Research

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# Barriers to completion of PhD studies in Georgia

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*Author:*
***Nino Dzotsenidze***
*Reviewer:*
***Irina Abuladze***

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# 1. INTRODUCTION

Higher education systems globally have been changing to meet the needs of knowledge-based economies in recent years. Accordingly, doctoral education, being part of such systems, has transformed drastically all over the world in the last three decades. Today, national education systems, influenced by local and global forces, are characterized by the internalization and massification of higher education (Enders, 2004; Halse 2007; Nerad and Evans, 2014). Highly skilled graduates are viewed as being among the most crucial prerequisites for any country's economic growth, innovation, and technological progress (Auriol, 2010), and the number of PhD students has been increasing worldwide (Cyranoski, Gilbert, Ledford, Nayar, and Yahia, 2011).

However, the expansion of doctoral education has brought about controversial trends in higher education such as the overproduction of PhD graduates and high attrition, which is the problem of low completion rates (Maloshonok and Terentev, 2019). Over the course of a decade, some researchers have emphasized the tendency of an overproduction of doctoral graduates, who are subsequently unable to find jobs in academia (Bao, Kehm, and Ma, 2018; Park, 2005). Other scholars have focused on high attrition rates and argued that low completion rates among PhD students are attributable to the inefficient application of public and private resources (Gardner, 2008; Kehm, 2006).

These two seemingly conflicting concepts of overproduction and high attrition have driven the transformation of doctoral education worldwide. Clearly, different countries are at various stages in the transformation process toward making PhD studies as efficient as possible (Maloshonok & Terentev, 2019). For example, the USA and Japan have been producing PhD holders who are highly qualified but have limited opportunities of employment associated with their qualification, unlike China and India where despite the relatively low quality of doctoral students, the employment opportunities within and outside academia have been high (Cyranoski et al., 2011). According to Cyranoski et al, Germany has set the perfect example in terms of the reorientation of highly qualified doctoral graduates to enter the wider labor market, thereby empowering economic growth and the innovation capacity of the country through adding industry-based doctoral degrees (Cyranoski et al., 2011; Green, 2009). Meanwhile, industry-based or professional doctorates have been emerging in the UK, the USA, Australia, China, and many European countries in recent years (Wildy, Peden, and Chan, 2015) in the fields of architecture, business, education, health, science, humanities, law, and psychology (Bourner, Bowden, and Laing, 2001).

Doctoral attrition or the "drop out" phenomenon is a quite different concept to doctoral overproduction. Indeed, researchers around the world are studying this phenomenon to better understand the individual and institutional factors influencing doctoral students' decisions to drop out from their doctoral studies (Gardner, 2009;

Pyhältö, Toom, Stubb, and Lonka, 2012; Rigler, Bowlin, Sweat, Watts, and Throne, 2017). These factors vary not only from country to country, but also from one field of study to another. For example, according to a study conducted in the USA, the following four constructs influencing doctoral students' attrition rates were highlighted: supervisor-student relationship; socialization and support systems; students' preparedness; and financial support (Rigler et al., 2017). Furthermore, in French-speaking Belgium, the pertinent factors in this regard were named as: marital status; master's degree award; field of study; and funding (Wollast, Boudrenghien, Van der Linden, Galand, Roland, Devos, and Frenay, 2018). In general, countries are transforming their doctoral education programs to find a balance between overproduction and high attrition rates. Georgia in particular aims to address challenges related to doctoral education to strengthen economic growth and to increase social wellbeing through research development.

The aims of this paper are to better understand the challenges faced by doctoral students who are on academic leave, and to offer policy recommendations with the aim of accelerating the completion time and increasing the graduation rates of doctoral students in Georgia. By analyzing completion rates of PhD students in Georgia and identifying the support mechanisms offered by universities or lack thereof, the paper analyzes the main reasons for widespread delays in graduation and offers some guidance to address a complex and multilayered problem.

The study focuses on two main research questions. First, how has the doctoral landscape changed in Georgia from 2016 to 2021? Second, what barriers do PhD students encounter at individual, institutional, and systemic levels affecting the completion of their studies? The paper ends with a set of policy recommendations to overcome those barriers to improve both completion time and graduation rates.

# 2. BACKGROUND

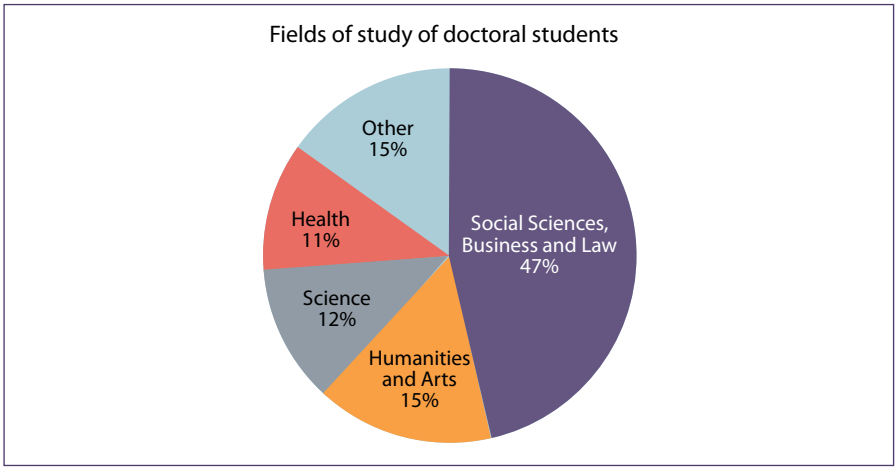
## 2.1. LOCAL CONTEXT

The modernization of tertiary education has been the main focus of Georgia's education system for over three decades now. After joining the Bologna Process in 2005, Georgia shifted to a three-level higher education system consisting of bachelor's, master's, and doctoral programs (Javakhishvili, 2012). The reforms in the Georgian higher education system in this period have been strongly influenced by European frameworks, especially in doctoral education (Darchia, 2021). Several legislative initiatives have been introduced to guide the tertiary education reform process, such as the Law of Georgia on Higher Education, the National Qualifications Framework for Higher Education, and the Law of Georgia on Education Quality Improvement, all of which have played key roles in regulating higher education including doctoral studies (Javakhishvili, 2012).

Doctoral programs in Georgia consist of teaching and research components, dedicating one-third of credits to teaching and two-thirds of credits to research, respectively. This ratio may vary according to the field of study, but the two basic components are extensively addressed in all programs (Javakhishvili, 2012). Program duration varies from three to five years, with the Law on Higher Education requiring that all doctoral programs should not fall short of three years. The graduation requirements of doctoral programs consist of several elements including coursework, assistance in the teaching of bachelor's or master's students, the publication of 1-3 articles in national and international peer-reviewed academic journals, and dissertation defense. In total, the programs comprise 180 credits (Javakhishvili, 2012).

Today, there are 32 higher education institutions in Georgia administering doctoral programs, 13 of which are public universities and 19 of which are private. These universities host around 4,000 doctoral students which equates to under 3% of all higher education students in the country. This is slightly higher than the average percentage of doctoral students in developed countries. Due to having comparatively lower tuition fees, the majority of doctoral students pursue their education in public universities. For example, according to 2020 admissions (emis.ge), around 80% of doctoral students were enrolled in public universities. This proportion is similar when it comes to bachelor's and master's admissions. Over time, the upward tendency of enrollments in public universities has been mostly associated with higher tuition costs in private universities, compared to public ones (Chankseliani, 2013). Meanwhile, the gender distribution of doctoral students is almost equal.

*Chart 1. Fields of study of doctoral students*




*Source: GeoStat*

According to the National Statistics Office of Georgia, 46% of doctoral students are enrolled in the field of social sciences, business, and law, 15% are enrolled in humanities and arts, 12% are in natural science, 11% are in health, and 15% identify their field as other (2021) (see Chart 1).

## 2.2. CHALLENGES RELATED TO DOCTORAL STUDIES

Parallel to the booming popularity of PhD studies among Georgia's youth, the tertiary system has seen an increasing number of doctoral students going on academic leave. For the purpose of this study, academic leave is defined as a student taking voluntary leave for a semester or more with the intention to return to school. Academic leave may last for five years. According to Darchia (2021), 59% of doctoral students in Georgia are on a leave of absence due to various reasons. Indeed, more than half of doctoral students in Georgia face diverse barriers in completing their degrees. These barriers may be related to individual, institutional, or systemic challenges. While global trends demonstrate a 30-50% dropout rate for PhD students (Pyhältö, Toom, Stubb, and Lonka, 2012), in Georgia's context the number of students on academic leave drives political, social, and economic agenda.

# 3. CONCEPTUAL MODEL

As this study aims to understand the reasons behind delays in the completion times for doctoral students in Georgia, we analyze the challenges faced by doctoral students at individual, institutional, and systemic levels. Individual barriers relate to students' preparedness for doctoral studies with respect to financial, academic, and emotional standing all of which can be affected by the given economic and social settings. Institutional barriers pertain to student-supervisor interaction, the development of and access to academic and infrastructural resources, and the diversity of intellectual stimulation mechanisms. Meanwhile, systemic level barriers focus on policy flaws and policy-practice gaps at national level.

# 4. RESEARCH METHODOLOGY

The study employed desk research and descriptive statistics in addition to qualitative research methods to better contextualize the findings and triangulate the data. The data from desk research were further analyzed from gender and regional perspectives.

## 4.1 DATA AND SAMPLE

The qualitative part of the study was based on 23 semi-structured interviews with doctoral students, professors, supervisors, and experts (Appendix 1). The study addressed the research questions from the perspective of doctoral students as well as their supervisors. The majority of doctoral students who participated in the study were on academic leave. Since the majority of doctoral students populate public universities, 13 public universities were approached for the study, not including Kutaisi International University which only opened its doors to students in 2020. The participants of the study represent the following seven public universities: Ivane Javakhishvili Tbilisi State University, Ilia State University, Akaki Tsereteli State University, Batumi Shota Rustaveli State University, Tbilisi State Academy of Arts, Georgian Technical University and Samtskhe-Javakheti State University. Four of the universities are located in Tbilisi and the remaining three are located in three different regions of Georgia, namely Imereti, Adjara, and Samtskhe-Javakheti.

The student participants represented the following subjects: architecture, biology, business administration, education, economics, psychology and sociology. In our sample, over 50% of student participants belonged to the field of social sciences, business, and law, 27% belonged to humanities and arts, and 23% to science, respectively. On average, our participants were pursuing doctoral degrees for six years, which is at the lower end of the international standard of six to eight years (Murphy, 2019). They were recruited through a snowball method, with the data collected from September to November 2021. With the COVID-19 pandemic in mind, the interviews were conducted in the Georgian language through the Zoom platform.

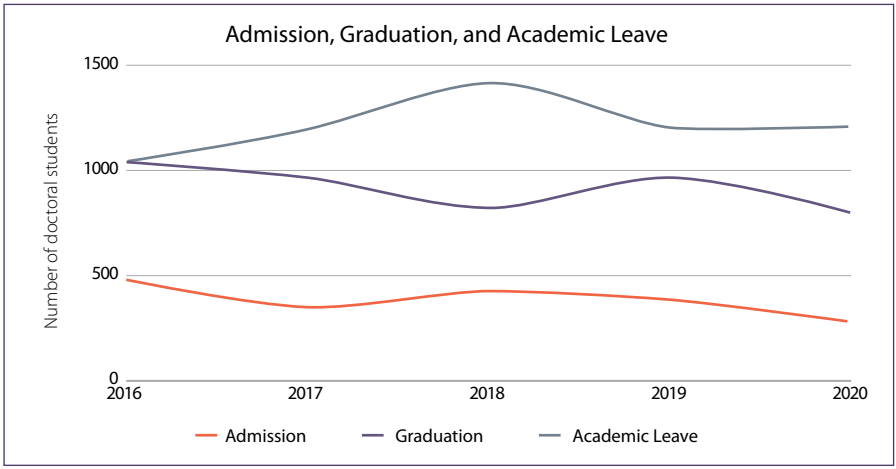
# 5. STUDY FINDINGS

The findings of the study are presented in two sections below. The first section answers the first research question about the doctoral landscape and discusses overall trends and provides gender and regional breakdowns. The second section presents the analysis of the interviews with doctoral students, supervisors, and experts conducted as part of the study's qualitative approach.

## 5.1 CHANGES IN THE DOCTORAL LANDSCAPE FROM 2016 TO 2021

### 5.1.1 Overall trends

*Chart 2. Admission, Graduation, and Academic Leave rates in public universities in Georgia*




*Source: www.emis.ge*

Chart 2 illustrates the admission, graduation, and academic leave rates in 12 public universities in Georgia. From 2016 to 2021, the number of admissions of doctoral students in public universities dropped from 1029 to 797, while the number of graduations sank from 480 to 285. Over the same period, the number of doctoral students on academic leave increased from 1037 to 1201. The decrease in the graduation rate and the increase in academic leave can be explained by several factors already discussed in the literature about doctoral education in Georgia, and these are further supported by the interviews with the study participants.

The Government of Georgia developed the Unified Strategy for Education and Science for 2017-2021, citing the "promotion of internationalization and improvement of quality" as one of its goals (p.29). Part of this internationalization process implied increasing the number of publications in international academic peer-reviewed journals with high impact rate. Accordingly, students were supposed to have at least one article published in an internationally acclaimed peer-reviewed journal, requiring considerable effort and time on the part of the students. Furthermore, to improve the quality of higher education has meant stricter and more consistent rules and regulations being applied with regard to the authorization and accreditation of doctoral programs. This contributed to drop in the number of accredited doctoral programs in Georgia from 260 in 2017, to 195 by 2019 (Darchia, 2021). Stricter graduation requirements also led to a higher number of doctoral students going on academic leave. In addition, the decrease in the number of doctoral programs was a factor in the decrease in admissions.

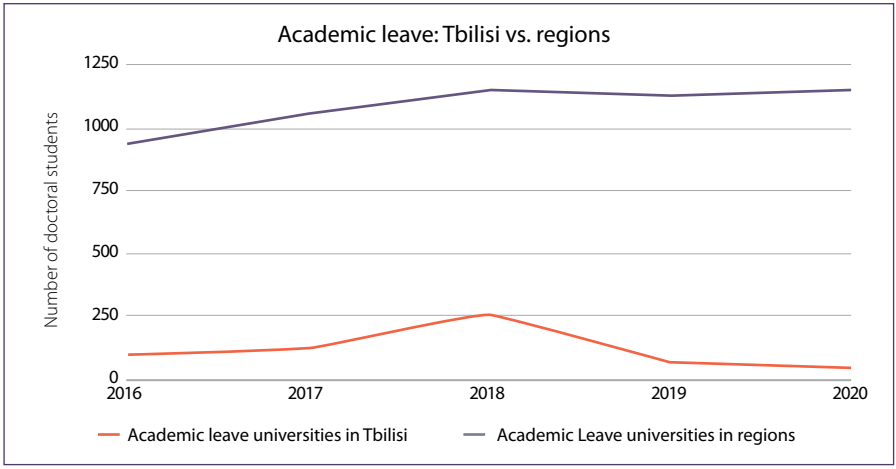
The drop in the admission rate in 2018 could also be partly explained by an increase in employment rates. From 2017 to 2018, the unemployment rate in the country decreased from 21.6% to 19.2% (GeoStat 2021). We speculate here that instead of pursuing doctoral degrees, potential candidates chose to join the labor market. This speculation is supported by the evidence found by Amashukeli, Lezhava, and Gugushvili (2017) who stated that having a master's degree in Georgia increases employment opportunities by five times and since all potential doctoral candidates must hold a master's degree, they may have chosen to accept job offers instead of pursuing doctoral degrees in this period.

### 5.1.2 Gender perspective

The trends over the last five years with regard to academic leave and gender have also demonstrated consistency. There has been a slight increase in the number of doctoral students taking academic leave in both genders. Meanwhile, the relationship between admissions and gender is influenced by mandatory military service. Pertinently, it is common for young men to enroll in higher education institutions and maintain their student status purely to avoid military service (Adeishvili et al., 2021; World Bank, 2018). Significantly, young men aged 25 to 29 represented the most prominent age category for three consecutive years in 2017, 2018, and 2019 (GeoStat, 2021).

### 5.1.3 Regional perspective

*Chart 3. Academic leave in public universities in Tbilisi vs. regions*




*Source: www.emis.ge*

Chart 3 illustrates the aggregated data of the number of doctoral students on academic leave, comparing universities in Tbilisi and the regions. When we aggregated the data according to universities located in Tbilisi and the regions, it became clear that the number of doctoral students on academic leave has increased in eight public universities in Tbilisi, while the trends in the four public universities in the regions (Iakob Gogebashvili Telavi State University, Samtskhe-Javakheti State University, Akaki Tsereteli State University, and Batumi Shota Rustaveli State University) have demonstrated the opposite tendency. This suggests that doctoral students in Tbilisi may face more barriers at individual, institutional, or systemic levels compared to doctoral students in the regions.

*Table 1. Number of doctoral students on academic leave*

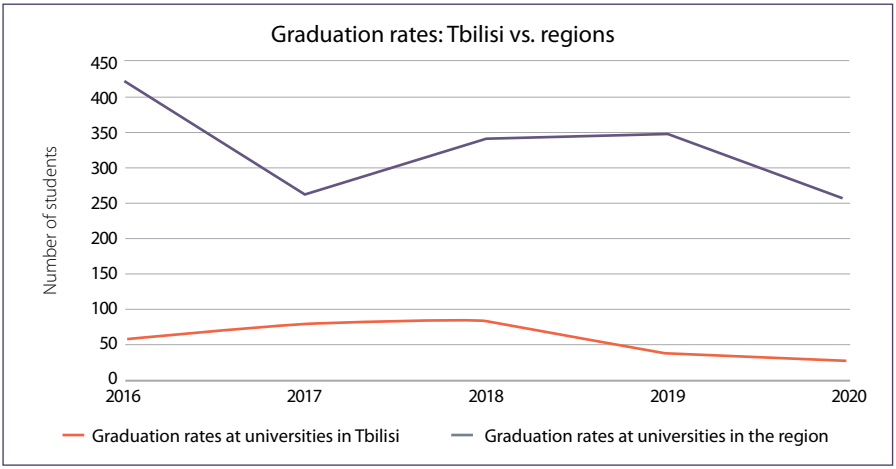
| **Academic leave per public university** | | | | | |
|---|---|---|---|---|---|
| **Universities in Tbilisi** | **2016** | **2017** | **2018** | **2019** | **2020** |
| Tbilisi State Academy of Arts | 7 | 2 | 14 | 11 | 18 |
| V. Sarajishvili Tbilisi State Conservatoire | 0 | 7 | 6 | 4 | 4 |
| Tbilisi State Medical University | 35 | 2 | 31 | 49 | 14 |
| Ivane Javakhishvilli Tbilisi State University | 438 | 537 | 566 | 521 | 579 |
| Ilia State University | 114 | 75 | 51 | 32 | 61 |
| Georgian Technical University | 275 | 384 | 371 | 463 | 437 |
| S. Rustaveli Theater and Film University | 16 | 12 | 19 | 11 | 12 |
| Sokhumi State University | 48 | 36 | 92 | 38 | 29 |

| Universities in the regions | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| Iakob Gogebashvili Telavi State University | 33 | 39 | 47 | 4 | 11 |
| Samtskhe-Javakheti State University | 17 | 24 | 26 | 35 | 10 |
| Akaki Tsereteli State University | 33 | 46 | 90 | 16 | 16 |
| Batumi Shota Rustaveli State University | 21 | 18 | 97 | 9 | 10 |

*Source: www.emis.ge*

Table 1 shows the number of doctoral students on academic leave since 2016 in each public university. While the previous chart illustrated the rising tendency of doctoral students taking academic leave in universities in Tbilisi, when we disaggregated the data, some outliers in this category were revealed. From 2016 to 2021 the number of doctoral students on academic leave almost halved in Tbilisi State Medical University, Ilia State University, and Sokhumi State University, while the same number almost doubled in Tbilisi State Academy of Arts, V. Sarajishvili Tbilisi State Conservatoire, and Georgian Technical University. These trends are important to identify because they may signal effects of policy changes at institutional or even program level. However, it should also be borne in mind that the trends may also be influenced by changes in the job market in each field. In the universities located in the four regions (i.e. those outside Tbilisi), the declining trend in doctoral students taking academic leave has remained consistent.

*Chart 4. Graduation rates of public universities in Tbilisi and the regions*




*Source: www.emis.ge*

Chart 4 illustrates the aggregated data of graduation rates of universities located in Tbilisi and the regions. The declining tendency here is similar in both cases. Overall, fewer students have been graduating over time from all public universities regardless

of their location. This decline in graduation rates may suggest that doctoral students in all universities face individual, institutional, and systemic barriers, and lack sufficient support systems allowing them to overcome these challenges. On the other hand, this may also mean that it has become harder to graduate based on the increased stringency of program requirements, which may in turn suggest an improvement in the quality of doctoral studies.

*Table 2. Graduation rates - Tbilisi vs. regions*

| **Graduation rates per public university** | | | | | |
|---|---|---|---|---|---|
| **Universities in Tbilisi** | **2016** | **2017** | **2018** | **2019** | **2020** |
| Tbilisi State Academy of Arts | 3 | 0 | 3 | 3 | 0 |
| V. Sarajishvili Tbilisi State Conservatoire | 2 | 0 | 2 | 1 | 0 |
| Tbilisi State Medical University | 10 | 13 | 22 | 18 | 17 |
| Ivane Javakhishvilli Tbilisi State University | 87 | 65 | 64 | 90 | 64 |
| Ilia State University | 16 | 10 | 20 | 6 | 17 |
| Georgian Technical University | 280 | 168 | 219 | 202 | 150 |
| S. Rustaveli Theater and Film University | 12 | 0 | 5 | 5 | 3 |
| Sokhumi State University | 12 | 7 | 5 | 12 | 6 |
| **Universities in the region** | **2016** | **2017** | **2018** | **2019** | **2020** |
| Iakob Gogebashvili Telavi State University | 19 | 28 | 9 | 6 | 1 |
| Samtskhe-Javakheti State University | 0 | 0 | 2 | 1 | 1 |
| Akaki Tsereteli State University | 18 | 18 | 46 | 4 | 7 |
| Batumi Shota Rustaveli State University | 21 | 35 | 28 | 28 | 19 |

*Source: www.emis.ge*

When we desegregated graduation rates data, outliers from the declining tendency emerged. In Tbilisi, the outliers are Tbilisi State Medical University and Ilia State University. The graduation rates in these universities have either increased or stayed the same. There are no outliers in regional universities, however, there has been a sharp decline in graduation rates at Iakob Gogebashvili Telavi State University, and Akaki Tsereteli State University. The case of Iakob Gogebashvili Telavi State University is most eye-catching and may be explained by either a collapse in the existing support system or a drastic increase in quality control at institutional or program level.

The trends with respect to doctoral students' admission, graduation, and academic leave in the 12 public universities over the last five years reveal that admissions and graduations have been declining compared to the early 2010s (Javakhishvili, 2012).

This could be a direct or indirect outcome of the implementation of several higher education policies focusing on improving the quality of doctoral studies. The number of doctoral students taking academic leave on the other hand has been rising. The section below introduces the results of the qualitative method, clarifying the reasons behind the rising trend in the rates of academic leave among doctoral students in Georgia.

## 5.2. BARRIERS AT INDIVIDUAL, INSTITUTIONAL, AND SYSTEMIC LEVELS

The number of doctoral students on academic leave in Georgia in 2020 outnumbered the active doctoral students by approximately 1.5 times. According to the Education Management Information System data, there were 6023 doctoral students on academic leave in 2020, while the number of active doctoral students was 4010. The following section will reveal the results of interviews conducted with participants (13 doctoral students, six doctoral supervisors, and four higher education experts) who shared their perspectives on the individual, institutional, and systemic barriers they faced in their doctoral studies.

Increasing barriers to graduation may be perceived as a positive indicator from a quality perspective. In particular, barriers may signify the high standards set by authorities to ensure the quality of education, however the barriers discussed below at individual, institutional, and systemic levels are in fact obstacles hindering the graduation process and are not reflective of improved quality.

### 5.2.1 Individual level

The interviews revealed three main individual-level factors hindering doctoral students' progression toward degree completion, which can be classed as follows: (i) financial, (ii) academic, and (iii) emotional. These factors are also interrelated and sometimes may have a causal relationship with each other. For example, the lack or poor development of academic skills possessed by students means it takes them more time to fulfill degree requirements which in turn increases their financial obligations and negatively affects their emotional state. Stress and depression specifically have a negative influence on doctoral students' mental and intellectual capabilities. In some cases, financial, academic, and emotional factors may emerge independently.

*(i) Financial*

The interviews revealed a lack of funding opportunities for doctoral students to finance their education. The funds they can get come from one major state foundation, namely the Shota Rustaveli National Science Foundation of Georgia. On-campus assistantships, which empirical research has identified as the most effective tool to increase completion rates (Bekova 2019), do not exist in the country. The majority of doctoral students interviewed have to work as teaching assistants as part of their doctoral studies requirements. However, only their tuition fees (in cases where programs are not cost-free) are covered, with no living expenses provided. Therefore,

many doctoral students work off-campus in one or even two full-time positions to ensure the financial security of them and/or their families. Other types of assistantships at institutional level are extremely rare.

When asked what an ideal income for a doctoral student would be to allow them to concentrate exclusively on their studies, the participants responded between 2000 and 3000 GEL per month (equivalent of 700–100 USD). The average monthly nominal earnings in Georgia are slightly under 1200 GEL (equivalent of 400 USD) (GeoStat, 2021), meaning that doctoral students would generally want around three times the national average. The Shota Rustaveli National Science Foundation of Georgia administered the first open call for doctoral research grants in 2014. According to Darchia (2021), the Foundation funded 135 research projects in 2014, with the number of funded projects decreasing to 56 in 2019. The funding pool also decreased from almost 2 million GEL to 1.5 million GEL. Overall, insufficient and inconsistent funding was one of the most crucial issues in doctoral education mentioned by participants and this was supported by the empirical research over the last decade (Darchia, 2021; Gurchiani, 2014; Javakhishvili, 2012).

The increase in the number of doctoral students taking academic leave was presented in Chart 1, with 1201 students taking it in 12 public universities. In many cases, financial difficulties represent a significant factor here. On one hand, declining research funds from the state pushes doctoral students to work more hours in off-campus jobs, and on the other hand a high unemployment rate in the country forces doctoral students to compromise on quality and time in their doctoral studies. Pertinently, the more time necessary to dedicate to doctoral studies comes at the expense of working hours, which the majority of doctoral students are not willing to commit.

*(ii) Academic*

In general, Georgian doctoral students' academic reading, academic writing, and research skills are poorly developed. These skills should be consistently developed at lower levels of tertiary education as insufficient skills here make independently gaining knowledge, conducting research, and analyzing and synthesizing information more challenging. A particular obstacle for doctoral students is the requirement to have published between one and three academic articles (depending on the university and the program) in peer-reviewed journals. This requirement is set at all doctoral programs in public universities. All universities offer one mandatory semester-long academic writing course as part of the coursework. In addition, doctoral students are required to pass an English language test at intermediate (B2) level for admission to doctoral programs. However, a semester-long course is not sufficient to prepare doctoral students to have one of their articles independently published. Indeed, some research participants had taken academic leave because they thought that they needed more time to prepare articles for publication.

The dilemma here is that once doctoral students go on academic leave, they lose their active student status and thus do not have access to crucial academic resources such as advisors and library databases necessary to complete such articles to the required standard.

Furthermore, doctoral students are not allowed to take courses offered at master's level. Many study participants complained about the quality and relevance of courses offered at doctoral level and expressed frustration that even if they could find courses pertinent to their dissertation topic at master's level, they could not take them. This is especially problematic when it comes to research classes. Some universities offer statistics classes for doctoral students but these lack focus on social sciences and humanities. In particular, many of the interviewed students find quantitative research skill classes taught by mathematicians irrelevant to their dissertation themes. The number of highly trained and highly qualified faculty members able to teach diverse qualitative and quantitative methods appears to be extremely limited in the country, with the majority of participants identifying this as a barrier.

Overall, the participants generally criticized the quality of courses taught at doctoral level and mentioned the lack of opportunities to develop advanced research and academic skills. The growing number of doctoral students taking academic leave in public universities in Tbilisi specifically is related to struggles associated with the poor level of development of academic skills among doctoral students. Anecdotal evidence from the interviews suggests that public universities in the regions are more lenient when it comes to quality control which perhaps explains the data presented in Chart 2, which demonstrate a decline in the number of doctoral students taking academic leave in the regions.

### *(iii) Emotional*

When asked what specifically motivated students to pursue doctoral education, very few respondents mentioned their research interests or opportunity to add to the body of knowledge in their respective fields of study. Many said they were pushed by family members and friends and stated that they had ended up in doctoral studies through inertia. Meanwhile, most respondents noted the benefits of the social status that comes with possessing a doctoral degree. Some participants found it extremely difficult to pinpoint reasons as to why they had taken academic leave. One of the professors claimed that very few doctoral students were "ripe" for studies (meaning that very few had consciously chosen to become students and were aware of, and prepared for, the associated challenges).

Doctoral education, especially at the stage of dissertation writing, requires a substantial amount of independent work and may feel very isolating (Jones, 2013). The study participants were self-critical and accepted responsibility for their poor time management, self-discipline, and self-motivation. Some doctoral students mentioned that seminars were organized by their supervisors involving other doctoral students,

serving as a supportive peer environment. Unfortunately, such events are conducted as individual endeavors by professors and thus lack consistency and systematization. Such peer support groups allow for the intellectual and emotional stimulation of doctoral students and help them to identify each other as an additional resource in pursuit of timely completing their degree.

### 5.2.2 Barriers at institutional level

Three institutional level barriers identified in the course of the interviews concerned: (i) student-supervisor interaction; (ii) intellectual stimulation; and (iii) resources (academic and infrastructural). According to the participants of the study, these three aspects were insufficiently or inadequately developed in their respective universities.

*(i) Student-supervisor interaction*

The majority of the research participants found the frequency of interaction and engagement with their supervisor satisfactory. Based on the descriptions provided, this interaction seemed more informal rather than structural and systemic. However, other research into doctoral programs in Georgia has identified this interaction as problematic. Some scholars have stated that doctoral students lack sufficient engagement with a supervisor (Darchia, 2021) while others noted a lack of alignment in the students' academic interests and those of supervisors (Gurchiani, 2014). Even though accessibility to supervisors did not apparently pose a challenge to any participants, the lack of consistent, systemic, and competent engagement was stated as a barrier. According to a few participants, their faculty lacked skills on how to guide and mentor doctoral students through the dissertation process, and as a result advisors failed to employ a systematic and consistent approach to students.

According to the National Statistics Office of Georgia, the student to supervisor ratio in 2020 was 2:1, meaning that on average one supervisor mentors two doctoral students. However, the interviews revealed that in reality supervisors mentor not only active-status students but also those on academic leave, even though they are not compensated or rewarded for the latter. Supervisors sometimes even mentor students from different universities.

*(ii) Intellectual stimulation*

The lack of diversity of intellectual stimulation was one of the most frequently noted barriers hindering graduation not only by the participants of this study, but also by higher education scholars in Georgia (Javakhishvili, 2012; Chakhaia, 2013; Gurchiani, 2014; Darchia, 2021). All of the supervisors interviewed for this research stated that doctoral students had difficulties with independent learning, analytical skills, and applying conceptual thinking to practical questions due to lack of practice in research. Meanwhile, international scholars have been criticizing the standard input-output linear attitude towards education for decades (Heyneman, 2005). When it comes to doctoral education in Georgia, input is miniscule when it comes to classes on academic writing or research. Many participants of this study stated that they had not

had opportunities to participate in different research- and publication-related academic events to consistently and systematically develop the knowledge and skills necessary to meet the requirements for graduation. There is thus a huge gap between what students are exposed to versus what they are expected to produce. According to the student participants in this research, intellectual stimulation was minimal in their programs. This is partly explained by the fact that the majority of the students are employed, and they have little time to work on their own dissertation thesis, let alone to engage in other academic activities that would enhance their rudimentary research skills. Indeed, even those whose sole focus is doctoral studies lack such opportunities.

*(iii) Academic and infrastructural resources*

When it comes to academic and infrastructural resources, the majority of participants said they had access to libraries, physical or online publications, and study spaces. On one hand, the interviewed doctoral students did not complain about access to infrastructural resources, however none of the participants mentioned using library spaces to study or work on their dissertations. They all preferred to use their homes or workspaces to conduct research related to their doctoral studies. Pertinently, the accessibility of such resources was not a problem, but rather their level of development. Libraries were viewed by participants as book storage spaces rather than student interaction areas. Some participants even noted that there was no culture of using a library at their university. While some participants complained about the working hours of the library, the majority said they rarely used the physical space in any case. In addition, the participants generally had a hard time naming three prominent academic journals in their fields. In this regard, some complained that access to online journals was limited to abstracts and not full-length articles.

Space or a lack thereof was another factor mentioned in the interviews. Supervisors, as a rule, do not have private offices to conduct meetings with their students, and therefore they meet them in less formal places, sometimes even over the phone. The provision of a private, safe, and formal space, equipped with suitable equipment, would make the student-supervisor interaction more engaging.

Overall, the lack of functionality and low level of development of infrastructural and academic resources were the key problems, rather than accessibility. Gurchiani in her study "Supporting the Improvement of Doctoral Research in Georgia" reported similar findings (2014). When it comes to academic and infrastructural resources, there is an absence of targeted support services for doctoral students, including but not limited to free printing, workshops on citation style, training on how to get articles published, guidance on research grants, and peer collaboration opportunities.

### 5.2.3 Barriers at system level

Two system-level barriers identified in the interviews with higher education experts and professors were (i) policy flaws and (ii) policy practice gaps.

*(i) Policy flaws*

Several policy flaws emerging from the interviews with the higher education experts in Georgia are supported by scholars in the field. First, the Law on Higher Education does not adequately reflect the nuances related to doctoral programs and totally neglects research as a main pillar of doctoral education (Darchia, 2021). Second, the accreditation of doctoral programs does not take into proper account a research component and does not differentiate between the assessment criteria used for bachelor's, master's, and doctoral programs (Darchia, 2021). Furthermore, each individual faculty's publishing frequency is not taken into account when universities are granted accreditation to the doctoral program.

*(ii) Policy-practice gaps*

As well as flaws in the existing policy, there are policy-practice gaps at system level too. Some of these gaps were mentioned during the interviews by supervisors while others have been identified in the literature. Unfortunately, there is no incentive for faculties to search for research grants and conduct research to help doctoral students to develop their research skills. While the assessment system of the faculty exists at an institutional level, it fails to encourage, support, or incentivize faculties for such extra work. Despite this, several supervisors mentioned in the interviews that they continued working with doctoral students on academic leave, because they believed students were still motivated and eager to overcome their challenges. According to one supervisor, time spent with her doctoral students, whether active or on leave, was the only intellectually stimulating activity in her role. Extra work being undertaken by faculty members does not translate into monetary or non-monetary rewards, or even recognition at institutional level. Universities collect faculty assessment data purely for accreditation purposes.

Another gap that exists in practice is a lack of faculty mobility outcomes at system level. Up to 30% of Georgian faculty members participated in mobility programs in Europe between 2015 and 2018 (Iosava, 2019), however such participation has not yet translated into system improvement at any level. Even though faculty and student mobility as part of the internationalization process is taking place in Georgian higher education institutions, the outcomes at all levels are not being counted, studied, or analyzed. Experience, skills, and knowledge gained by faculty and doctoral students remain compartmentalized without dissemination opportunities at program or institutional level.

Inter- and intra-institutional level collaborations also remain a barrier at system level. Collaborations between public universities in terms of research are almost non-existent, let alone partnerships between public and private universities in terms of teaching or shared research opportunities. Even inter-program cooperation is rare, as explained by one of the faculty members during an interview. Networks or platforms that could allow for sharing already-limited resources between public universities are absent (Gurchiani, 2012) which, if supplied, could support experience and skillset sharing, as well as enhance learning- and research-related practices among doctoral students.

# 6. DISCUSSION AND CONCLUSION

The number of doctoral students in Georgia has tripled in the last decade (Javakhishvili 2012) with almost 4,000 of them registered in 2021. This growth has been accompanied by an increase in the number of doctoral students on academic leave and a decrease in admission and graduation rates. On one hand, many in Georgia desire to attain doctoral degrees and contribute to the growth of the economy, but most are neither financially nor intellectually ready to do so due to broader socio-economic factors in the country creating individual, institutional, and systemic barriers for them.

According to the Education Management Information System of Georgia, the latest graduation rate of doctoral students in Georgia is 42%, which is below the European average of 65% (Vassil and Solvak, 2012). High attrition rate among doctoral students is a common phenomenon even in developed countries. For example, in the US, attrition rates have been measured at 57% (Gardner, 2009), while in Estonia it has been as high as 60% (Vassil and Solvak, 2012). In the research literature, attrition or dropout rates are associated with problems in funding (Nettles and Millett 2006), supervisor relationships (Lovitts 2001), and socialization experiences (Gardner 2007), and the interviews with Georgian doctoral students conducted in the course of this study revealed very similar tendencies. Overall, Georgia's case is not unusual with low graduation rates and high academic leave rates. However, what is unique to the country are the reasons why students take academic leave and postpone their graduation.

The first challenge for doctoral graduates and students in Georgia is employment (Amashukeli et al., 2017; Cherkezishvili, Sanikidze, & Gibbs, 2020). Unemployment in the country is high and securing a well-paid position requires years of loyalty and dedication. Many doctoral students are employed in different organizations before applying to doctoral programs, and are reluctant to give up their secured positions, because they know that employment opportunities are limited. They assume that working and studying at PhD level on a full-time basis is a viable option. Theoretically, they could shift to a part-time position and dedicate more time to schooling, however there are practical implications in doing so. First, according to one interviewee, employers rarely value doctoral degrees and therefore are not willing to offer support to employers in this regard at the expense of their own businesses. Even when an employer does so, working part-time would halve the given student's income and render their financial obligations difficult if not impossible to meet. Second, shifting to a part-time position would require the delegation of some duties and responsibilities at work, and sometimes the nature of the work is not conducive to this. In other cases, students claimed to feel insecure about such arrangements, fearing that they may lose their positions eventually. The findings of this research fully align with those of the existing empirical research in higher education illustrating that off-campus employment negatively affects doctoral graduation rates (Bekova, 2019). Out of 13

doctoral student participants in this research, 11 work full- or part-time off-campus and are on academic leave, compared to two active-status students who had received research grants and are on track to graduate on time.

Controversy here lies in the fact that there is a mismatch between education qualifications and the job market. In their study "Rate of Return on Education, Employment and Job Satisfaction in Georgia," Amashukeli, Lezhava, and Gugushvili found that a doctoral degree was not a statistically significant predicting factor of employment (2017). While having a bachelor's degree increased employment opportunities by three times and a master's degree by five, there was no correlation found between employment and having a doctoral degree in Georgia. In addition, the same study discovered that age and parenting a child under six years of age negatively influenced employment opportunities. Pertinently in this regard, almost half of all doctoral students in Georgia are over 35 years of age (GeoStat, 2021). Therefore, doctoral students who are employed full-time are not willing to give up their positions to exclusively pursue their doctoral studies, especially when having a doctoral degree is not a statistically significant predictor of employment.

The second challenge which is partly coupled with employment is funding not only for doctoral students but research in the country in general. Since funds devoted to conducting research in Georgia are so limited, neither doctoral students nor their professors or respective educational institutions have dynamic research practices in place to produce knowledge and add to the existing body of literature in their respective fields. According to the World Bank's Financial Report (2018):

> "Georgia ranks very low in terms of higher education investments. About 1 percent of GDP is being spent on higher education compared to the OECD average of 2.4 percent. In addition, about 75 percent of these resources come from private households through tuition fees. This implies that the government invests relatively little in its higher education system. Also, research investments are low with 0.6 percent of GDP spent on Research and Development (R&D)" (p.59).

The same report added:

"With 0.6 percent of GDP Georgia compares to least spending countries like Chile, Latvia and Mexico" (p. 31).

The core of doctoral education is research, and this component has been severely compromised for decades in Georgia due to insufficient and inconsistent funding (Darchia, 2021; Javakhishvili, 2012). Funding for doctoral students in Georgia became available only in 2014 through the Shota Rustaveli National Science Foundation's open call for doctoral research grants.

The number of funded projects however decreased from 135 in 2014 to 56 in 2019, as the funding pool reduced (Darchia, 2021). Unfortunately, this open call remains the only opportunity so far for Georgian doctoral students to independently fund

their research. Since the state funds for doctoral students have been decreasing, the pressure to privately fund doctoral education has intensified, thus forcing doctoral students to work more hours to pay for their education.

Darchia (2021) in her paper "Doctoral Education in Georgia within the United European Context," also advocated for structured doctoral programs as they secure funding for doctoral students, have a strong international orientation, rely on support from academic staff, follow clearly structured study programs, and concentrate on transferable skills of doctoral students. In 2016, the Shota Rustaveli National Science Foundation administered a structured doctoral program but has since dropped the initiative without any study being undertaken to ascertain the effects it had (Darchia, 2021). According to one interviewee, a structured doctoral program implies financial support for a doctoral student while studying, which would make it much easier to graduate on time. Financial hardship is among the most significant barriers for doctoral students in Georgia.

The third challenge, which correlates to the lack of research funding, is the quality of the doctoral education, which determines the quality of the doctoral graduates (Gurchiani, 2014; Zaalishvili, 2018). The increase in the quantity of doctoral graduates in the last two decades has only exacerbated the quality problem. Supervisors lacking interest in professional growth are not inclined to either develop mentorship skills or publish quality research papers, and they thus become part of the problem rather than a solution (Zaalishvili, 2018). Doctoral students are required to produce between one and three articles published in local and international academic peer-reviewed journals. In higher education literature, publications are used as a measure of research productivity (King 2004; Leydesdorff, Loet, and Lutz Bornmann, 2011). According to such measures, Georgia's productivity is below many developing countries and post-Soviet countries (Allik, 2013; Zaalishvili, 2018). On average globally, professors publish two articles annually, however in Georgia the number is less than one (Zaalishvili, 2018). According to Zaalishvilli (2018), who studied research productivity in Georgian higher education institutions, measuring productivity according to the number of publications and citations, found that research productivity was higher in public universities compared to private ones, and that professors in the natural science field were the most productive in the country, followed by those in medicine and health. In addition, the study concluded that the age and academic status of the professor positively correlated with research productivity, meaning that older professors with higher academic status were more productive.

Having international connections, participating in international conferences, and being a member of academic societies strongly correlates with an increase in research productivity (Zaalishvili, 2018). Exposure to diverse intellectual stimuli relates directly with the ability to have articles published and increase research productivity. Interviews showed that, unfortunately, doctoral students in Georgia have barely any such stimuli. Faculty members who do not publish cannot teach, assist, or mentor doctoral

students on how to get their articles published in international peer-reviewed journals, which is mandatory for the majority of doctoral programs. Therefore, students face challenges when it comes to having their work published. Specific challenges concern having to write academic research papers in English and actioning the peer-reviewed comments.

A partial solution to many of the above-mentioned challenges would be the introduction of professional and practice doctorates, that would allow for more flexibility and closer connections with industries, relying on partnerships between universities and business sectors. Professional doctorates have emerged in many parts of the world in numerous fields, altering the structure of traditional research-based doctoral education. According to Cherkezishvili, Sanikidze, and Gibbs, the Law on Higher Education in Georgia is too rigid to allow for the development and adoption of professional and practice doctorates, which hinders the economic development of the country (2020). The authors argued that a country's innovative potential lies in the cooperation opportunities between academia and business sectors. Industry-based doctorates would thus allow for the emergence and enhancement of such cooperation and would stimulate innovation capacity in the country.

In conclusion, doctoral education is perceived as imperative for economic growth and innovation worldwide and has been carefully studied for over three decades. In knowledge-based economies, the quality and quantity of doctoral graduates define the speed of development and capacity to compete with others. In this race toward development, contradictory trends have emerged: overproduction and lower attainment of doctoral students. Global trends demonstrate that the academic jobs for which doctoral students are mostly trained for are finite. Therefore, there is a need to reevaluate the aims of doctoral programs and to equip doctoral students with transferable skills that would allow them to more easily attain desirable employment in the wider labor market. For this to happen, doctoral graduates in Georgia need to be well-trained and possess capacities to engage in highly qualified work in diverse industries to contribute to the country's economic growth. Otherwise, their degrees and qualifications represent a waste of private and public investments in education.

# POLICY RECOMMENDATIONS

The recommendations below are derived from the available data analyses and aim to support policy dialogue to improve institutional and system paradigms, encouraging doctoral students in Georgia to punctually graduate and participate in the country's economic growth, innovation, and technological progress.

The Government of Georgia should:

- Create an effective mechanism for a knowledge-based economy, through prioritizing research and development pursuant to fast and inclusive economic development.
- Adopt a long–term governmental strategy for the development of doctoral education in Georgia with a sufficient increase in state funding for research and development and a considerable focus on efficiency.
- Adopt targeted programs which would allow for the systemic and consistent support of the doctoral students and institutions with limited resources in the country.

The Ministry of Education and Science of Georgia should:

- Initiate and push through the development of professional degrees based on industry concentration to better meet the needs of the labor market.
- Develop a credit transfer system for doctoral students to participate in mobility programs internationally and create effective mobility programs within public universities.
- Create platforms for collaborations between public and/or private universities, establishing interdisciplinary networks between different university programs.

Public universities should:

- Better align the requirements for graduation and the doctoral students' opportunities to practice the necessary skills.
- Develop courses that help to improve academic writing and reading skills among doctoral students.
- Support the establishment of peer support groups among doctoral students.
- Offer a series of training for supervisors on doctoral student mentorship and guidance.
- Offer seminars on how to get articles published in international academic journals tailored for doctoral students as well as faculty members.

- Create and diversify monetary or non-monetary incentivization mechanisms for supervisors who engage in research.
- Initiate conferences and/or establish other platforms to engage doctoral students to share process- and content-related challenges.
- Provide private and safe spaces for supervisor-student interactions.
- Offer diverse workshops on how to use library services, look for e-journals, and utilize search engines.

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# APPENDIX 1 – PARTICIPANTS

**Doctoral students**

| | Pseudonym | Age | Gender | University | Started PhD | Field |
|---|---|---|---|---|---|---|
| 1 | Irina | 32 | F | Tbilisi State Academy of Arts | 2017 | Architecture |
| 2 | Levani | 33 | M | Tbilisi State University | 2017 | Psychology |
| 3 | Tina | 38 | F | Ilia State University | 2013 | Education |
| 4 | Nodar | 31 | M | Tbilisi State Academy of Arts | 2017 | Architecture |
| 5 | David | 54 | M | Ilia State University | 2010 | Education |
| 6 | Otari | 31 | M | Ilia State University | 2018 | Education |
| 7 | Teona | 30 | F | Samtskhe-Javakheti State University | 2016 | Economics |
| 8 | Eka | 41 | F | Ilia State University | 2009 | Psychology |
| 9 | Lali | 40 | F | Batumi Shota Rusta-veli State University | 2013 | Business administration |
| 10 | Nino | 28 | F | Tbilisi State University | 2018 | Biology |
| 11 | Maia | 30 | F | Tbilisi State University | 2019 | Microbiology |
| 12 | Liza | 33 | F | Tbilisi State University | 2016 | Sociology |
| 13 | Vazha | 28 | F | Georgian Technical University | 2017 | Architecture |

**Supervisors and experts**

| | Pseud-onym | Affiliation | Status |
|---|---|---|---|
| 1 | Marita | Kutaisi State University | Supervisor |
| 2 | Tamari | Ilia State University | Supervisor |
| 3 | David | Tbilisi State University | Supervisor |
| 4 | Eka | Ilia State University | Supervisor |
| 5 | Natia | Ilia State University | Supervisor |
| 6 | Ana-Maria | Georgian Technical University | Supervisor |
| 7 | Nana | Expert | |
| 8 | Nino | Expert | |
| 9 | Maka | Expert | |
| 10 | Tatia | Expert | |


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