent Samples T-Test showed that there was no statistically significant difference between the average academic incomes between private and public universities. However, this might be due to the fact that the number of professors affiliated with private universities was very small (N=38).

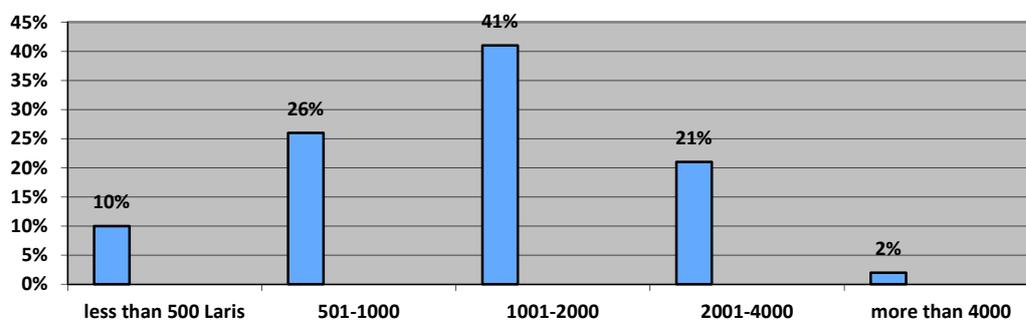
The same Independent Samples T-Test showed that there is a substantial difference between the average academic incomes between Tbilisi and the regions. Even the small sample (N=174) showed that the significant difference ( $P < 0.01$ ) exists. Average academic income in Tbilisi was 793 laris more than in the regions.

You can visually see the difference between Graph 17 and Graph 18.

**Graph 17. Average Academic Income at the Regional Universities in 2013 (N=46).**



**Graph 18. Average Academic Income at the Universities in Tbilisi in 2013 (N=128).**



The issue of low salaries figured prominently during the in-depth interviews and focus group discussions. Senior faculty with whom we conducted interviews strongly emphasized the need for increased salaries for academic personnel. The special emphasis was put on historical and socio-economic factors that drew Georgia behind in terms of scientific output. During the tumultuous years of the 1990s, after the collapse of the Soviet Union and successive civil wars, only the most enthusiastic and motivated professors decided to stay in academia and pursue careers in social sciences. The remuneration was largely symbolic and many professors sought employment outside academia, mainly in the NGO sector.

The situation changed radically after the 2003 Rose Revolution, when a large-scale education reform was launched and decisive measures were taken to curb corruption, improve management, and raise scientific and educational standards. Several public institutions dramatically raised the salaries of academic personnel to relatively decent levels (for Georgian standards). However, as one senior faculty member from a well-respected public university noted during the in-depth interview, the salaries are still not sufficient for academic personnel to dedicate their lives fully to a scientific career.

The similar concern was raised by a senior administration member at one of the reformed public universities. During the in-depth interview, he explained:

“Still [today] a lot of people who can be very successful in academia cannot fully engage in academic activities, as they see more opportunities elsewhere. It happens quite often that an academic career is their second priority, not the first. If there will be considerable financial interest in this sphere and the academic and non-academic career will be equally promising, I think that productivity will be duly increased and the general situation will improve.”

Selected professors and administration members at the private institutions also shared this concern. One of the top administration members at a high-level private university in Tbilisi pointed out the additional shortcomings in private institutions vis-à-vis public institutions: Professors at private universities are not compensated financially for research time. When asked what is necessary to conduct high-quality research to publish an article, she answered that:

“Unfortunately, this cannot be done at private universities, as they are maintained by the fees paid by students. At the public universities, for professors who teach and conduct research at the same time, research is deemed as part of an overall work load. At private universities this is extremely unprofitable. If there was such an opportunity, I would not teach 18 classes a week, but I would rather teach five and dedicate the rest of the time to research.”

This leads us to the direct problem for social science research in Georgia: The lack of funding for scientific (different from educational) activities. Private universities have even less luxury to allocate financial resources specifically for research activities. This is why at private universities the method of remuneration is linked to teaching hours.

#### **b) Lack of funding for social science research projects**

Several of our respondents remarked that there is a lack of funding for social science research projects at the faculty and university level. The Ministry of Education provides some funding through the Rustaveli Foundation, but in most cases, public universities and social science faculties do not allocate funding specifically for conducting social science research.

Private funding usually comes from international donors, not from local sources or private universities. To explore the situation regarding project funding, we designed a questionnaire that was distributed among the major donor organizations. Coupled with faculty-level desk-research

questionnaires, in-depth interviews, and focus groups discussions, these questionnaires helped to assess the general situation regarding funding opportunities.

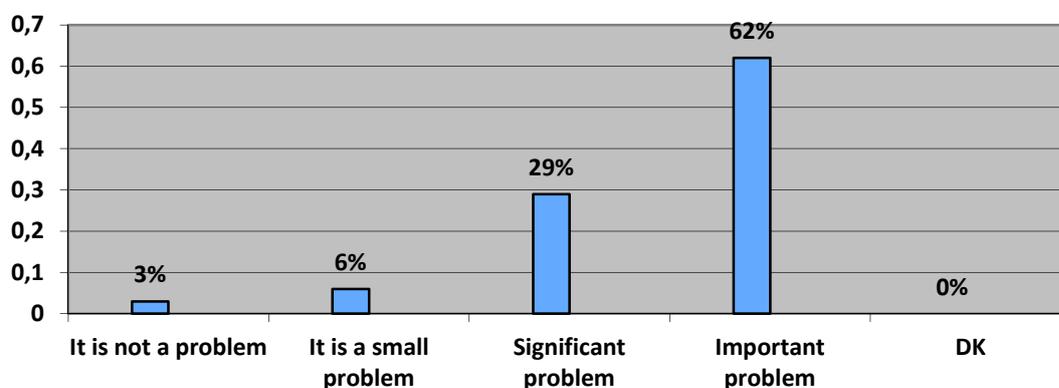
At Tbilisi State University, the most financially endowed public university, there is no funding provided at the university level, as remarked by senior administration official. She remarked the following:

“The university does not fund research projects at all. This means that you sometimes rely on your own finances. You cannot always rely on the funding from the donor, you have to conduct research by all means and accomplish the jobs you started.”

The same administration official also noted that without the additional funding for research projects it is virtually impossible to conduct research in social science. One needs to conduct interviews, organize focus group discussions, administer questionnaires, etc. All this requires financial resources that cannot be allocated from the salaries of researchers.

The Opinion Survey also showed that 91 %of researchers think that the lack of funds allocated for research is a major problem in conducting social science research, as seen on Graph 19.

**Graph 19. Is allocating funds for research a major problem? (N=263)**



### **c) The lack of infrastructure**

The complaints regarding infrastructure are mainly focused on the absence of research libraries and inaccessibility of international electronic databases other than JSTOR and EBSCO.

Regarding research libraries, a senior professor at Ilia State University noted the following:

“It comes back to another deficit working here, although it’s becoming less and less so, I think:

That is the access to research libraries. There are places where you can get access to JSTOR, and it's easier if you want to get an article in PDF form, since there's a lot of literature available in electronic form. But it's not quite the same as being in a real university library: There are several libraries [in Georgia] that are fairly well equipped, but this is still of a drawback, the access to international literature.”

The senior administration official of the same university also adds that even the accessibility to electronic databases such as JSTOR and EBSCO is insufficient for conducting a high-quality research:

“JSTOR and EBSCO are archives. It is wholly different matter when you have access to the most important contemporary publications in the field,” he explained.

Unfortunately, we did not conduct an extensive research on libraries, but this is also an area which the state and private donors have to explore more and invest in.

### **Institutional Factors**

#### **a) Limited time for conducting research**

Another institutional factor that hinders social science research in Georgia is the lack of time for research activities. This is closely related to the problem of low salaries and the lack of research grants, but analytically it is a separate problem.

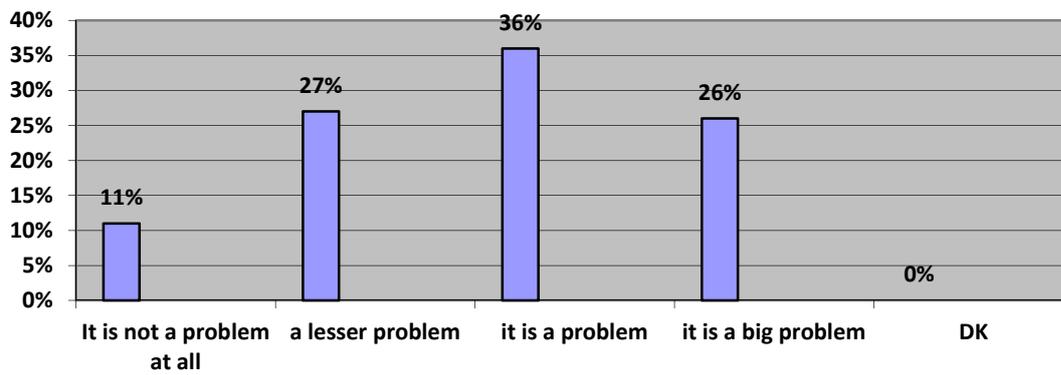
It can be divided into two parts: First, there is a lack of time for conducting research because professors have an excessive teaching load, and second, a lack of time because of administrative or non-academic duties. The high-ranking professors from Ilia State University remarked the following, regarding this problem:

“It is difficult to survive on a salary of being a researcher alone. Many scholars don't do only that. Many of them either work in university administration or they have NGOs or they work in government and do other things, which I think hinders them dedicating themselves full-time for the research.”

The same problem was pointed out by the professors and administrative personnel of Tbilisi State University, Telavi State University, and other public institutions. The private institutions also noted that professors have an incentive to increase their teaching load because it's the only way for them to increase their salary.

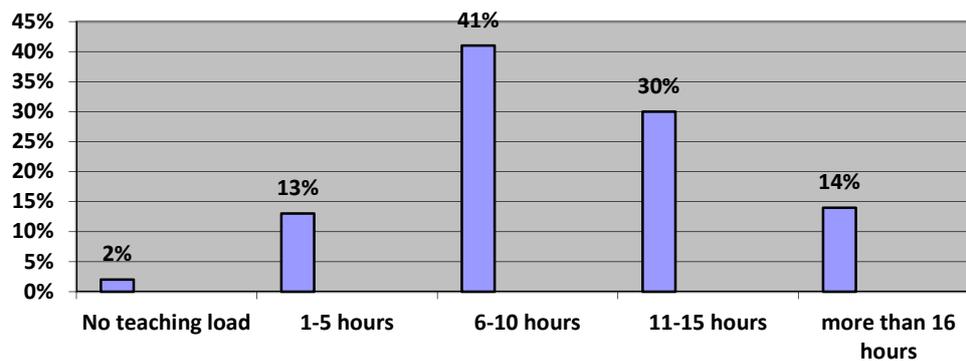
Opinion surveys also revealed that limited time for research is a major problem for professors. Graph 20 shows that 62 % of professors think that a heavy teaching load is a problem for conducting social science research.

Graph 20. Is Teaching load a problem for conducting social science research? (N=251)



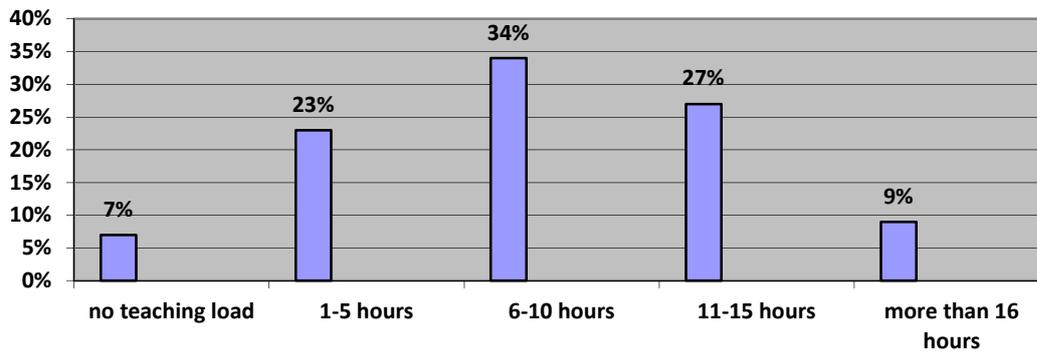
Graph 21 shows the actual teaching load of the selected professors.

Graph 21. Teaching Load of Professors in 2013 in a week (N=272)

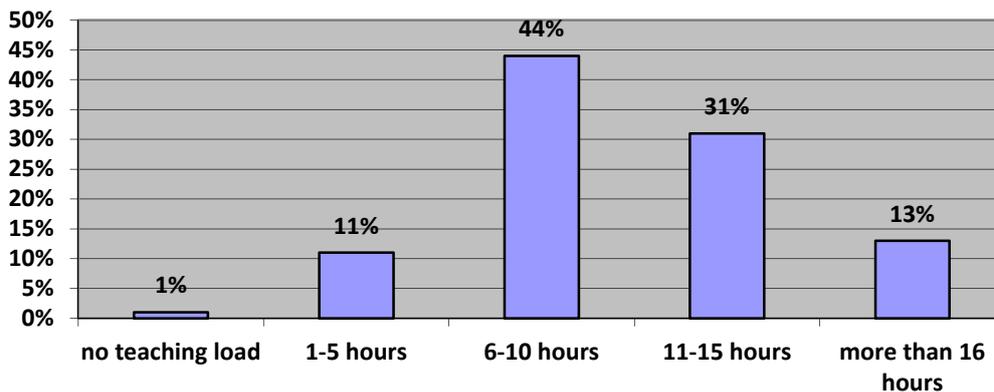


Our small sample (N=174), which excluded those professors affiliated at more than one university, showed that there is a relationship between the teaching hours at private and public universities significant at  $P < 0.05$  (two-tailed test). Professors who are affiliated at public universities tend to have heavier teaching loads than their peers who are affiliated at private universities (the mean difference was 1.65). The differences can be seen in Graph 22 and Graph 23.

**Graph 22. Teaching Load at Private Universities in 2013 in a week (N=44).**



**Graph 23. Teaching Load at Public Universities in 2013 in a week (N=139).**

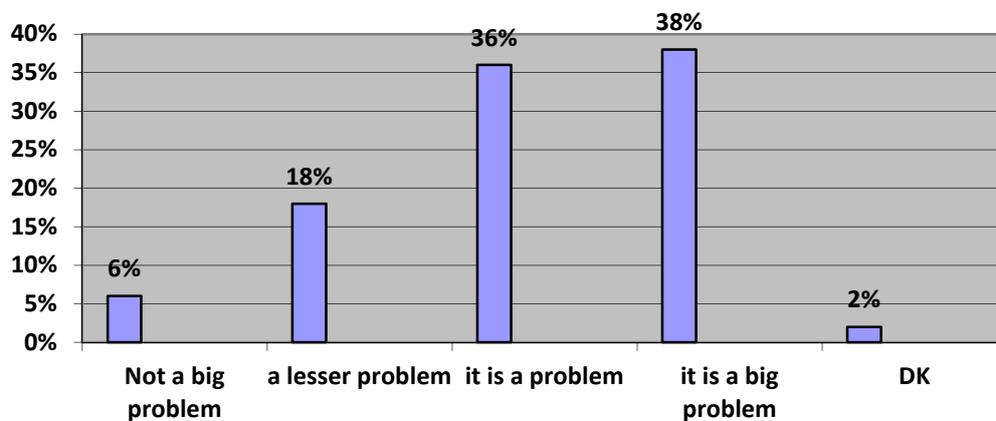


However, this difference does not necessarily mean that private universities tend to prioritize research more. On the contrary: Neither private nor public universities tend to prioritize research. Heavy teaching loads at both types of universities shows that research activities are sidelined in favor of lecturing.

The small sample (N=174) shows that there is also a difference between teaching loads at regional universities and Tbilisi ( $p < 0.05$ ). Regional universities tend to have heavier teaching loads, but if we compare the bigger sample (N=272), the difference becomes not statistically significant. It means that those who work in more than one university in Tbilisi actually have almost the same teaching load as their peers in the regions.

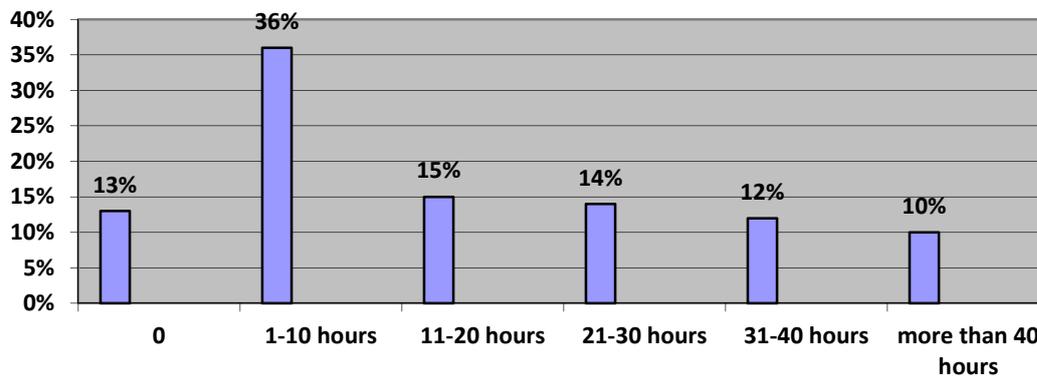
As noted above, another aspect of the limited time problem is that professors very often engage in non-academic activities.

**Graph 24. Is a heavy, non-academic work load a problem for conducting social science research? (N=252)**



Graph 24 shows that 74 % of the respondents think that a heavy, non-academic workload is a problem for conducting social science research.

**Graph 25. Hours Spent on Non-academic Activities in 2013 in a week (N=240)**



Graph 25 shows that only 13 % of professors did not engage in non-academic activities.

These non-academic activities are very closely related to income from non-academic activities, as seen on Table 2. Which means that the more time spent on the non-academic activities, the person's income from non-academic activities is higher. This means that the time spent on non-academic work is mainly spent on income-generating activities.

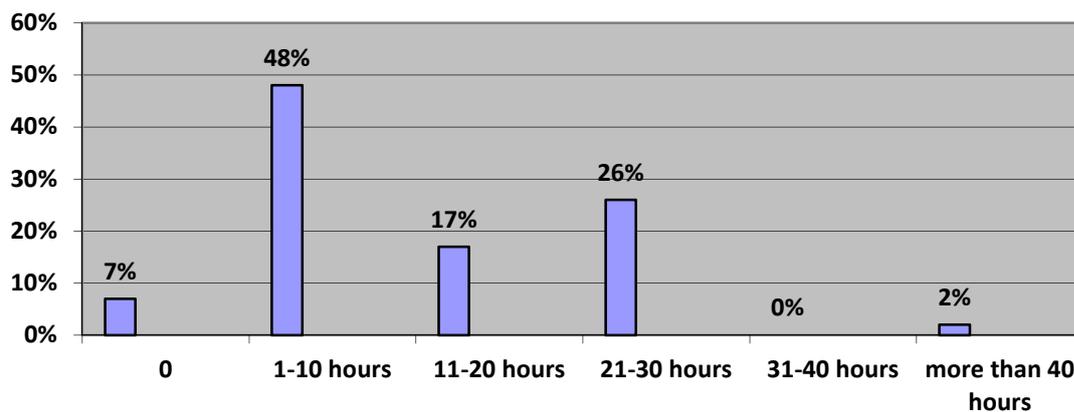
**Table 2. Correlation between Average monthly income from Non-academic Activities (2013) and Non-Academic Workload (2013)**

		Average monthly income from non-academic activities(2013)	Non-Academic Workload(2013)
Average monthly income from non-academic activities(2013)	Pearson Correlation	1	,469**
	Sig. (2-tailed)		,000
	N	188	177
Non-Academic Workload(2013)	Pearson Correlation	,469**	1
	Sig. (2-tailed)	,000	
	N	177	240

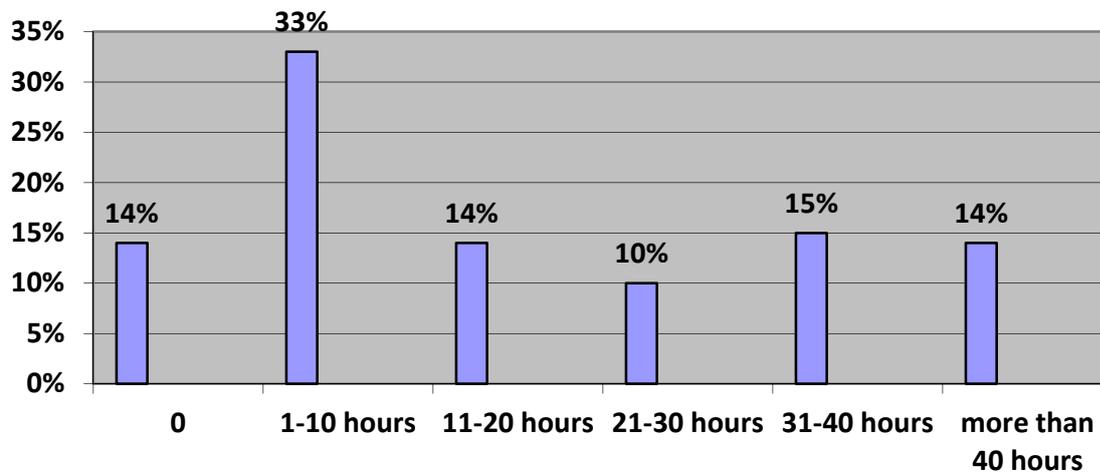
\*\* . Correlation is significant at the 0.01 level (2-tailed).

The average time spent on non-academic activities amounted to about 17 hours a week in Tbilisi, and 12.5 hours a week in the regions. The difference between Tbilisi and regions was significant at  $p < 0.05$ . Graph 26 and Graph 27 show the difference between the regions and the capital in this respect. It may mean that there are more opportunities in Tbilisi than in the regions which an average professor can use to earn more income.

**Graph 26. Hours Spent on Nonacademic Activities in the regions in 2013 in a week (N=46)**

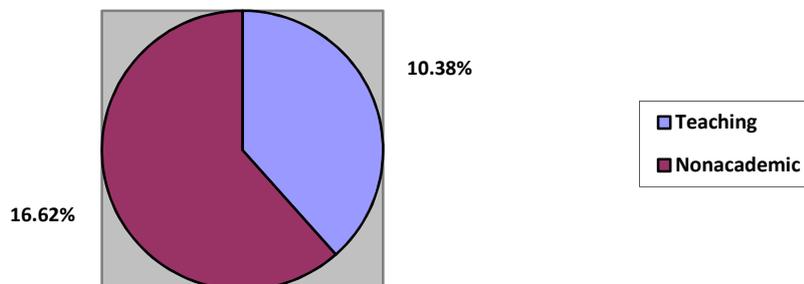


**Graph 27. Hours Spent on Nonacademic Activities in Tbilisi in 2013 in a week (N=194)**



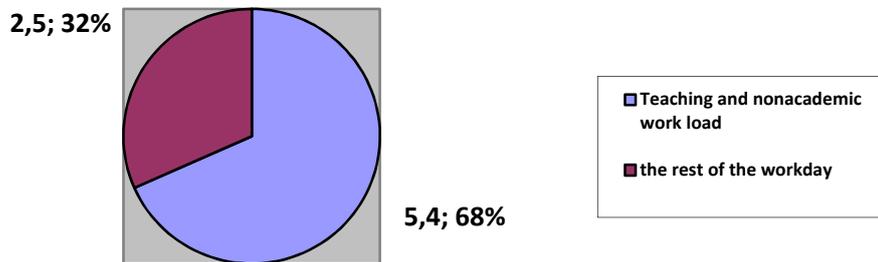
We can also compare between non-academic activities and teaching load (results are shown on Graph 28).

**Graph 28. Average Hours Spent on Teaching and Non-Academic Activities in 2013 in a week (N=240)**



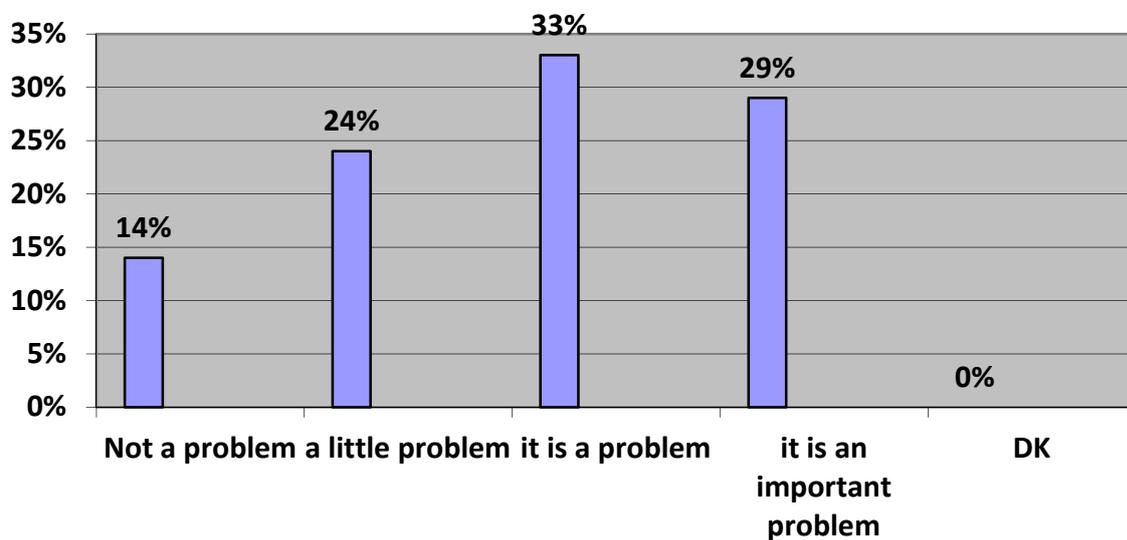
Overall, it can be inferred that on average, about 5.4 hours a day are spent on teaching and non-academic activities combined. This is the 68 % of the workday. Only 2.5 hours a day could be allocated to research activities (as shown on Graph 29). If we consider the fact that besides the actual teaching there are other duties related to teaching (preparing lectures, midterms and exams, correcting the students' work, etc.), there is virtually no time left for actual research. The only way an average professor could allocate her/his time to research was to work beyond the 8-hour work day and/or his non-academic activities had to be somehow related to research (NGO projects that involve the collection of data, working in the field on which one is also doing researching, etc.).

Graph 29. Average Hours Spent on Teaching and Non Academic Activities versus the rest of the Work day in 2013



Graph 30 shows that for 62 % of the respondents, having no time for research posed a problem for conducting social science research.

Graph 30. Is no time for research a problem? (N=260)



**b) Weak enforcement mechanisms at the universities for research promotion**

Several senior faculty and administration members noted that professors are not evaluated on their publishing. The senior administration official at Tbilisi State University remarked the following:

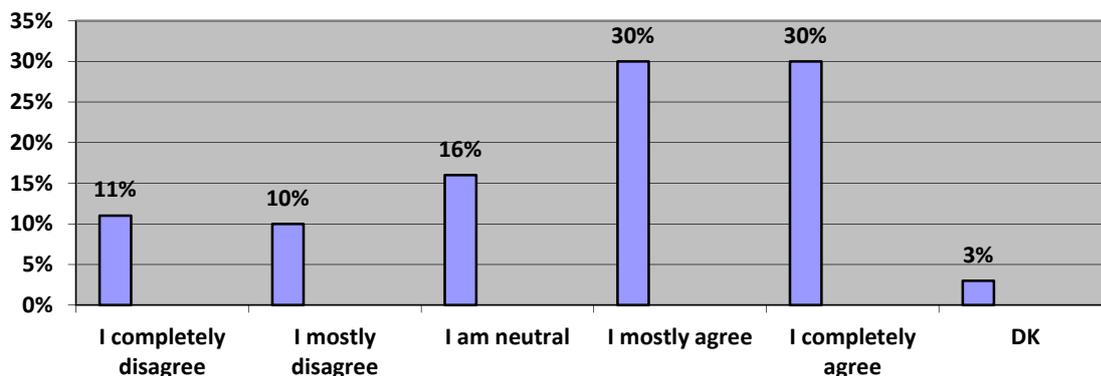
“Professors do not realize that their position, apart from teaching responsibilities, also requires research. I suspect that many professors do not think they are required to conduct research. But in reality, in the contract it is stipulated that professors have to both --teach and conduct scientific research.”

The same respondent also thinks that it is the university’s fault. He said that no one monitors who is conducting research and who is not, and it is not reflected in their salaries. The professors are complicit in the maintenance of the wrongful system as they do not demand the administration change the rules.

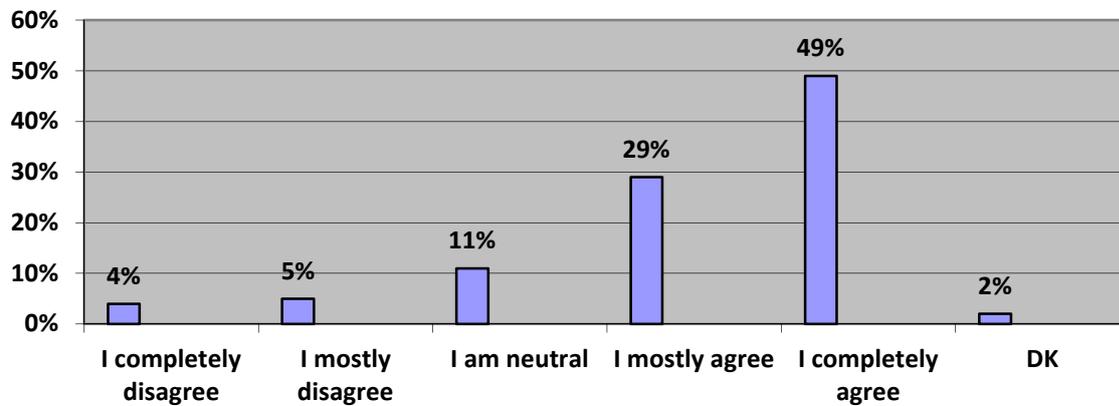
One senior administration official and one senior professor at Ilia State University argued the opposite: They maintained that at Ilia State University, the research output is highly reflected in the academic positions and hence, in their salaries.

Professors themselves had divided opinions on whether or not one’s scientific output should be reflected in one’s salary and academic promotion.

**Graph 31. Publishing articles in journals with impact factor should be reflected on one’s salary (N=232)**



**Graph 32. Publishing articles in journals with impact factor should be reflected on one's academic promotion (N=234)**



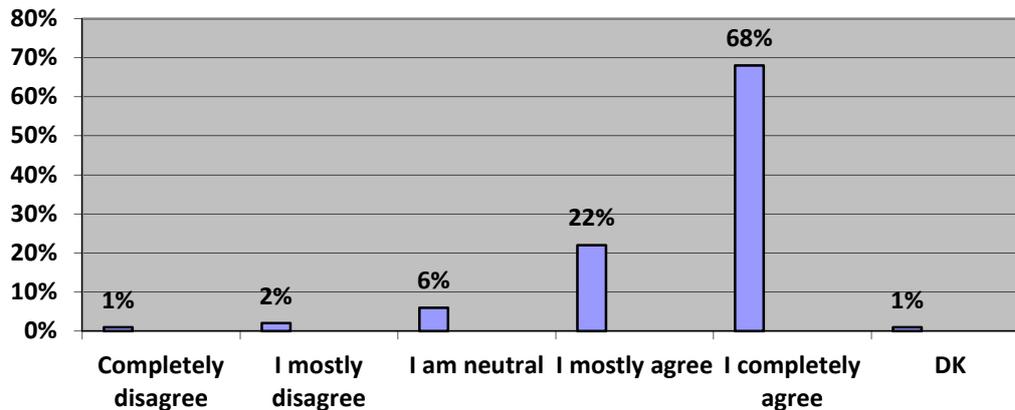
As it can be seen on Graph 31 and Graph 32, 60 % of surveyed professors agree that scientific output should be reflected in one's remuneration, while 78 % agree that it should be reflected in one's academic promotion. Respectively, 40 % and 22 % of professors either disagree or don't have an opinion on this matter. During the focus group interviews, this issue also figured prominently as some administration officials remarked that professors don't generally realize that they are hired for conducting research, not only for teaching.

Overall, it can be said that there is still no general consensus on this issue, regardless of the fact that the majority of professors agree that remuneration and academic promotion should be tied to scientific output.

To sum up, the problem is twofold: On the one hand, there are no mechanisms that would give professors incentives to publish in journals with impact factor (and there is no strong consensus in the academic whether or not the existence of such mechanisms is justified), and on the other hand, professors themselves don't feel themselves obliged to publish. The latter claim can be also corroborated by the opinion surveys of professors that we conducted within the academic personnel surveys.

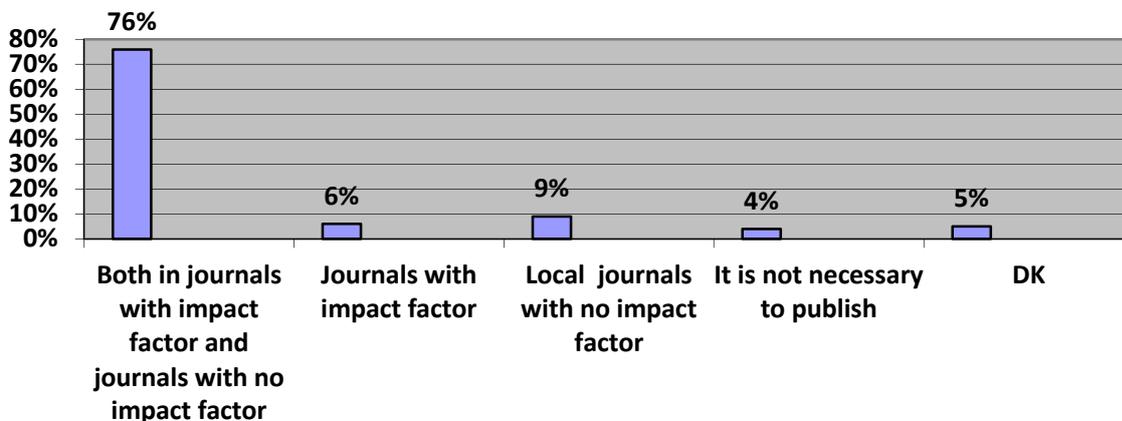
The survey of professors' opinions shows that there is a general agreement that publishing scientific articles is necessary for one's academic position. Graph 33 shows that 90 % of the surveyed 250 social scientists agree that publishing scientific articles is necessary for their academic position. There are 9 % of academics who either disagree or stay reluctant towards the question.

**Graph 33. Publishing scientific articles is necessary for my academic position (N=250)**



Majority of the professors also agree that publishing in journals with impact factor is sufficient for their academic positions.

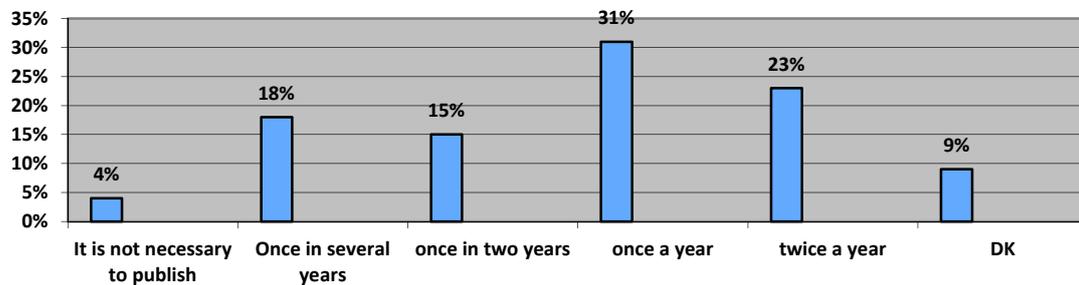
**Graph 34. In what type of academic journals is it sufficient to publish scientific articles? (N=250)**



Graph 34 shows that 82 % of professors believe that it is sufficient to publish in journals with impact factor. Only 9 % think that publishing in local journals with no impact factor will be sufficient for one’s academic position. 4 % doesn’t think it is necessary to publish and another 5 % doesn’t have an answer to the question.

When it comes to the issue of the frequency of publishing in scientific journals, opinion is strongly divided. Graph 35 shows that only 54 % of professors think that one should publish at least once a year. 18 % of professors believe that publishing once every several years will be sufficient. 9 % does not have an opinion on this matter.

**Graph 35. How often a scientist in your academic positions should publish in the journals with impact factor? (N=243)**



Generally, the statistics show that the majority of professors agree on the principle that publishing is necessary, but there is no strong consensus on how often they should publish. The reason for this, again, lies in the lack of incentives and in the fact that there are no monitoring and evaluation mechanisms put in place by the universities. The latter would counterbalance the lack of consensus among the professors on the issues of the frequency of publishing scientific journals.

### **c) Inadequate and unjust criteria for distributing state grants**

During the in-depth interviews, several academic and administration personnel complained that the government (and especially, the Rustaveli Foundation) does not fairly distribute research grants. For instance, a senior academic from Ilia State University remarked:

“I think some of the Georgian government resources for research funding are aimed as welfare programs for senior academics, and is biased towards that.”

The top administration member of the same university also remarked that the Rustaveli Foundation is not competent in certain spheres to adequately assess the social science research projects. A similar concern was raised by a senior professor at Tbilisi State University:

“The Ministry of Education has to move from political preferences to objective measurements. The universities must be assessed according to the concrete scientific outputs they produce. And the Ministry of Education has to provide Bloc Grants. These grants can be meant for infrastructure development, or for supporting research activities, or for some other activities. Universities have to decide by themselves where they want to spend the money.”

Further investigation is required to explore the fairness of state grant distribution, especially since the issue appears quite politically charged.

**d) Weak Emphasis on Conducting Research at the Master's level and Poor Quality Doctoral Programs**

During the focus group interviews with the representatives of the private universities, the issue of low quality Master's and PhD programs also was discussed. An administration member remarked that at some universities, students are not required to conduct research at the Master's level and that it is a major impediment for the development of their research skills. The issue is also closely related to the problem of weak methodology courses at the universities. One administration member remarked that there is only one faculty member at their university who teaches methodology courses, and she was sent to a Western university to learn social science methodology. Otherwise, American and European scholars are usually invited to teach methodology courses at local universities.

Two faculty members at Ilia State University also recalled that their success in publishing articles in peer-reviewed journals was very much related to the methodological training they underwent during their fellowships at American universities. The same opportunity was largely absent at Georgian universities.

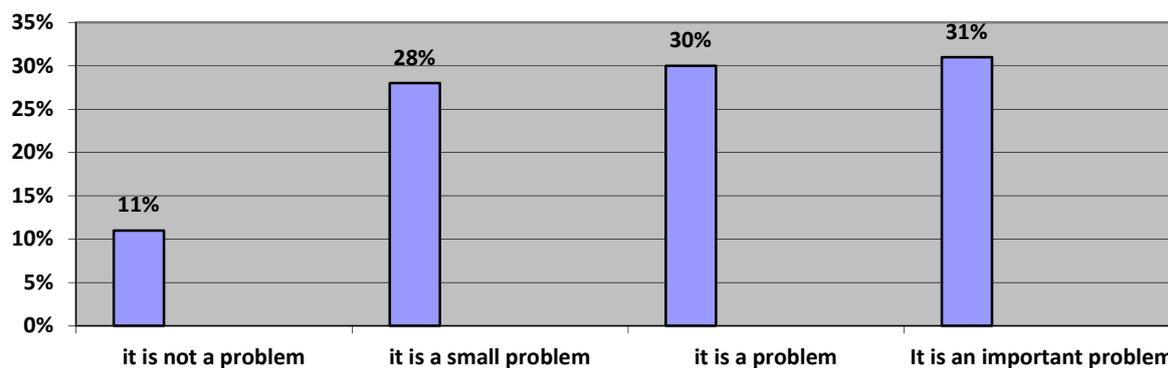
**e) The absence of a lively and viable academic environment**

A senior professor at Ilia State University remarked that academic environment plays a major role in promoting social science research. He described the years he spent abroad and attributed his success early in his career to the academic discussions and exchange of ideas occurring at his host university.

We think that the problem in Georgian universities lies not only in the lack of ideas being exchanged (and the quality of these ideas), but also the lack of environment. Environment as a whole has a greater impact on scientific output as it enables successful collaborations between qualified scholars. In the Georgian context, the apparent lack of qualified researchers makes it difficult to undertake projects that require collaborative effort.

Graph 36 shows that 61% of respondents think that the lack of highly qualified researchers is a problem for conducting successful social scientific research.

Graph 36. Is the lack of highly qualified researchers a problem? (N=246)



### Localized Academic Environment

#### a) The Lack of International Contacts

A senior professor at Tbilisi State University noted that his scientific productivity is also linked to his having international contacts. Such contacts ensure that researchers are invited to participate in international projects, which as a rule lead to publications. International contacts and a membership in international professional associations are also important factors for gaining more information about available opportunities and grants.

A senior professor at Ilia State University remarked that one of the reasons he is published in one of the top scientific journals in his discipline is good contacts: “When you are part of their team, they repeatedly invite you to publish,” he noted.

A senior professor at Free University also emphasized the importance of international contacts. When asked how he gets information to get involved in research projects, he responded that: “It comes mostly from personal contacts, traditional partners. Sometimes these invitations are coming from new persons, but these persons are also mostly the acquaintances of my acquaintances.”

### The Soviet Legacy

#### a) Weak Academic Traditions

One of the most serious problems that were repeatedly stressed by faculty members and administration personnel is the lack of academic tradition in social sciences. A senior professor at Batumi State University explained: “We don’t have experience and that’s why there is relatively low productivity in social science research.”

A senior professor at Ilia State University remarked: “Understanding theoretical approaches that are required when publishing abroad -- the tradition of writing in social science... Here in Georgia, it is very much narrative, declarative. And that is considered very old-fashioned in most disciplines, on the international level. You have to be able to frame your question within a broader theoretical or conceptual framework. And that’s very difficult for anybody to do, but especially if you are not coming from that background.”

A psychology professor at one of the private universities in Tbilisi noted some of the problems characteristic of his discipline and of social sciences in general in Georgia. He said that members of the Georgian psychology research community are stuck using old theoretical paradigms, such as the “Uznadze School of Psychology” that was popular during Soviet times and that is still considered a dominant paradigm.

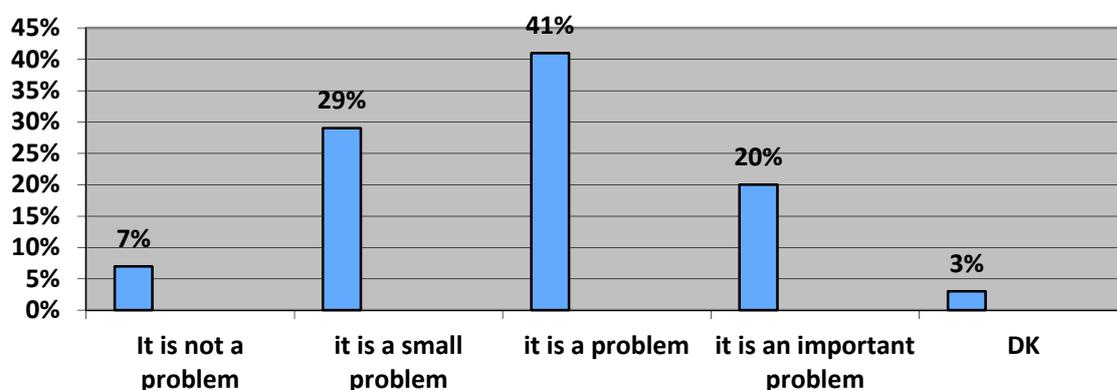
One of the main indicators that there is a problem with academic tradition was that universities often wrongfully assigned their professors to the discipline of social science. GRASS researcher had to independently check the professors’ specialization to build an adequate database.

The second problem is poor knowledge of statistics and low regard for quantitative analysis. The psychology professor in Tbilisi explained that: “

It is somehow presumed in Georgia that when you go to social sciences, you don’t have to know math. There are very few exceptions when social scientists possess the mathematical apparatus for concrete social scientific application. [Math] is very important, though.”

One senior professor at Ilia State University also pointed out the importance of academic environment for increasing the scientific output in social sciences. When asked what he specifically meant by academic environment, he remarked that there is an absence of professional associations. Such associations would ensure meeting international quality standards and determine what can be considered actual social science research.

**Graph 37. Is the requirement for the methodological part of the research a problem? (N=249)**



Graph 37 shows that 61% of the respondents think that the methodological requirements of research projects are very demanding and pose a challenge for Georgian social science researchers.

### b)The Language Barrier

The language barrier was named one of the most important factors inhibiting scientific productivity in social sciences in Georgia. A senior academic at Ilia State University remarked that even for those who know English well, it's difficult to meet the standards of written English that is acceptable for international publishing; meanwhile international editing services are expensive and local universities do not provide such services.

Graph 38 shows the level of English-language writing skills among the surveyed professors. Although these evaluations are highly subjective, we assumed that only the answer “very good” indicated that there is no language-barrier when it comes to academic writing.

**Graph 38. The level of English-language Writing Skills (N=242)**

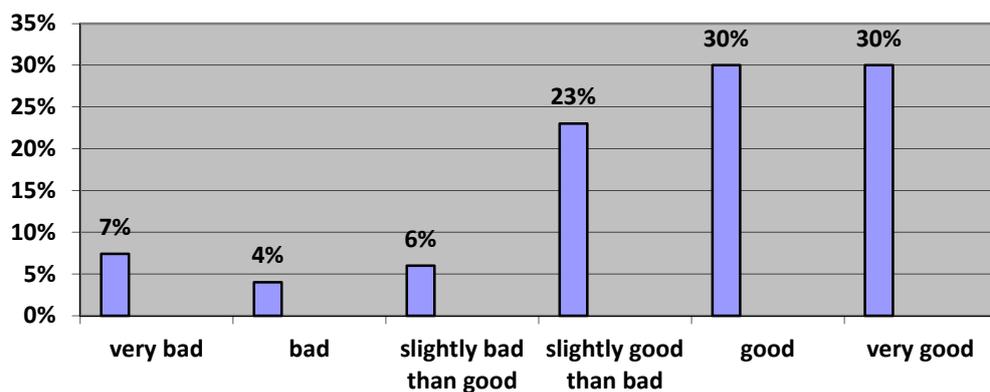


Table 3 shows that there is an inverse correlation between professors' age and the level of English-language writing skills, albeit not a very strong one. It can be inferred that the greater a professor's age, the less likely it is that she/he will have good English-language writing skills. This is logical if we consider the fact that older professors were educated in Soviet academia, which was insulated from international academia and possessing English-language writing skills was not necessary.

**Table 3. Correlation between Professors' Age and The level of English-language writing skills**

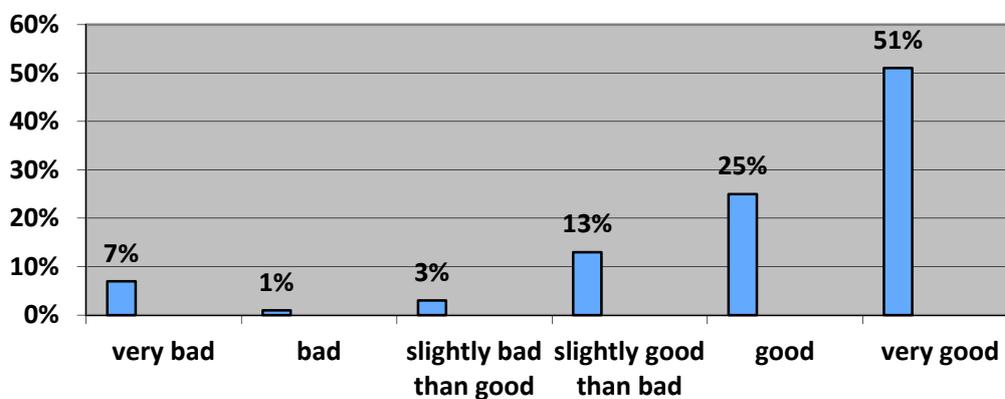
		asaki	wera(ucxoenis codna)
asaki	Pearson Correlation	1	-,327**
	Sig. (2-tailed)		,000
	N	254	220
wera(ucxoenis codna)	Pearson Correlation	-,327**	1
	Sig. (2-tailed)	,000	
	N	220	227

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

One professor from Batumi University argued that academic personnel have a language barrier problem that inhibits them from reading contemporary foreign-language literature, and that that is the reason why there is no professional development.

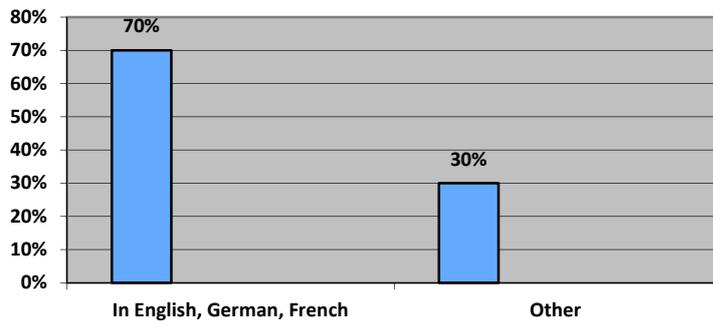
The English-language reading skills of the surveyed professors can be seen on Graph 39.

**Graph 39. The level of English-language Reading Skills (N=227)**



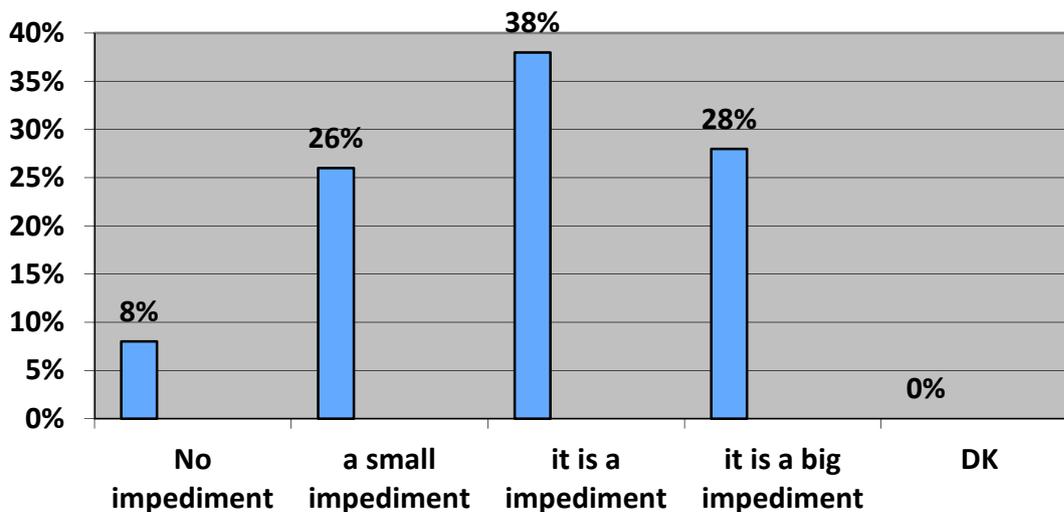
25 % of professors said that their English-language reading skills are good, and only 51 % said that their reading skills are very good. Additionally, we checked in what language professors read scientific literature. Graph 40 shows that 30 % of professors read academic journals written in languages other than English, German, or French.

**Graph 40. In what language do you read academic journals most often? (N=246)**



Opinion surveys also show that scholars perceive the lack of foreign language skills as a major impediment to publishing in journals with impact factor. Graph 41 shows that 66 % of the respondents think it is an impediment for Georgian scholars.

**Graph 41. Is poor knowledge of foreign languages a major impediment to publishing articles in journals with impact factors for the scholars around you? (N=256)**



### **The Individual Factors that Influence the Productivity of Social Science Research in Georgia**

In the previous chapter, we were concerned with the structural factors that influence social scientific output in Georgia. Now we will examine individual factors that determine the productivity of social science researchers; we are interested in what makes individual professors successful in the Georgian academic environment. We will take the number of Scholar-listed publications (2010-2013) and GRASS Index as dependent variables.

We will deploy the following independent variables:

- Study abroad experience<sup>2</sup>: A dichotomous variable, where 0 amounts to no study abroad experience and 1 amounts to spending a part or whole of the Bachelor's, Master's, or PhD period abroad. We only counted the years spent in Western, non-former Soviet academic institutions.
- The number of training courses attended abroad: We asked the respondents to provide the number of training courses related to their specialization that they attended abroad in their entire lifetime.
- The level of English-language writing skills: An ordinal variable which has five values, see Graph 16.
- Income from academic sources: We only take into account academic income in the first three years (2010, 2011, and 2012) as the dependent variable will only measure the number of publications in the last two years (2012 and 2013)
- Work load: We will only measure the work load (both academic and non-academic) for the first three years (2010, 2011, and 2012). Note that we could add time spent on research activities as another variable, but the value of it depends on the value of the dependent variable (the more publications a professor is working on, the more time she/he will spend on research). So we used the work load as a measure of time available for research activities for a social science researcher.
- Location: A dichotomous variable, where 0 amounts to being located in the regions and 1 amounts to being located in Tbilisi.
- Experience: The number of years spent in academia. Those who have less than 3 years in academia will be excluded from the dataset.
- Ownership type of universities: A dichotomous variable where 0 amounts to public universities and 1 amounts to private universities. As for the professors who are affiliated with more than one university, we only counted their primary affiliation (which they listed in the questionnaire).
- Tradition: A dichotomous variable where 1 amounts to those disciplines where there was an academic tradition during Soviet times (psychology, sociology/demography, and education), while the rest of the disciplines will be counted as 0.
- Academic Position: An ordinal variable with 3 values: 1 – full professor, 2- associate professor, 3 – assistant professor. We use this variable in order to control the different qualifications and scientific prowess of professors in their respective disciplines.

The initial number of professors in the sample was 261. We excluded 17 professors from the sample as they had less than 3 years work experience in academia.

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<sup>2</sup>Unfortunately, we could not also measure international academic fellowships of individual professors as academic personnel questionnaire didn't include this question. However, we think that the "studying abroad" variable will account for some of the variation in this sphere. In the rest of the cases, the data was obtained from our academic personnel questionnaire.

### Dependent Variable: The Number of Scholar-Listed Publications

We were very limited in utilizing the dependent variable for statistical analysis since the cases were not normally distributed. Since we couldn't use linear regression, we tried to measure the scientific productivity by using binary logistic model of regression. We transformed the initial dependent variable into binary variable with two values: 0 indicated no publications, and 1 indicated at least one publication in the three year period (2011, 2012, 2013). We measured only those publications that are listed in Google Scholar. The Results are shown on Table 4.

**Table 4. Binary Logistic Regression for Determining the Factors that Influence the Publications**

	B	S.E.	Wald	df	Sig.	Exp(B)
Ownership type	-,150	,491	,094	1	,760	,860
Tradition	,893	,480	3,455	1	,063	2,442
Workload	,004	,016	,068	1	,794	1,004
Experience	-,016	,024	,469	1	,493	,984
Study Abroad	,263	,505	,271	1	,603	1,301
Location	19,031	8659,596	,000	1	,998	184041599,818
Trainings	,000	,048	,000	1	,993	1,000
Academic Income	,000	,000	2,588	1	,108	1,000
English	,660	,249	7,007	1	,008	1,934
Academic Position	-,588	,314	3,508	1	,061	,556
Constant	-22,408	8659,596	,000	1	,998	,000

As seen from Table 4, English-language writing skills turned out to be the only statistically significant variable (significant at  $p < 0.01$ ) influencing scientific output. English-language writing skills are very much related to the quality of study abroad experience -- the factor we were unable to measure properly in the study. English-language writing skills contribute to the productivity of researchers because they enable professors to publish articles in English that will be easily noticed and placed in the Google Scholar database.

Note that the transformed dependent variable didn't completely reflect the level of scientific productivity among Georgian professors and hence, it gives incomplete results. However, it is important to know that English-language writing skills tend to be an influential factor. Further statistical analysis of the individual factors that determine social scientific output in Georgia would require more nuanced data.

# Recommendations by GRASS

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*For our recommendations, it is crucial to define what we mean by 'quality scientific output,' since different interpretations can result in qualitatively different results. By quality publications we mean publications which are either a) published in peer-reviewed journals with impact factor taken into account, or b) cited in such journals. As we already remarked, the average number of self-reported publications across all the 277 is 4.66, which is 7.87 times higher than their average number of Scholar-listed publications (0.59) and 61.4 times higher than Scopus-listed (0.076). In other words, the number of publications reported by a professor doesn't reflect his/her scientific impact.*

## At the University Level

### *Academic Income*

- a. The salaries of faculty members should be increased to reasonable levels. Professors shouldn't have strong economic incentives to dedicate their time and energy to non-academic activities. This is especially important if we consider that the statistical analysis showed that academic income is one of the most important predictors of high research productivity. The especially low income at regional universities, as seen in Graph 15, also poses a major challenge for promoting social scientific research in the regions.
- b. Increasing academic salaries should come with the guarantee that professors will not engage in non-academic activities that are not approved by the university. Professors should also only be allowed to teach a limited number of courses at other universities, approved by their primary university. Only in this way can universities make sure that increasing professors' salaries will translate into higher research productivity.
- c. Research-work should be reflected in salaries, and especially scientific productivity meeting international standards should influence a professor's salary. This will encourage scientists to a) perform high-quality research, b) publish their research results in high-quality peer-reviewed journals, c) perform research on a regular basis. The possible ways to implement this are: a) To introduce categories of professors according to various levels of scientific productivity, or b) to give premiums based on scientific output. We personally recommend the second approach since it is more flexible and does not require upgrading or downgrading a professor's status, which might be a sensitive issue. This could be a premium given at the end of the year based on that year's scientific output. Along with recent publications, it is possible to take into account the increased amount of citations of older publications.

### *Teaching Load*

- d. Professors conducting scientific research should be presented the possibility of decreasing their teaching load. As can be seen from Graph 21, about 34 % of the respondents teach more than 10 hours a week. The university administration can implement this option by taking into account a) personal preference (whether or not a person is willing to decrease teaching load), b) previous research record (quantifiable high-quality research output, taking into account the length of academic career, salary, workload, etc.), c) in some cases strong motivation and strong project proposals can be sufficient. This should be reviewed on a yearly basis.

### *Academic Position and Research Output*

- e. Professional academic advancement should be linked with scientific research output. (Advancement from an associate to full professor should be based largely on quantification of high-quality scientific output, for example.)

### *Increased Funding for Research*

- f. Universities should allocate separate funds for research. Regulations on the dispersal and accounting of these funds should become less rigid. There have been instances when money was allocated but not spent due to strict regulations related to the administration of these funds.

### *Encouraging International Contacts*

- g. Universities should encourage and allocate more funds for their academic personnel to participate in international scholarly conferences. This would enhance international scientific contacts. As seen from our data, a big part of high-quality scientific research is produced in collaboration with foreign researchers. However, the universities should control and create a criteria to ensure that researchers participate in high quality conferences. For instance, the list of participants and the history of the conference can be reviewed in order to assess its quality.

### *Exchange Programs to Acquire Academic Traditions in Social Sciences*

- h. An effective way to understand academic tradition might be temporary study or work at foreign universities. Georgian universities should allocate funds to finance exchange programs for qualified and highly-motivated students and faculty members. As well, funds should be allocated for doctoral students to conduct research, study and travel abroad, and enhance their academic ties. This implies also joint financing. (For instance, for a PhD student to work at a foreign university for a year.)

### *Methodology Training*

- i. It is necessary to strengthen teaching of quantitative methods (statistics, programming) at all levels of study (Bachelor's, Master's, Doctoral). Additionally, strengthening teaching field-specific methodology might be important. This is crucial since modern social scientific research is increasingly based on quantitative analysis. The tradition of the corresponding methodology is much weaker in Georgia than in Western countries.
- j. Research assistantships can be granted to students and assigned to the professors who are oriented on conducting research. In this way, students at various levels of education will have the opportunity to increase their research skills.

### *English-Language and Academic Writing Training*

- k. This study showed that it is necessary to increase the opportunities and quality of learning English. The overwhelming majority of high-impact and peer-reviewed journals are currently published in English. Exchange programs and fellowships will provide the best opportunities to improve English language skills. Other methods, such as language courses sponsored by the universities, are also useful.
- l. Universities should strengthen the teaching of academic writing, including academic writing in English. Courses should emphasize basic skills crucial for international peer-reviewed publications such as proper citing, article structure, and scientific rigor. This might also include teaching how to initiate valid and feasible scientific research, defining research question, etc.
- m. It will be helpful if universities create Writing Centers to assist professors with academic writing, help them translate their works into English, and copyedit articles in both Georgian and English.

### *Academic Environment*

- n. One of the problems is that of academic environment. It is important to attract Georgian researchers studying and working abroad as well as foreign specialists to Georgia. These people wouldn't only enhance the teaching level at the universities, but would also facilitate the introduction of international scientific standards and help exchange ideas.

### *Improving Infrastructure*

- o. It would be helpful if the universities increase the quality of their libraries by updating the literature. In some public universities in Tbilisi, for example, libraries containing books in social and political sciences are scattered throughout the city. Bringing them all in one place, or creating a common electronic catalogue, could help the students and researchers have better access to research resources.

### *Promoting Cooperation between Georgian HEIs*

- p. Universities should cooperate in order to promote research productivity. Shared resources will help increase the research output. Various universities possess various expertise capabilities that might be best utilized in cooperation.

### *Research Institutes*

- q. There should be a separate study on the research institutes and their actual role in promoting research in social sciences in Georgia. Unfortunately, within this project it was not possible to undertake an elaborated study of the research institutes.

## **At the Government Level**

### *Creation of a Nation-Wide Incentive System*

- a. The government should create a nation-wide incentive system for Georgian researchers to conduct and produce research of international standards. One model could be the creation of a department-level competition system, which awards various departments in social and political studies based on their research excellence (similar to models in the UK and Poland).
- b. The government should facilitate the creation of a nation-wide ranking system of its universities and academic programs. This will help to establish the quality standards at Georgian universities, which in turn will have a bearing on the university's revenues, and eventually, on research capabilities. Moreover, competition between PhD programs will eventually help to enhance their quality.

### *More Generous and Fair Funding Schemes*

- c. Research shows that academics have a negative view of the Rustaveli Foundation; professors often perceive that the assessment of the submitted proposals is inadequate and unprofessional. GRASS cannot comment whether these allegations are true, as no research was conducted in this direction. However, it is important for the Foundation to improve its reputation.
- d. It has to be ensured that national grant-awarding foundations, such as the Rustaveli Foundation, prioritize the social and political sciences.

### *Infrastructure*

- e. The government should build a major social science library with international scholarly books for research purposes. All social science faculty members of all the universities should have access to the library.

## **Annex 1.**

- f. The government should ensure that the universities have access to the most up-to-date electronic libraries. Without such databases, it becomes difficult to contribute to the social scientific scholarship.
- g. The government should help to create the system of inter-library cooperation, which would ensure that the students could borrow books from the libraries of other universities.

### *Human Resources*

- h. The government can work on attracting human resources to Georgian academic institutions. There can be a program at the Ministry of Education which can a) promote the return of Georgian Western-educated young academics to Georgian HEIs, both public and private, b) promote the recruitment of young non-Georgian professors, who have recently acquired PhD degrees at leading Western HEIs.

### *Promoting Cooperation between Georgian HEIs*

- i. The government can also promote the cooperation between various departments of Georgian HEIs and relevant international scholars. By sharing resources, universities will be able to increase research productivity.

## ANNEX 1

### Limitations of the Study

- It was hard to identify all the country's professors correctly belonging to the social sciences. Universities often wrongfully assigned their professors to the discipline. Those professors who were wrongfully assigned to social sciences were omitted from the sample, but there is the possibility that some of them still remain on the list.
- Many desk-research questionnaires were incomplete. The reason for this is that most of the universities were unable to provide the data about their spending. Several universities didn't complete desk-research questionnaires at all.
- There were several important questions that were not included in the academic personnel questionnaire. The reason for this is that administration of the questionnaires began before in-depth interviews and focus groups discussions took place. For instance, the question about doing fellowships abroad was not in the academic personnel questionnaire, and this made it difficult to analyze the impact of study abroad experience on the scientific output of individual researchers.
- Many academic personnel questionnaires were incomplete. It was partially because during the interviews, respondents refused to answer certain questions that they found too personal. Additionally, those questionnaires that were filled independently and sent electronically (such as by professors living in the regions or abroad), also did not contain answers to all the questions, in most cases.
- Some of the subjects contacted to participate in the academic personnel survey had a negative attitude. There were two reasons why, as reported by the part-time interviewers and GRASS researchers speaking with them: First, several professors thought that some of the questions were too personal (such as the questions regarding their income), and second, they were skeptical about the true aims of the research.
- The Internet databases we used to measure the research productivity of Georgian professors may not include some quality research conducted in Georgia or in other non-English languages. Unfortunately, there were no other, more extensive databases available to give a complete picture of research productivity in Georgia.
- There were technical problems with analyzing the internet databases as well. Sometimes, a researcher was unsure how to spell a professor's name in English and often different variants of spelling gave different results. However, by checking one and the same data several times and by several people, we ensured that such errors did not interfere with the course of the research.