
THE INFLUENCE OF THE SCIENTIFIC SUPERVISOR ON THE QUALITY OF THE PH. D. DISSERTATION

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Abstract

Along with the development of higher education, it is becoming increasingly important to improve the quality of teaching at the doctoral level. The aim of this study was to study the influence of the scientific supervisor on the quality of the dissertation. The research was carried out with a triangulation approach. At the first stage, the legal acts of Georgian higher educational institutions were studied, such as: Doctorate Regulations, Dissertation Council Regulations, etc. In the second stage, qualitative research was carried out. In-depth interviews were conducted with scientific supervisors and faculty representatives.

The results of the study revealed that the involvement of the scientific supervisor in the content part of the thesis, the friendly relationship with the student and the support of the faculty have a positive effect on the quality of the thesis. However, the main determinant of the quality of a dissertation is the skills of the student himself. Accordingly, based on the results of the research, we have developed recommendations that will be of interest to scientific supervisors and doctoral students. Also, the results of the research will help higher educational institutions to improve the quality of teaching at the doctoral level.

Keywords: *PhD, supervisor, Thesis*

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Introduction

Relevance of the topic: In today's dynamic and rapidly changing world, education is an integral part of modern life. Therefore, issues related to the field of education need constant research and updating. The subject of our research is the study of the influence of the scientific supervisor on the quality of the dissertation. The system of higher education in Georgia consists of three main levels: bachelor's, master's and doctorate (Law of Georgia on Higher Education). Each of them has its own specifics and specific criteria that must be met by a graduate after being awarded a higher education degree.

Studies at the doctoral level include both research and theoretical components. Along with this, the process of working on the dissertation and the result that the doctoral student should achieve after completing his studies are extremely important, which undoubtedly has a great influence on the scientific supervisor. (2016, 11). It is natural that the defense of the thesis is the most important prerequisite for awarding an academic degree to a specific person, and the scientific supervisor has the greatest role in this process. It is the scientific supervisor who helps the doctoral student to become a researcher and a good scientist.

The analysis of Georgian and foreign scientific articles reveals that scientists from many countries are interested in studying the mentioned issue. Researches conducted in Georgia, which concern doctoral education and its specifics, do not include a full description of the role of a scientific supervisor in the process of creating a dissertation, which emphasizes the novelty and relevance of the work. Taking all this into account, it should be said that the main problems that arise in the relationship between a scientific supervisor and a doctoral student have been identified in our research.

Literature review

The functioning of doctoral programs in Georgia is based on the principles of Salzburg, which is one of the important guiding documents of the European educational space. The Salzburg Principles state that „a key component of doctoral education is the development of knowledge through original research. (Salzburg Principles, 2005, p.1).

The accreditation standard of higher education programs makes it clear that the scientific supervisor should be involved in all stages of the thesis creation process. To give instructions to the student and help him choose the right direction.

There are several studies on doctoral education in the Georgian educational space: in the work of Irine Darchia "Doctoral education in Georgia in the context of the unified European educational space", the research of Ketevan Gurchiani, Tamar Bregvadze, Simon Janashia, Mariam Dalakishvili, Nino Rcheulishvili, Ketevan Tsotniashvili: "Promoting the improvement of the quality of doctoral studies in Georgia". Irine Darchia's work mainly describes the problems and important issues related to doctoral education, and also focuses on the indicators and reasons for the suspension of the status at the doctoral level: "Within the framework of doctoral educational programs, the scarcity of services supporting the professional development of doctoral students, scientific and research activities (including the insufficient involvement of scientific supervisors) and

research Limitation of the environment, etc." (Darchia, p. 12). The research conducted on the promotion of the improvement of the quality of doctoral studies in Georgia identifies various problems, among them it occupies an important place Hourly load of professors. There are many cases when the working rate of professors significantly exceeds the norms stipulated by the standard. Students often mention this problem when communicating with scientific supervisors (Gurchiani K, Bregvadze T, Janashia S, 2014).

The most important prerequisite for effective study at the doctoral level is the correct selection of the scientific supervisor. "Mentoring in an academic context is a process that helps the student to become an independent professional researcher and scholar in his field, able to adapt to different research arenas, be it university or industry" (Pearson, Brew, 2002:135). Therefore, maintaining effective communication with the scientific supervisor is an important prerequisite for successfully completing the doctoral degree (Zhao, Golde & McCormick, 2007). The attitude of scientific supervisors significantly determines both the success and failure of doctoral students (Lee, 2008, 268).

In the work "Research Quality and Organizational Factors: An Investigation of the Relationship", Gulbrandsen singles out several factors determining the quality of a dissertation: originality, rigor, scientific relevance, practical/social usefulness. (Gulbrandsen, 2000)

Amjad Almusaid's research aimed to examine the role of the supervisor in the development of doctoral students' skills. Research shows that the scientific work of students who had two supervisors was of a higher quality. (Almusaid, 2020) The same opinion is confirmed by Yves and Rowley's research. Few of the students in the study had two active supervisors, and students who had two supervisors made more progress on their thesis and were satisfied with their supervision (Ives, Rowley, 2005).

Tritsina Vilkina's research covers several aspects of scientific supervisor selection. Analyzing the results, the author emphasizes that students rarely choose a female supervisor, they believe that the supervisor's gender affects the quality of the dissertation, and they prefer male supervisors. (Vilkina, 2007)

The literature surrounding the research issue confirms that many factors have an impact on the quality of the dissertation. However, it should be emphasized that the quality of the dissertation work is largely determined by the originality of the issue and the selection of appropriate methods for the research. As early as 1993, Hamlin indicated in a study that originality and sound methods are the highest-ranking elements of research quality (Hemlin, 1993). In his research, Soumana identifies the main factors that have the greatest influence on the creation of a quality dissertation: student characteristics, funding, research obstacles, psychological state, scientific supervisor (Soumana, A. O., & Uddin, M. R. 2017, 90). At the same time, it is very important to involve the faculty in the process of interaction between the scientific supervisor and the doctorate. Faculty must control all major ongoing processes (Maher, Thompson, 2004, 403). Gyuris notes that academic writing skills and critical thinking are essential research skills for doctoral students (Gyuris, 2018). Based on the reviewed scientific literature, it should be noted that the most important role in the process of working on the dissertation is assigned to the doctoral candidate himself.

Thus, based on the above analysis, the aim of the research is to study the influence of the scientific supervisor on the quality of the dissertation. Based on the analysis of scientific literature, research hypotheses were formed:

- A friendly relationship with the scientific supervisor improves the quality of the thesis;
- The involvement of the scientific supervisor while working on the content part of the dissertation has a positive effect on the quality of the dissertation work;
- Faculty support has a positive effect on the quality of the dissertation;
- The presence of a co-supervisor improves the quality of the thesis;
- The gender of scientific supervisors determines the quality of the thesis;
- The ability of the doctoral student limits the quality of the dissertation.

Research methodology

For the in-depth study of the factors determining the quality of the dissertation, a qualitative research method was selected. In the second stage, 15 face-to-face interviews were conducted. Interviewed 10 scientific workers and 5 faculty representatives working in different fields and universities. The so-called "snow team" was used for the selection of respondents. Before the interview, each respondent signed a written confidentiality agreement defined by research ethics.

The theoretical population for the quantitative study was defined as the number of PhD graduates since 2011. According to the data of the National Statistical Service of Georgia, the total number of doctoral graduates since 2011 is 5030. Accordingly, with a 95% confidence level and a confidence interval of ± 4 , the sample size will be 599. The data will be processed with the software SPSS 26 and SPSS- through The main source of data collection is the information obtained from the survey.

Primary data was collected with the help of a structured questionnaire, 80 doctoral graduates and 40 doctoral students participated in the quantitative study. During the development of the questionnaire, the following thematic blocks were distinguished: the involvement of the scientific supervisor in the content part of the dissertation; support of the scientific supervisor; general satisfaction with the scientific supervisor; assessment of doctoral student/graduate student's skills; Involvement of the structural unit of the university in the process of creating a dissertation; Evaluation of the quality of the dissertation.

In the study, we used a Likert scale to measure the variables of the scientific supervisor. Accordingly, the range of the Likert scale will be 1 – 5 : 1 = strongly disagree; 2 = I do not agree; 3 = neutral; 4 = I agree; 5 = I completely agree.

Table 1: Structure of the questionnaire

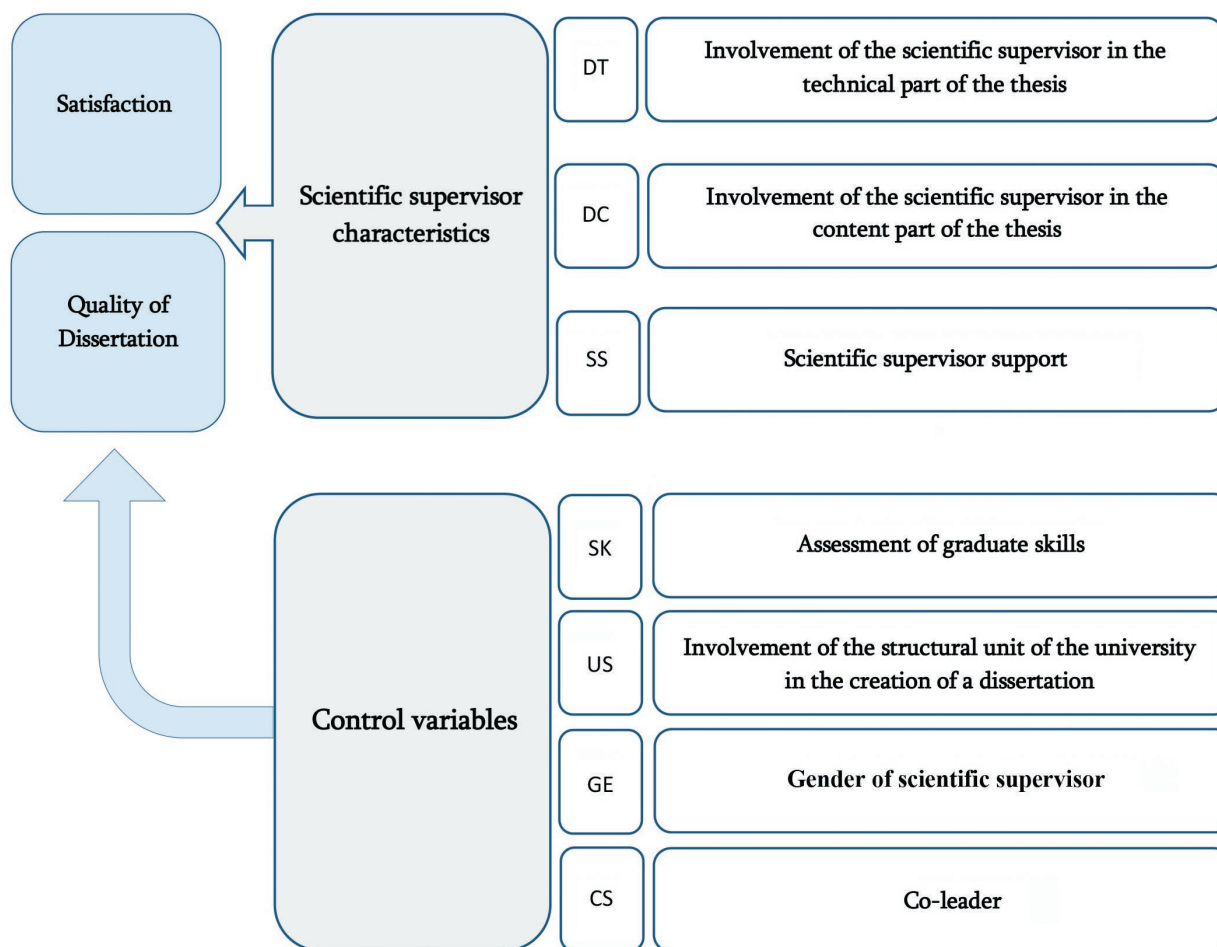
Factors		Elements	Scale
Involvement of the scientific supervisor in the content part of the thesis	involvement	22	Likert scale
Scientific of the head Support	Support	16	
Scientific with the head general satisfaction	satisfaction	7	
of a doctoral student / graduate student skills Rate	skills	8	
University structural unit involvement dissertation of the paper will create in the process	Structural unit involvement	5	
dissertation of the paper quality Rate	quality	9	

The data analysis method involved editing, coding and summarizing the data into manageable summaries. To ensure ease of analysis, questionnaires were coded according to each study variable to ensure accuracy during analysis. Analyzes were performed using the Statistical Package for the Social Sciences (SPSS). Computed data were analyzed using descriptive statistics, including frequencies, means, and percentages. Multiple linear regression analysis using the empirical model below was used to draw inferences between dependent variables.

The variables used in the empirical model and the relationship between them are shown in Chart 1:

$$DQ_{it} = \beta_0 + \beta_1 DT_{it} + \beta_2 DC_{it} + \beta_3 SS_{it} + \beta_4 SK_{it} + \beta_5 US_{it} + \beta_6 GE_{it} + \beta_7 CS_{it} + \varepsilon_{it}$$

Scheme 1: Conceptual framework of research



Research Results

The results obtained during the qualitative research allowed us to see how the scientific supervisor is selected in the Georgian reality, mainly what approach students apply. The interview with scientific supervisors clearly showed that the majority of doctoral students do not have relevant experience and readiness for scientific activities. Their interests are based solely on obtaining a PhD academic degree and not on research activities. The representatives of the faculty note that they do an analysis of the academic staff's hourly workload every year, but the results are often not taken into account, which means that the workload of scientific supervisors exceeds the amount of time allowed. During the analysis of the results of the qualitative research, a number of other problems were identified, which have a significant impact on the quality of the dissertation.

In the context of hypothesis testing, we employed quantitative research methodologies, specifically employing a multi-factor regression equation. In Table 1, we present the mean and standard deviation values for the variables encompassed within our model. The table reveals that the quality of dissertations, satisfaction levels with scientific supervision, and graduates' capabilities received assessments with scores exceeding the average, while the standard deviations ranged from 0.84 to 1.5.

Table 2: Descriptive statistics of the model

	N	Minimum	Maximum	Mean	Std. Deviation
DT	81	1.00	5.00	3.3185	1.51221
DC	81	1.00	5.00	3.2892	1.37729
SS	81	1.13	5.00	3.5525	1.25307
SET	81	1.00	5.00	3.7549	1.10662
SK	81	1.75	5.13	3.7917	.84049
US	81	1.00	6.00	3.3741	1.03535
DQ	81	2.00	5.00	3.7562	1.03605

Table 3 presents the outcomes of the regression analysis, with the quality of completed dissertation serving as the dependent variable. The table indicates that several factors, namely supervisor's technical support, scientific supervisor's support, graduates' skills, and university administration's support, exert a positive influence on thesis quality. Notably, among these variables, the skills possessed by the graduate emerge as a statistically significant factor that significantly enhances thesis quality.

Table 3: Results of the regression equation (dependent variable: degree of doctoral dissertation)

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
	(Constant)	0,761	0,569		1,337	0,186
	DT	0,148	0,116	0,214	1,277	0,206
	DC	-0,139	0,137	-0,183	-1,017	0,313
	SS	0,177	0,155	0,214	1,141	0,258
	SK	0,713	0,132	0,582	5,394	0,000
	US	0,055	0,065	0,056	0,852	0,397
	GE	-0,002	0,161	-0,001	-0,011	0,991
	CS	-0,361	0,137	-0,175	-2,631	0,010
	R Square	0,737				
	Adjusted R Square	0,711				

The engagement of the scientific supervisor in the substantive aspects of the dissertation, the gender of the scientific supervisor, and the presence of a co-supervisor exhibit a negative association with the dissertation's quality performance. It is worth noting that these variables do not reach statistical significance. Notably, the coefficient of determination stands at 0.73, implying that the independent variables account for 73% of the variance observed in the dependent variable.

Table 4. Results of the regression equation (dependent variable: satisfaction with supervisor)

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	(Constant)	1,356	0,479		2,831	0,006
	DT	0,140	0,097	0,192	1,438	0,155
	DC	-0,015	0,115	-0,018	-0,128	0,899
	SS	0,575	0,131	0,655	4,401	0,000
	SK	0,141	0,111	0,109	1,268	0,209
	US	-0,079	0,055	-0,076	-1,447	0,152
	GE	-0,253	0,135	-0,101	-1,868	0,066
	CS	0,079	0,115	0,036	0,683	0,497
	R Square	0,834				
	Adjusted R Square	0,817				

Table 4 presents an examination of the impact of the academic supervisor on graduate satisfaction. The table underscores that the influence stemming from scientific supervisor support and the gender of the scientific supervisor significantly affect the satisfaction levels of graduate students. Notably, supervisor support demonstrates a positive effect on satisfaction, while gender, particularly having a female supervisor, exhibits a negative influence on satisfaction. In contrast, the remaining variables do not reach statistical significance. The coefficient of determination, indicated as 0.83 in the table, signifies that the independent variables account for 83% of the variance observed in the dependent variable.

Conclusion and recommendations

Based on the analysis and judgment of the results of the research, we can formulate the main conclusions and recommendations that were determined by the obtained results. From the hypotheses we developed, only the skills of the doctoral student turned out to be a statistically significant variable, and the hypothesis: "The skill of the doctoral student determines the quality of the dissertation" was confirmed. The analysis of the results of the quantitative research also revealed that the friendly attitude towards the scientific supervisor, the involvement of the scientific supervisor in the content and technical part of the thesis, the support of the faculty, the gender of the scientific supervisor, and the presence of a co-supervisor have a positive influence on the quality of the dissertation. Nevertheless, none of them is a statistically significant variable, therefore the hypotheses were not confirmed: "A friendly relationship with the scientific supervisor improves the quality of the dissertation"; "The involvement of the scientific supervisor while working on the content part of the dissertation has a positive effect on the quality of the dissertation work"; "Faculty support has a positive effect on the quality of the dissertation"; "The gender of the scientific leaders determines the quality of the thesis"; "The presence of a co-supervisor improves the quality of the thesis".

In the form of recommendations. Along with tightening the prerequisites for admission, it is important that the faculty takes care of increasing the competence of scientific supervisors. As a result, the activation of the mentioned issue will give us the fact that those students who actually have scientific interests will be admitted to the doctoral program. The number of doctoral students under the supervision of scientific supervisors will also decrease. Scientific supervisors and doctoral students will devote the necessary time and resources to work on the thesis. Concurrence of these issues will improve the quality of doctoral theses completed in the Georgian higher educational space.

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