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Report on Survey of companies needs for Dual Higher Education in Georgia

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Abstract: This research report aims to identify and assess employers' requirements and attitudes towards dual education. This study is carried out within the framework of the European Union-funded project "Strengthening capacities for the implementation of dual education in Georgian higher education" - DUGEOR. The goal of the project is to improve the competencies of higher education graduates and increase their employment opportunities in the labor market in Georgia, taking into account the best practices of EU member states.

Dual higher education is a flexible and more efficient form of student study practice and is part of the study program. In parallel with studying at the university, the students work according to the specialization, which allows them to study in two different places at the same time - at the university and at the company. Dual education considers the company as a student's learning environment together with the university. The system of dual higher education integrates three parties: the student/the higher education institution/the company. Accordingly, DHE has multiple benefits, such as: The students acquire practical knowledge and skills in the working environment, which increases their employability; Businesses and companies find it easier to find qualified professionals, which avoids the costs associated with human resource risks and improves their production process and service delivery; Universities are adapting their curricula to the demands of the labor market and increasing their attractiveness as graduate employment

rates improve. Along with this, dual education also has a social impact, within which students with low socio-economic opportunities receive significant benefits as a result of conducting study and work together, which to a certain extent allows them to solve the problem of covering the tuition fees.

The purpose of dual higher education is to plan the learning process in real working conditions, and its implementation depends on the readiness of the labor market to be involved in the education process together with higher education institutions. Needs assessment includes the study of the following issues: What are the requirements for graduates of higher education institutions? What could be the company's contribution to the training process? Can the company provide any type of financial support for the students in training practice? Can the company assign mentors who will supervise and evaluate the students' work? How many students can be hired for practical training, etc.

In order to develop a dual higher education model, an assessment of labor market needs was conducted. In total, 96 organizations operating in Georgia were interviewed during the research process. 30% of them represented micro companies, 30% - small businesses, 25% - medium businesses and 15% were large companies (according to the number of employees).

Key Words: Dual higher education, master, bachelor, apprentice, university, practice, work related, work integrated, work based, learning

Research method

The purpose of the study was to assess the needs of the labor market in Georgia and the requirements of companies for graduates of higher education institutions, as well as their readiness to be included in the model of dual higher education.

The design of the study was developed within the framework of the DUGEOR project, which is implemented by higher educational institutions operating in Georgia - GIPA - Georgian Institute of Public Affairs, Georgian Technical University, Iakob Gogebashvili Telavi State University, Batumi Navigation Teaching University, Batumi State Maritime Academy. While working on the research design, we also took into account the recommendations of the Ministry of Education and Science of Georgia and the National Center for Educational Quality Enhancement. During working on the research questionnaire, we utilized the experience from European universities and other similar studies.

It is worthy to mention, that our attention was focused on collecting data about the interests, needs and attitudes of companies operating in Georgia, in order to evaluate the possibility of companies to become potential partners of DHE with Georgian higher education institutions.

In order to survey the companies, a digital questionnaire has been created, which consisted of three parts. In the first part, we were interested in the available information about the company, the number of employees, the field of activity, staff turnover, etc.

In the second part, we asked the companies to qualitatively assess the level of training of the graduates, the compatibility of their skills with the job requirements, as well as the positions where it was most difficult to hire qualified personnel.

In the third part, we were interested in whether the companies had experience of cooperation with universities, how many students they could accept for work practice during the semester, if they would be able to pay students for their work or provide financial support in any way, as well as their willingness to participate in the process of developing and implementing curricula.

During the research process, we had been in contact with the respondents, who were either the company's direct supervisor, top management representative, or head of the human resources

service, and later, as a result of a telephone or direct face-to-face interview, we collected the answers in the appropriate form.

Limitations of the study

The results of the survey obtained herein were not based on a representative sample, and these results cannot be generalized in order to describe the needs and interests of the employment market within the framework of the dual higher education system. In addition, the selected companies represent only Tbilisi, Adjara, and Kakheti regions, and the principle of cluster selection has not been applied.

However, still, the existing responses showed unequivocal support for the dual higher education system, and the willingness to be engaged in this model was expressed by almost all of the interviewed subjects.

Study results

Companies were selected according to the regions of Tbilisi (44 companies), Adjara (40 companies) and Kakheti (10 companies). A total of 96 companies were interviewed, of which 30% were micro companies (up to 10 employees), 30% - were small companies (10-49 employees), 25% - were medium (50-249 employees), and 15% large companies (more than 250 employees).

The field of interest of the interviewed organizations is diverse and includes many sectoral directions, such as: gambling business, health care and social work, production and supply of electricity, gas, steam and air conditioning, scientific and technical activities, real estate business, financial and insurance activities, water supply, information and communication sector, public administration, construction, wholesale and retail trade, hospitality, agriculture, forestry, manufacturing, transportation and warehousing, other services (chart 1).

Companies participating in the research are mainly active in the following sectors: transportation and warehousing (20% of surveyed companies), manufacturing - 14%, agriculture, forestry and fishing - 12%, hospitality - 10%, wholesale and retail trade - 9%.

All the companies we surveyed employ at least one personnel with higher education. The employment rate of university graduates in micro-companies ranges from 20% to 80%, while in some large companies with more than 250 employees, the share of university graduates is below 20% (construction, road rehabilitation sector) (chart 2).

It is also worth noting that in some companies the share of university graduates is 100% (for example, in service companies and public institutions). On average, the share of university graduates in the organizations participating in the study is 52% (median average 50%, min.: 6%, max.: 100%).
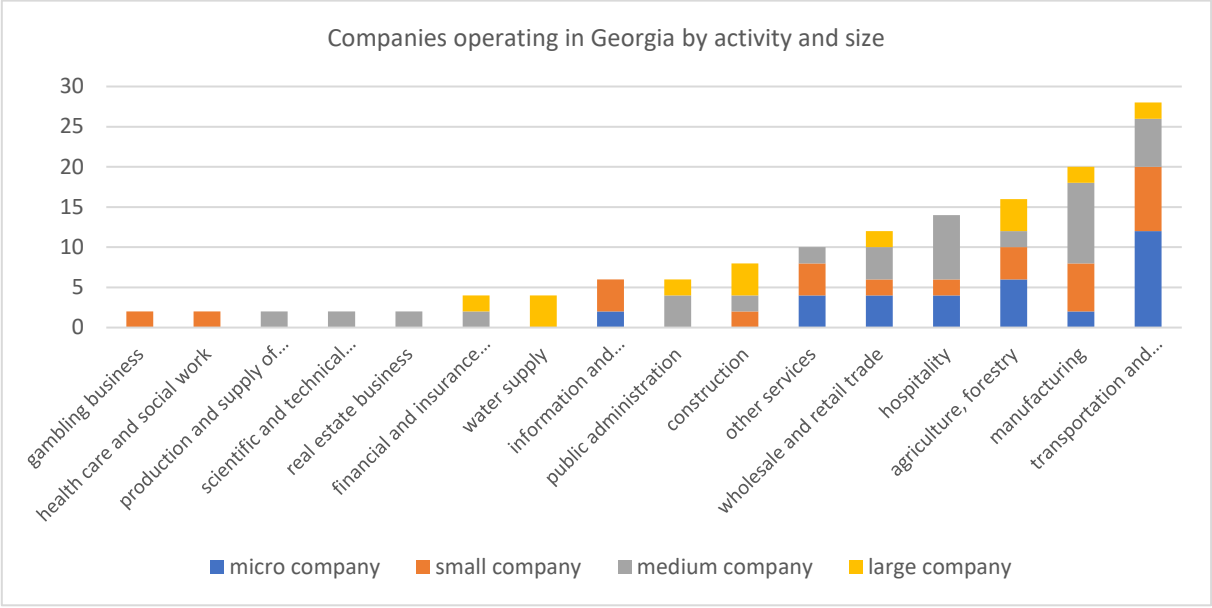
chart 1. Companies operating in Georgia by activity and size
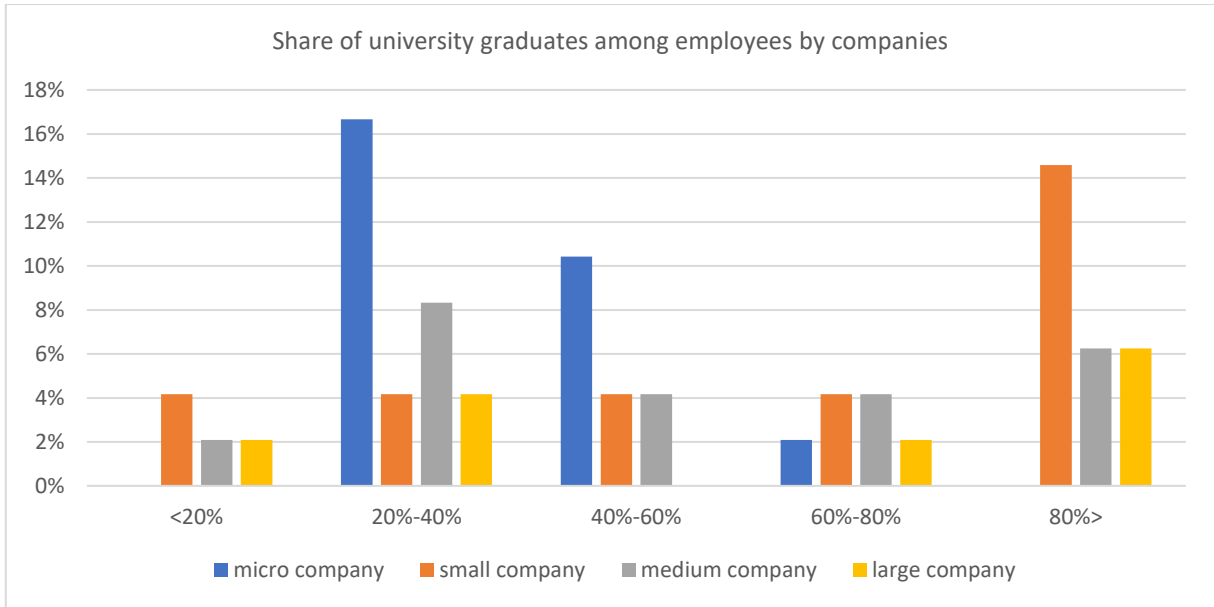
chart 2. Share of university graduates among employees by companies

The staff turnover rate in the surveyed companies is within 1%-50% and according to the size of the companies it is illustrated on chart 3:
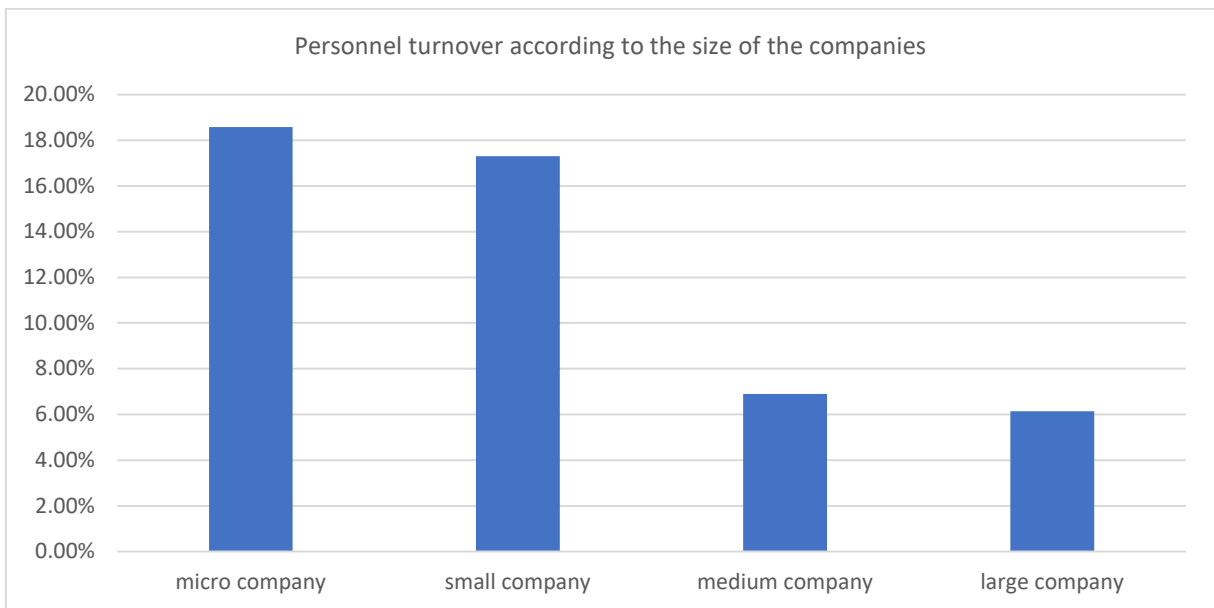

chart 3. Personnel turnover according to the size of the companies

The core interest of our research was aimed at finding out what is the need for employment of persons with higher education in companies and how much they meet the requirements set by the company. To the question we asked - do you agree that there is a need for additional

employment of personnel with higher education in the company - the vast majority of companies confirmed the existence of such a need (chart 4).
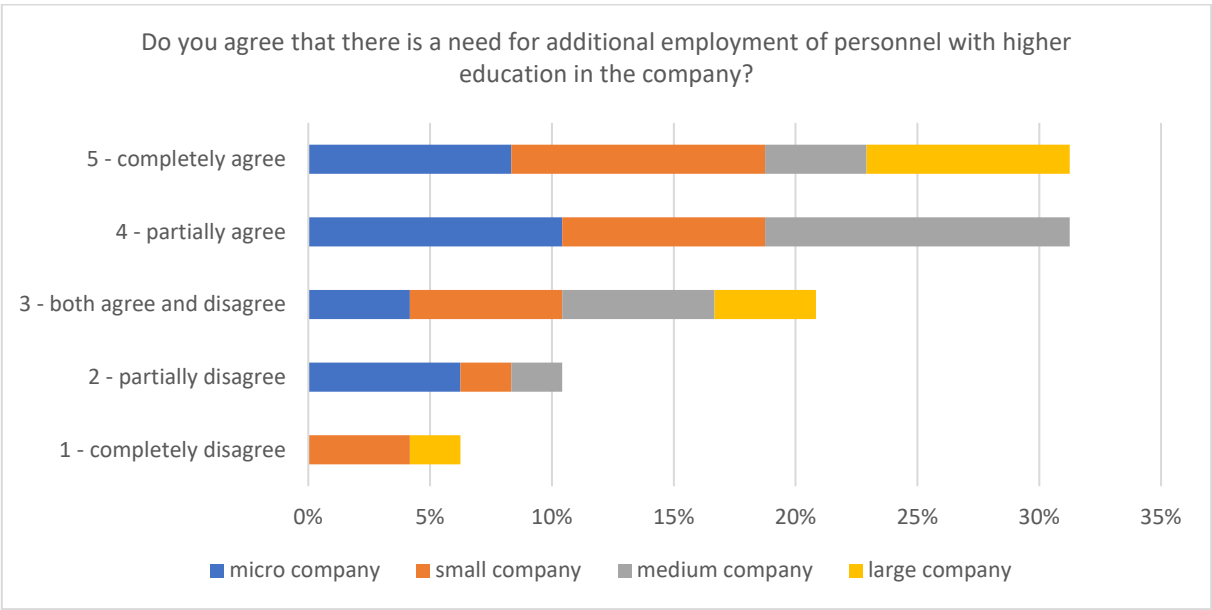

chart 4. Attitude towards the need to recruit personnel with higher education

Companies face difficulties when hiring personnel with higher education, which is mainly related to their adaptation to the real work environment. To the question - do you agree that there are difficulties/barriers in recruiting adequate personnel with higher education for certain positions - the answers of the companies were distributed as follows (chart 5):
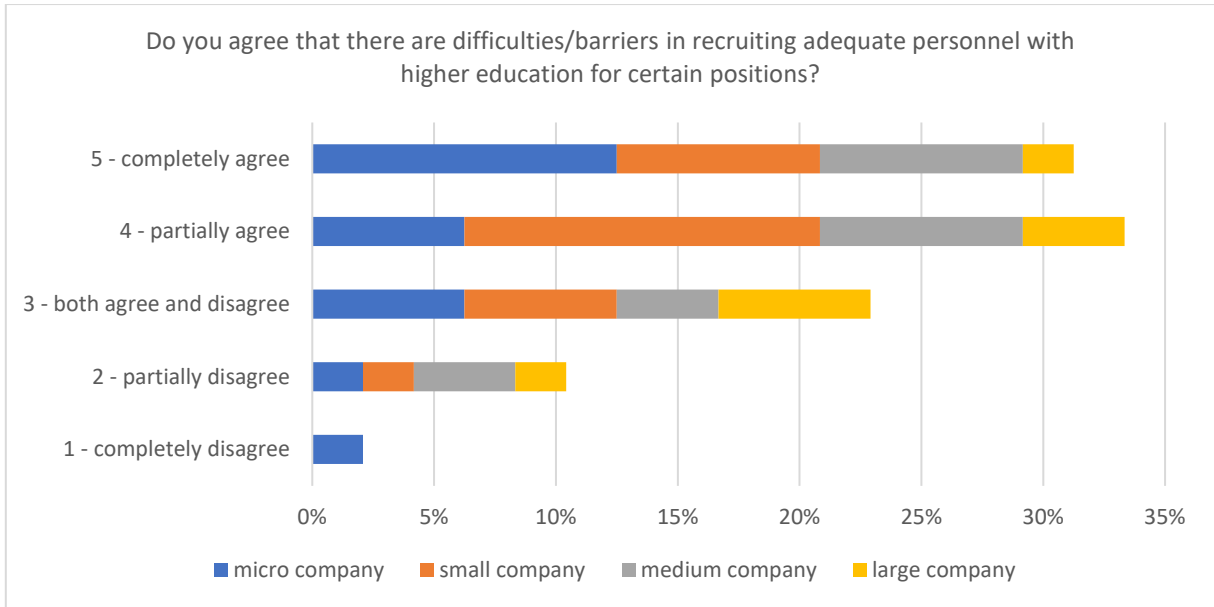
Do you agree that there are difficulties/barriers in recruiting adequate personnel with higher education for certain positions?

chart 5. Evaluation of the qualifications of the staff hired for work

Among the most demanded and critical positions, where companies experience a shortage of qualified personnel, are managerial and engineering positions (Graph 6):
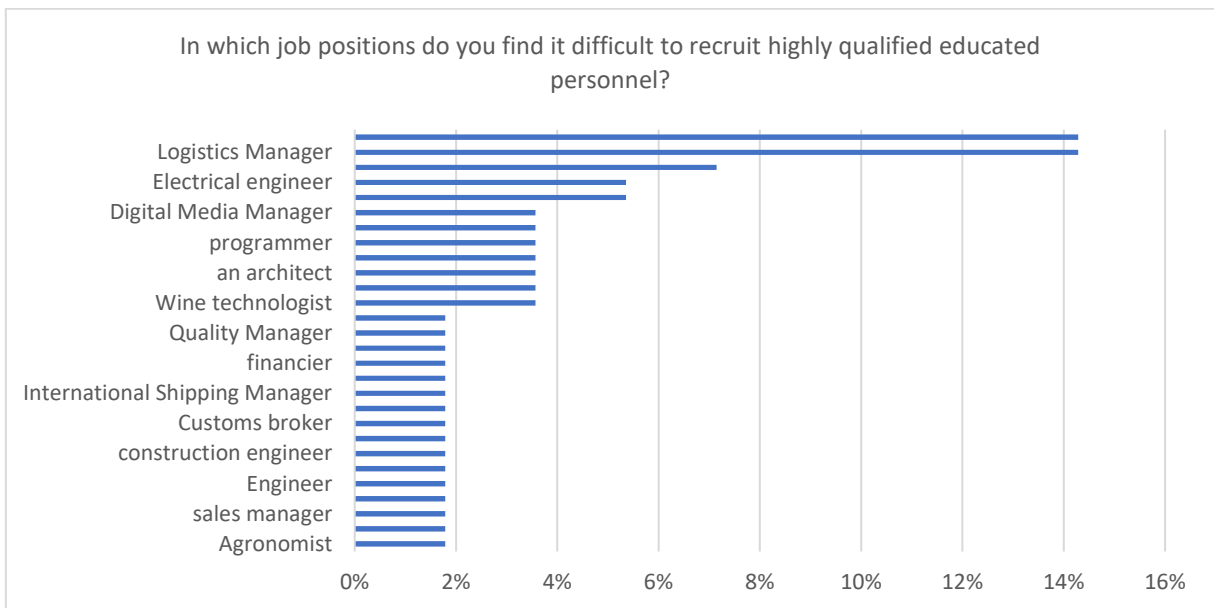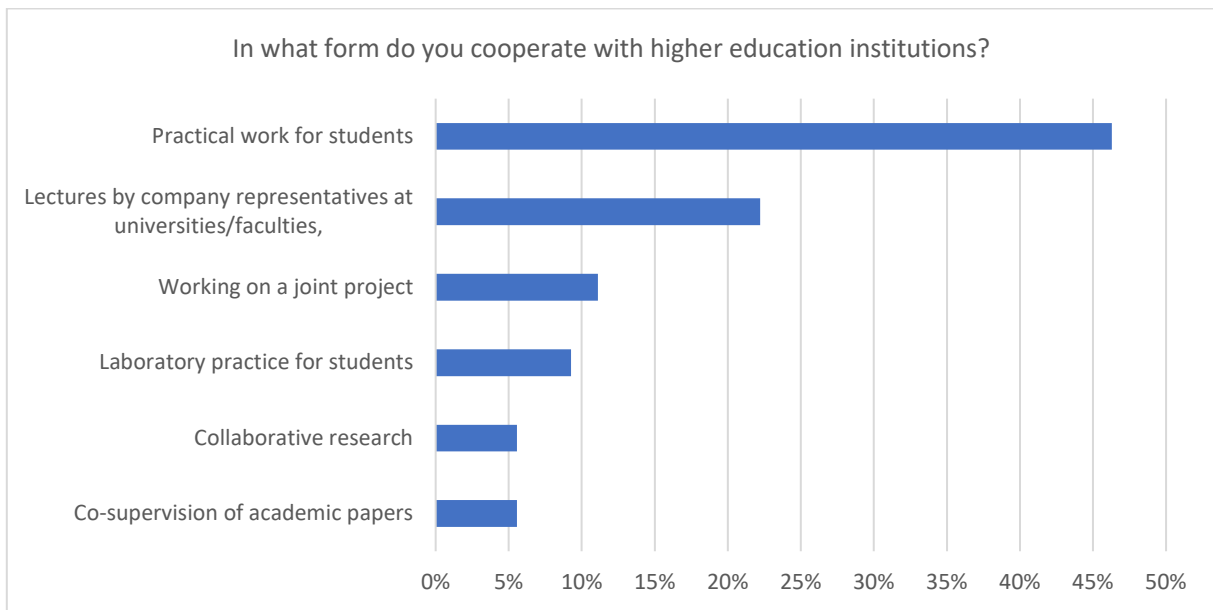

In which job positions do you find it difficult to recruit highly qualified educated personnel?

chart 6. The need for qualified personnel according to positions

54% of the surveyed companies have the experience of cooperation with Georgian higher educational institutions, which in most cases is supported by special contracts. Mostly, companies and universities cooperate in the direction of student internships, although company

representatives are also actively involved in joint projects and research activities, lecturing, etc. (chart 7):

In what form do you cooperate with higher education institutions?

Category	
Practical work for students	~46%
Lectures by company representatives at universities/faculties,	~22%
Working on a joint project	~11%
Laboratory practice for students	~9%
Collaborative research	~5%
Co-supervision of academic papers	~5%

chart 7. Cooperation with higher education institutions

To our question - would you participate in the development of dual training programs in accordance with the profile of your company? Most of the companies (73%) believe that they should be involved in the dual education system. 21% of the respondents do not have a defined position and it seems that this is mainly due to two reasons, either their head offices are located outside Georgia, or it is a government agency and such a decision requires the approval of the head office. Only a few micro-companies denied the potential of their involvement in dual education (2%) and 4% of respondents avoided answering. Overall, it is clear that most companies express their desire to increase their contribution to the dual education system (chart 8).
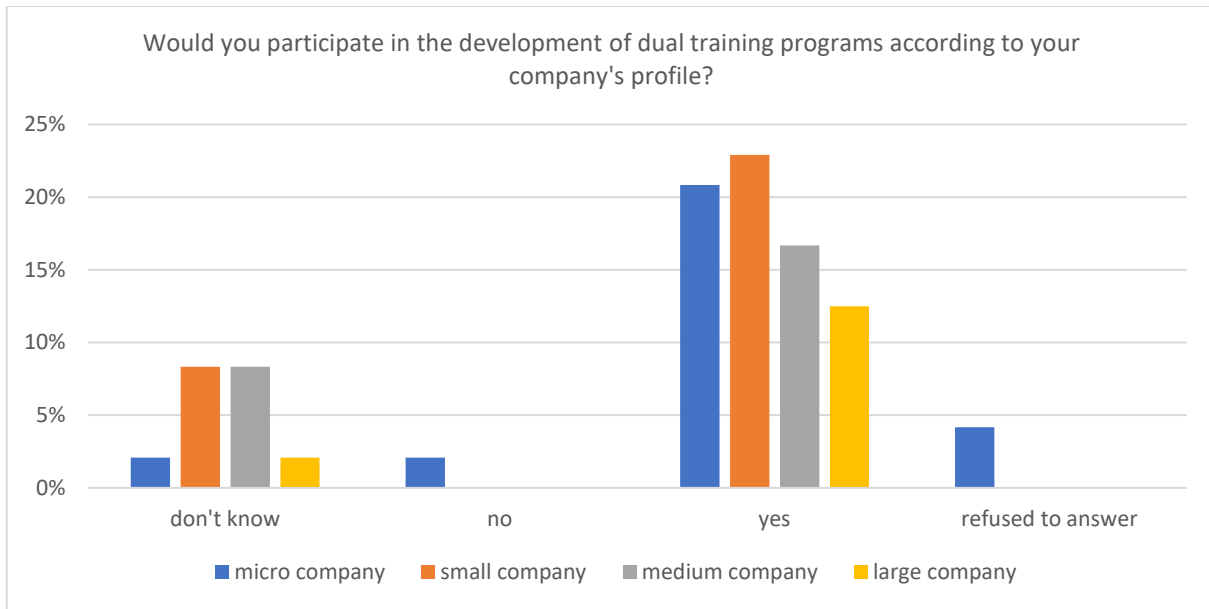
chart 8. Involvement in the development of a dual study program

We were also interested to which extent the dual form of education can support the work process in the company and how effectively this process will help to eliminate the shortage of qualified personnel in the labor market. As it turned out, the answers to these questions significantly correlate with each other.

48% of companies fully and 33% almost fully believe that a dual form of education can help and support the process of work or service delivery in their organization. 15% of surveyed companies see a positive potential in this process, and only 4% of companies are somewhat skeptical about the potential of dual education. It should be noted that no organization expressed a categorical refusal against the dual education system (chart 9).

As for the impact of the dual system on eliminating the shortage of qualified personnel, the vast majority of companies - 96% (71% fully agree, and 25% almost completely agree) believe that the dual form of higher education will play an important role in reducing the shortage of qualified personnel. The answers show that the majority of companies are convinced that dual education has the potential to increase the number of adequate personnel in the employment market (chart 10).
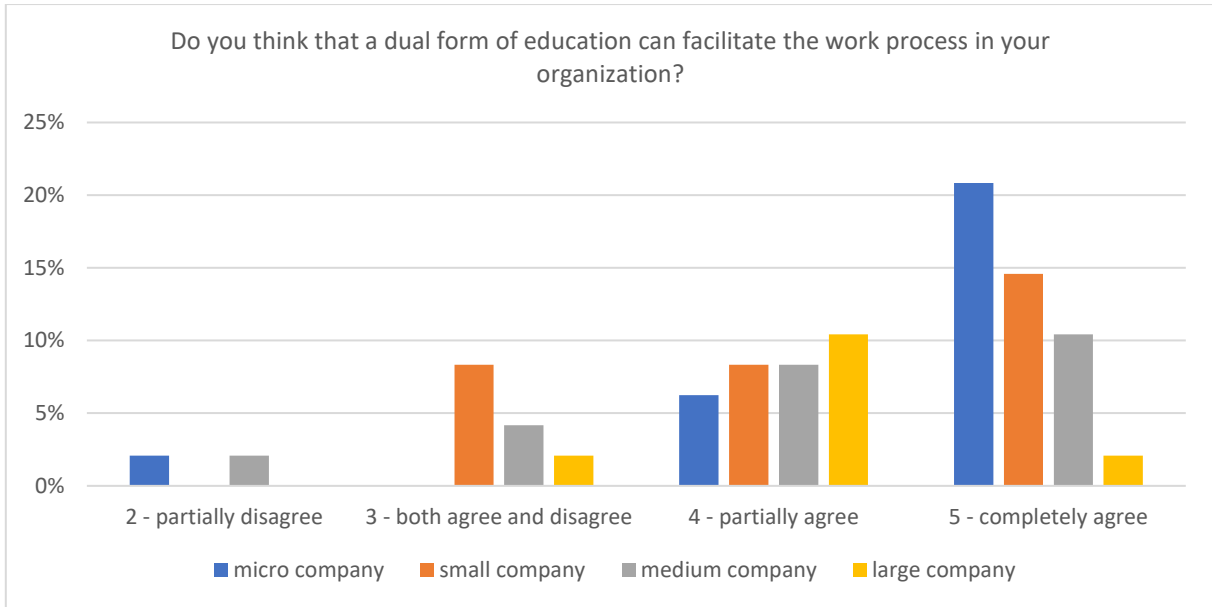
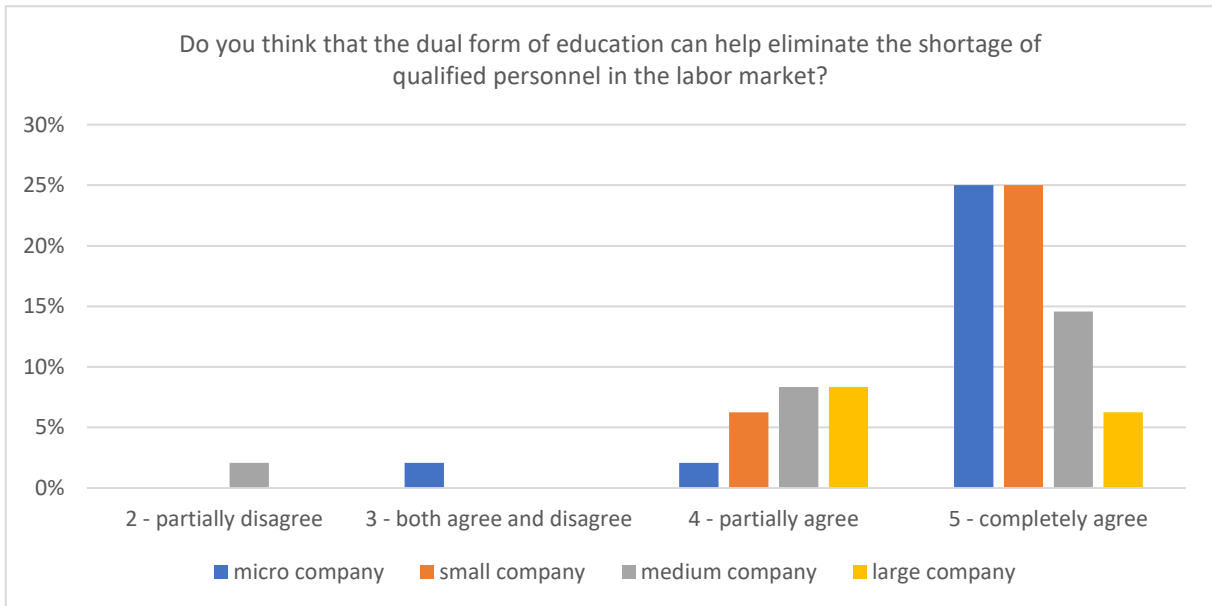*chart 9. The impact of the dual model on the work process*

chart 10. Dual education and reducing the shortage of qualified personnel

The implementation of the dual higher education model largely depends on the extent to which companies have the opportunity to employ students in their organization during the training period. 85% of companies have the opportunity to offer students practical education in their organization. 13% of the companies are not sure of their capabilities and only 2% of the participants say they refuse to accept students' practical work (chart 11).
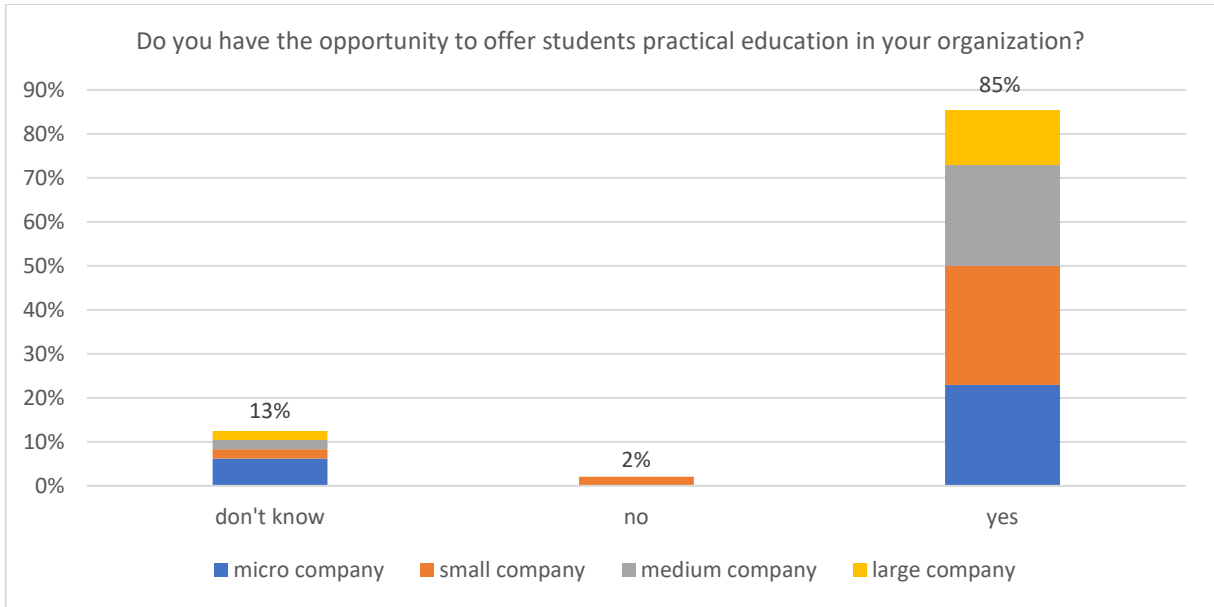
Do you have the opportunity to offer students practical education in your organization?

chart 11. Possibility of student internship

81% of the represented companies have the opportunity to employ students on student internships in their organization every year, while 19% do not have the opportunity to do so (see chart 12). As a minimum, micro, small and medium-sized companies can accept 1-2 students annually. As the size of the company increases, the greater is their ability to get students on work placements.
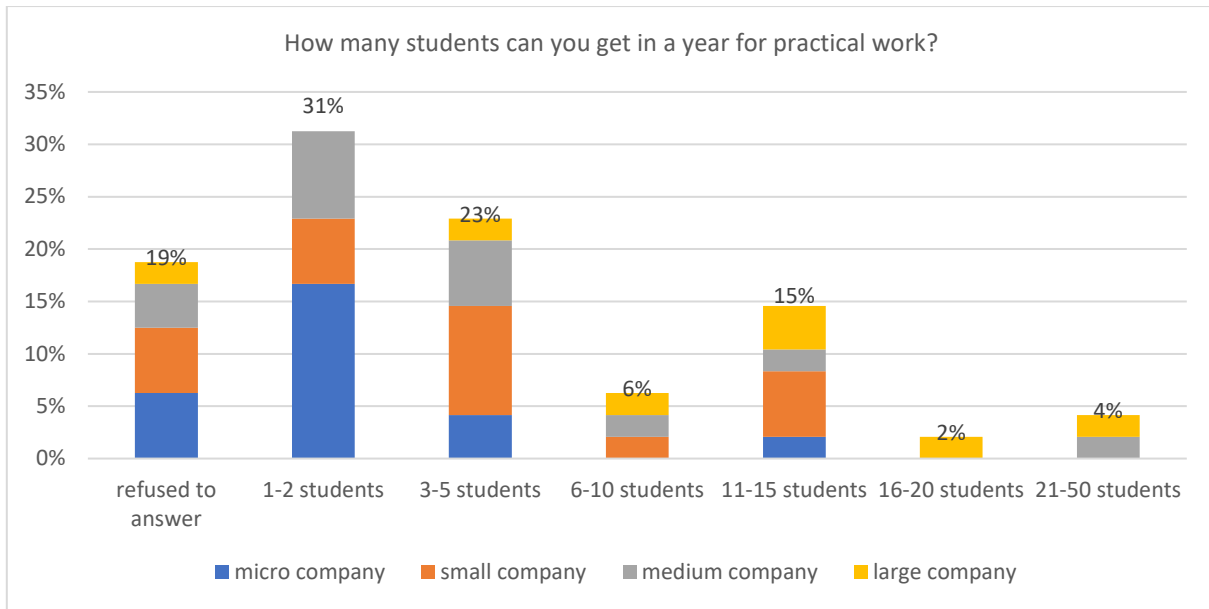
chart 12. How many students can companies accept?

We were also interested in what was the preferred and mutually beneficial form of employment of students on work practice that would be equally acceptable to both the organization and the student's learning goals. We did not offer respondents a choice in the proportions of theoretical and practical hours of study (eg 1 week/semester at university - 1 week/semester at workplace, full/part time). Instead, we asked the respondent to state their own position regarding the allocation of practice time.

Many interviewees expressed the opinion that the current system of practice, does not meet the goals needed to develop the relevant skills in students on the one hand, and on the other hand, it is not in line with the interests of the company, which strives to maximize benefit from the student's employment and productivity.

According to the interviewees, one-semester work practice is the most acceptable, since during this time the continuity of the work process will be ensured and it will be possible to start, finish and report on service projects. Also, it was mentioned, it is of great importance for the student to concentrate on work and to understand the sequence of tasks to be performed.

In addition to the one-semester in a HEI/one-semester-in-a-company model, a certain part of the interviewees favor, a one-week alternation of theoretical and practical training. In any case, the

vast majority of the respondents believe that hours of theoretical teaching and practical work should be equally represented in the curriculum.

One of the most important question referred to the extent to which companies are ready to provide financial support to students employed on internships. In order to ensure that the companies in the survey did not feel any obligation, we did not separate the different expressions of financial support with separate variables (salary, travel, communication compensation, meals). Instead, our question was presented in a general way: "Would you be able to financially support dual students who will actually work with you during the semester? As it turned out, 46% of the surveyed companies will definitely reimburse students for certain expenses. Following such a response, we delved further into the issue and asked respondents to specify what they meant by financial support. As the responses showed, almost all companies that are willing to provide some financial support to students will do so in the form of remuneration. 31% of respondents do not know if they will be able to provide financial support to students in any way, 15% think they cannot do it, and 4% avoided answering (chart 13).
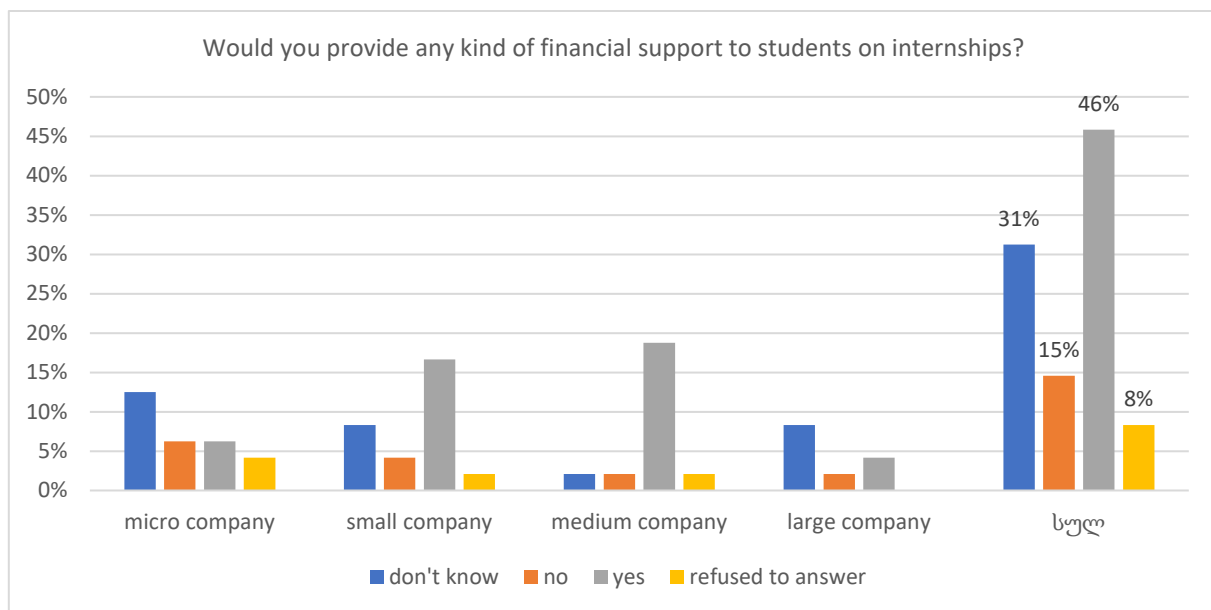

chart 13. Willingness of companies to financially support students in any way

Most of the companies are also eager to engage in the dual training system with their own human resources and assign mentors to guide the students. This is an important result from the point of view that the mentoring is a contribution to the company and therefore an increased motivation

of the company to develop students with skills that can potentially be used to increase the productivity of the company (chart 14).
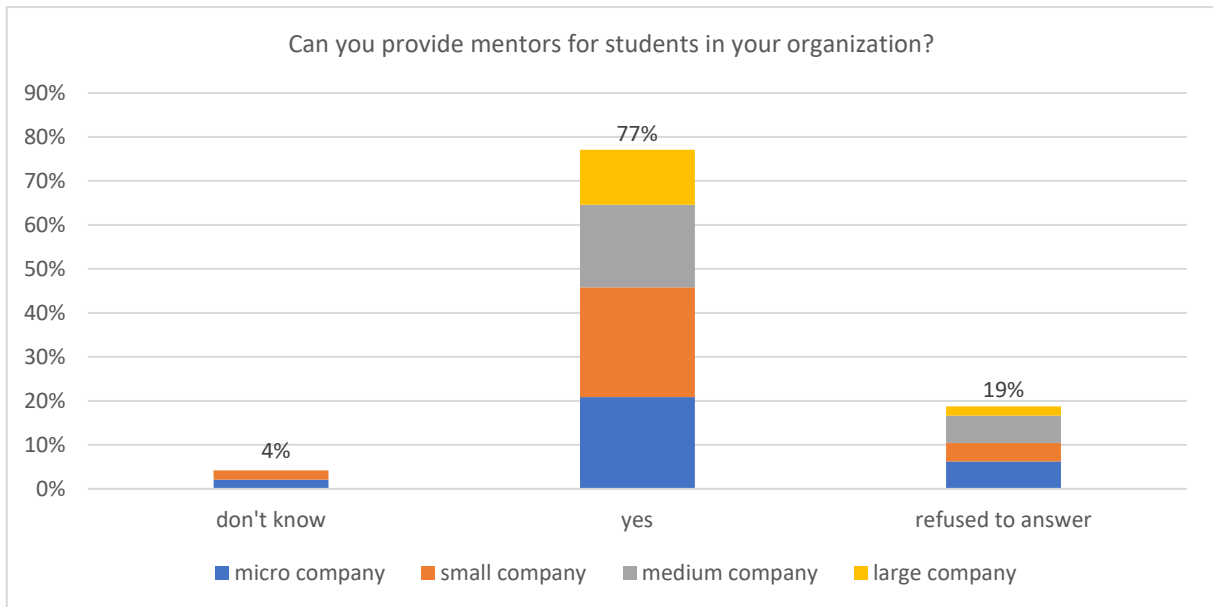

Can you provide mentors for students in your organization?

Bar chart with values: don't know 4%, yes 77%, refused to answer 19%. Legend: micro company, small company, medium company, large company.

chart 14. The attitude of companies towards the appointment of mentors

Conclusion

Overall, the study showed that:

- There is a shortage of qualified graduates in the labor market;
- According to the employer, mutual cooperation between the university and the labor market in the model of dual higher education will contribute to the training of qualified personnel on the one hand, and to the increase of productivity of companies on the other hand;
- Many companies represented in the labor market of Georgia have been cooperating with universities for many years, in terms of student placement, therefore the dual higher education model is a flexible and more effective form of student study practice for them;
- It is acceptable for companies to provide financial support to students employed on internships;
- Companies are ready to engage in curriculum development with universities and allocate mentors to guide students during internships;

Questionnaire

Section 1.

- Interviewer's name and surname
- Interviewer's phone number
- Interviewer's email
- Which university does the interviewer represent?

Section 2.

- Company name
- Company website (if any)
- Company headquarters
- City/Municipality
- Number of employees:
- What is the rate of personnel turnover, in particular, the frequency of hiring a new employee over time?
- Number of employees with higher education:
- What is your company's main product? What kind of services do you provide?
- Type of company activity (you can choose more than one option):

Section 3.

- There is a need for additional employment of personnel with higher education in our company?
- Do you have difficulties/barriers in recruiting adequate personnel of higher education for certain positions?
- In which job positions do you find it difficult to find educated personnel with higher qualifications? Please indicate which job positions.
- What skills and abilities should a person with higher education possess in order to be able to work in your organization? You can select multiple settings.
- Do you have experience of cooperation with higher education institutions?
- Have you signed cooperation agreements with higher education institutions?

- Tell us which higher educational institutions you have signed cooperation agreements with?
- What services do you offer to higher education institutions? You can select multiple options.
- Do you think that a dual form of education can facilitate the work process in your organization?
- Do you think that the dual form of education can help eliminate the shortage of qualified personnel in the labor market?
- Do you have the opportunity to offer students practical education in your organization?
- If the answer to the previous question is yes, how many students can you accept in a year for practical work?
- If the answer to the previous question is yes, can you provide mentors for students in your organization?
- Do you agree that potential mentors in your organization should receive short trainings so that they can guide and evaluate students?
- Will you be able to financially support dual students who will actually work with you during the semester?
- Would you participate in the development of dual training programs in accordance with the profile of your company?
- Would you add anything?
- Name and surname of the respondent:
- Position of the respondent in the organization:
- Telephone and e-mail address of the respondent:
- Can we contact you in case of additional questions?

1. The Impact of Gender Quotas on Women's Political Representation

The Case of Georgia

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Abstract: More than half of states existing in the world apply gender quotas to increase women's representation in politics. Since 2020 Georgia is among these countries. The initial experience of realizing the gender quotas principle in Georgia is analysed in the article. The principle of gender quotas has already been applied during two elections: the 2020 parliamentary elections and the 2021 local self-government elections. The article deals with the principal content of the debates between the supporters and opponents of the quoting principle and assesses the effectiveness of the gender quotas for increasing women's descriptive representation. The effectiveness of quoting is assessed using two criteria: a) the extent which the goal set by the quota design was achieved and b) whether the progress was significant as compared to the previous elections.

Key Words: Gender and politics, gender quotas, women's representation

Introduction

During the last thirty years, gender quotes directed towards the growth of women's representation in politics have spread so rapidly all over the world that this process was even called one of the most important institutional changes. According of "The Global Database of Gender Quotas in parliaments", nowadays one or another type of gender quota is in force in more than half of the world's countries, among them in 70 countries the legislated candidate quotas for the parliamentary elections are adopted.

A wide experience in introducing and implementing gender quotas is accumulated worldwide. Academic interest in studying gender quoting has increased as well. The number of studies which assess the influence of introducing gender quotas on the political representation of women in various political contexts is growing.

Political representation of women implies two aspects: quantitative, descriptive representation (existence of a certain number of women in politics) and substantive representation (defence of women's interests). A certain number of studies on gender quotas analyze the type of association between the growth of women's descriptive representation and the strengthening of substantive representation.

Experience of various countries demonstrates that gender quoting enlarges not only the descriptive representation of women, but the substantive representation as well i. e. strengthens considering women's interests in the policy making (Beckwith, 2007, p. 27).

The interrelation of the number of elected women and the results of public policy is attempted to explain through the concept of critical mass according to which women's representation should exceed a certain quantitative threshold to offer women an opportunity to transform political processes. A vulnerable aspect of the "critical mass" theory is the problem of determining the threshold percentage overcoming which will give women an opportunity to impact a policy-forming process.

According to Drude Dahlerup, a gender quota scholar, 30% is generally considered the minimal representation necessary to invoke substantive changes in politics.

During the last 30 years, the concept of critical mass widely spread among politicians, representatives of the media and the women movement. It was and is actively exploited in arguments concerning the necessity of the measures directed towards increasing the number of women in politics (Childs & Krook, 2008, p.725).

Nowadays researchers are relatively skeptical of the concept of "women's critical mass", though they do admit that it fulfilled an important role in the development of further and more consistent research into the political representation of women.

Researches show that, in certain cases, after enlarging women's representation, changes took place regarding legislative discourse, initiatives and results: in particular, legislative initiatives directed towards the protection of women's interests are introduced by women deputies, cooperation with women organizations and groups becomes stronger, gender dimension is introduced into the political debates (Childes & Krook, 2009). Though in some cases, the growth of women's descriptive representation does not entail significant changes in the legislative practice.

Accordingly, to strengthen women's essential representation, the importance of critical mass is great, though without critical actors the proper effect may not be received. Even more, critical actors manage to protect women's interests even in the situation of the absence of critical mass. Thus, alongside the growth of the number of women politicians, it is important to have such women politicians, who are positioned as defenders of women's interests.

Some researchers think that quotas can create a certain "mandate effect" i.e., create, in the women deputies elected as a result of quoting, some sense of obligation to carry out the policy of promoting the interests of women (Franceschet & Piscopo, 2008, p.395). The "mandate effect" is strong in those contexts where the gender quota was accepted as a result of pressure on behalf of the women's movement.

Gender quotas can give rise to the opinion that the elected women deputies are less qualified and less independent. The "quota women" stereotype can harm the political image of the women deputies. This phenomenon is called the "label effect" (Franceschet & Piscopo, 2008, p.395).

The opponents of quotas often say that gender quoting will result in electing less qualified women instead of more qualified men politicians. But the research results show that gender quotas do not affect negatively the quality of elected politicians. E. g. the research, that was based on the example of the 1993 municipal elections in Italy, analyzed the influence of forming the gender quota-based candidate lists on the quality of the elected politicians, demonstrated that the elected women were more educated than men and the quotas reduced the number of low-educated men in the municipal councils (Baltrunaite, Bello, Casarico, & Profeta, 2014, Pages 62).

One of the issues discussed in the academic literature on gender quoting is concerned with the reasons for accepting gender quotas in men-dominated parliaments. The motivation of the authorities tending to the election autocracy could be the desire to improve a democratic image. According to the research data, there really exists a relationship between accepting gender quoting, enlarging women's deputation in parliament and improving the international reputation (Bush & Zetterberg, 2021).

Adoption of the gender quotas

In 2020 Georgia joined the countries where legislated candidate quotas are accepted.

Adoption of the gender quotas in Georgia has its pre-history. Legislative proposals concerning gender quotas were initiated several times (1998, 2003, 2008, 2015, 2018). In 2015 30 000 signatures of citizens were added to the women's appeal, though the political class reacted with indifference.

The legislative proposal of 2018 which was introduced by a Task Force on Women's Political Participation with the support of 118 women organizations and 30 000 signatures of citizens, envisaged compliance with the principle of alternation of candidates of different gender on the proportional lists. According to the presented proposal in case of refusing to fulfil the quota requirement, the party was not to be allowed to take part in elections; in case of early termination of a deputy's mandate, he/she was to be replaced by a candidate of the same gender on the party list. In the presented initiative the percentage threshold is high and the sanction severe since it

is necessary to receive an efficient quota. This initiative, in difference from the previous ones, received more support from the political class. It passed the phase of the committee hearing, though did not receive the necessary votes at plenary session of the parliament.

In the autumn of 2020 on the initiative of the ruling party, rather surprisingly for the society and the women's organizations, the principle of obligatory gender quoting was, for the first time in Georgia, accepted at the legislative level. The principle implied the entering of at least one representative of a different sex in every four members on the election list submitted by political subjects for the parliamentary elections, and the entering of different gender candidates in alternation on the proportional lists for the local self-government elections. But one year later certain regress was made concerning the formulation of the candidate quotas stated for the elections of local self-government. In particular, in the summer of 2021 just before the local elections, the parlament, without informing society in advance, changed urgently the statute of candidates' gender quoting and at present the principle of alternation of different gender candidates is replaced by the rule of entering in every three candidates at least one of a different gender.

Debates on the gender quotas

It should be noted that the adoption of the quoting regulation in the summer of 2020 and changing the candidates' alternation regulation in the local elections in 2021 took place against the background of the acute political crisis and within the frames of a vast package of changes of electoral legislation and thus the debates on the gender quotas were overshadowed by other issues of the political agenda.

The adoption of the obligatory gender quotas was followed by two complaints in the constitutional court. A sufficient part of the debates on gender quotas in Georgian society was conducted in parallel with the hearings of the two complaints against the quoting in the Constitutional court. Both complaints were brought in by the opposition parties: the first complaint to the constitutional court was brought in by a political party "Girchi" before the parliamentary elections of 2020, and the second was brought in by a political union "European Georgia" before the local elections in 2021.

Almost all the positions in favour and against the gender quotes that were put forward during the public discussion are given in the arguments of the complainants, defendants and the Constitutional court.

In the complaint by Girchi, the party considers the gender quota regulation to be unconstitutional and claims that acceptance of this regulation will violate both passive and electoral rights. As Girchi declares a list of candidates in their party is formed by the party partners via a digital portal and the place of a particular politician on the party list is determined as a result of voting. Acceptance of the quoting regulation implies changing the party list and forming it anew, artificially and against the will of the partners; therefore, it restricts the active electoral right of the supporters of the political party to make a party list according to their wills. Ultimately, according to "Girchi", attempts to artificially increase the number of women in the parliament is a clumsy interference in the political process and sets limits to people's free will.

According to the arguments presented in Girchi's complaint, not only an active electoral right is violated, but a passive one as well since the obligatory setting of quotas impacts the sequence of the candidates on the party list and therefore, influences their chances of getting into the parliament. Those who in case of non-existence of this dubitable regulation could get into the parliament, will fail to achieve this goal, since at least one place in every four will be occupied by a woman. According to Girchi, the idea of equalizing results is in itself fallacious and unjust as it devalues man's merits and professionalism and hinders progressive development; the fact that the percentage of women in the Parliament of Georgia is low can be caused by a lot of other factors, among them is the fact that women are in a lesser degree interested in politics than man.

There were given more arguments against the gender quoting in the constitutional complaint submitted by a political party "European Georgia-Movement for Liberty" than in Girchi's case. Arguments that can be united in the group of passive and active electoral rights were also put forward in this complaint and certain arguments regarding accepting the gender quoting norm as a limitation of the activity of the political party were added.

According to the complaint of "European Georgia", the freedom of party activity implies the right to select the persons with whom it will compete other parties. The gender quoting annihilates the possibility of realizing this right since it obliges the parties to select candidates

on the basis of gender. The political party's right to participate in elections is limited as it is deprived of the right to register the party list unless the number of different gender representatives determined by the law are enrolled. The political party's right to receive a mandate to the representative organs according to the consecutiveness of the presented party list is violated since in case of early termination of the mandate of a member of the representative organs, the mandate is to be given not to the next candidate of the party list, but to a candidate of the same gender.

Certain considerations concerning the constitutional complaints were presented by non-governmental organizations "Georgian Young Lawyers' Association" and "International Society for Fair Election and Democracy". The considerations presented to the Constitutional court by the non-governmental organizations consisted of the following arguments in favour of gender quoting:

- The necessity of obligatory quoting was determined by the fact that the existing political culture made a negative impact on women's representation.
- When one part of the population especially the majority is not adequately presented in the legislative institution the democratic governance of the country is in danger. Passive electoral right can be limited to reach the goal which is in compliance with democracy and the principles of the legal state. Securing gender equality in the representative institution, that follows from the international obligations undertaken by Georgia is just such a legitimate goal.
- Enlarging women's representation in the parliament is a necessary pre-condition for working out friendly politics on women's issues. To achieve the engagement of women in political processes it is necessary to make, through the quoting, the women's representation in the elective institutions reach a certain level, the so-called critical mass.
- Concerning a range of issues women's experience differs from that of men, therefore, state politics will become more argued, correct, justified and legitimate if a group which has an immediate experience of facing particular challenges will be engaged in its forming. Gender variety creates the possibility of carrying out high-grade discussions where the representatives of both gender groups have the chance to share their unique personal experiences.

- Building the mechanisms of gender quoting will, in the long-term perspective, facilitate changing the political culture and the environment that is abundant in gender stereotypes at present.

The Constitutional Court of Georgia did not satisfy the complaints against gender quoting based on article 11/3 of the Constitution of Georgia, which stipulates that "The State shall take special measures to ensure the essential equality of men and women and to eliminate inequality".

The Constitutional Court considered that it is a clearly declared will of the Constitution of Georgia to grant the State legitimation to carry out certain positive activities to ensure essential gender equality and annihilate the existing inequality.

In the judgement of the Constitutional Court of Georgia, the following arguments are set forth to defend the quoting norm:

- The small representation of women in the parliament is conditioned by certain circumstances existing in society and hindering women's engagement in politics. The model of obligatory quoting is a means to neutralize artificial obstacles to women's engagement in politics and not a mechanism of artificial gender equalizing.
- A small representation of women in the parliament of Georgia is not a one-off but a continuing phenomenon. Accordingly, this reality cannot be considered as simply accidental and hope that, before long, it will be changed all by itself without state interference.
- The political picture demonstrates that, in fact, the best candidates are not being elected from half of the country's population – women; it is not only unfair but at the same time is an act directed against effective governing and achieving success.
- Enlarging women's representation is of serious interest in a democratic society. It ensures more inclusive, balanced and pluralistic representation. Increasing women's participation in such an important and, at the same time, men-dominated sphere as politics has a serious positive influence and communicable effect to improve the situation in other spheres.

Outcomes of gender quotas on women's descriptive representation

The principle of gender quoting was in force at two elections – the 2020 parliament and the 2021 local self-government elections. Therefore, it is already possible to analyze a certain practice of gender quotas.

The effectiveness of the quotas will be assessed by two criteria: 1.the extent to which the goal set by the quota design was achieved; and 2. Whether there was a noticeable progress in comparison with the previous elections.

The weak point of the gender quota design accepted for the parliamentary elections is a rather low threshold for women's representation. According to the existing quota design in every four candidates on the proportional list for the parliament elections, at least one should be of a different gender. It seems that, in the result of quoting, women's representation in the parliament should at least be 25%. Though, since the members of the parliament of Georgia are elected not only on the proportional electoral system but also on the majoritarian electoral system and since the experience of all previous elections showed that the parties practically do not nominate women as majority candidates, it was clear from the beginning that it was impossible to receive even a 25% women representation in the parliament based on the given design gender quota.

As a result of the 2020 parliamentary elections, in total 31 women were elected, among them, 30 were elected proportionally and one - on the majoritarian electoral system.

Two small parties "Alliance of Patriots of Georgia" and "Grichi" received 4 parliamentary mandates each and accordingly had one woman candidate in every four candidates; these parties took advantage of the formulation of the electoral code concerning the replacement of deputies, according to which in case of termination of the mandate of a deputy, a woman candidate should be replaced by a woman candidate next on the list, though if there were no women candidates, then it was possible to replace her by a man candidate. Irma Inashvili who was a winning candidate from "Alliance of Patriots of Georgia" and Salome Mujiri from "Grichi" made statements in writing concerning the termination of their authorities, and in addition, canceled the party lists with the exception of several men candidates,

therefore it became possible to complete the vacant places by men candidates. Due to these manipulations, two women deputies were absent from the women's deputation.

It is interesting that the party list of "Alliance of Patriots of Georgia" was the only one among the parties which received mandates which had a woman as its number one. Finally, all four mandates received by this party went to men candidates.

It should be noted as well that by the 2021 local self-government elections the regulation of replacement was improved and it became impossible to carry out such manipulations. According to the new formulation, a woman can be replaced only by a woman and if there is no more woman candidate on the submitted party list, the mandate will be nullified.

Finally, the women's representation in the 2020 parliament is 19.3% which is only 3.3% more than the result of the previous parliamentary elections (16%). Thus, due to the low threshold stated by the gender quoting, the quota was not effective in the 2020 parliamentary elections. It did not bring about a significant and notable growth in the women representation percentage among the parliament deputies. It also should be noted that the 3.3% growth of women deputies in the situation when the gender quota was in force is less than in the previous 2016 elections when the women's representation in the parliament grew by 4.7% if compared to the 2012 parliament.

The quota regulation was more fruitful in the 2021 local self-government elections. The goal designed by the gender quoting was achieved and, in comparison to the previous elections, it was a fast track forward.

According to the gender quoting design stipulated for the local elections, one of the three persons on the party lists was to be of a different sex. Assuming that every small party could have at least 3 deputies in all local assemblies, the theoretical threshold was a maximum of 33.3%. In fact, the figure was 31.4% of women among the deputies elected on the proportional system, which is very close to the theoretical threshold. Therefore, it can be said that the goal set through the gender quoting design was fulfilled successfully. The fact that by the 2021 elections the amendment forbidding to replace women elected due to the quoting by men in cases of rejection of the mandates of deputies and removing the party

lists as it happened in the 2020 parliament elections in case of two political parties, had already been in force, helped to achieve the goal set.

Due to the quota effect in the local elections, we have received sufficient progress in comparison to the previous elections regarding women's representation in the municipal assemblies. It can be said that we had a fast-track effect since the women's representation in the municipal assemblies is 23.7% which is 10.2% more than in the previous elections.

% of women deputies in the local assemblies

Year	%
1998	14%
2002	12%
2006	11%
2010	11%
2014	11.6%
2017	13.5%
2021	23.7%
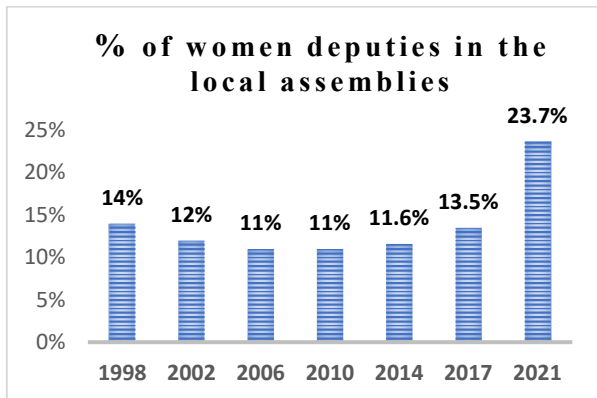
One of the reasons for the 10% leap is the fact that from the viewpoint of women's representation, the situation in the local self-government was even worse than in the parliament and the number of women in the local assemblies was only 13.5%, which was less than the women representation in the parliament. The second reason is the fact that in the local elections, the quota regulation was better and in difference to the parliament elections at least one candidate of a different sex was to be not in every four, but in every three candidates.

In the 2021 local elections 1404 members of the assemblies were elected on the proportional election system, among them are 440 women which is 31.4% of the deputies elected on the proportional system. In the elections on the majoritarian system, gender quoting was not active throughout the country and therefore only 50 women were elected to the assemblies, that is 7.5% of the deputies (total 664 deputies) elected on the majoritarian system. These results confirm once more that the majoritarian system is not favourable for the growth of the political representations of women.

Gender statistics of the 2021 local self-government elections:

(Data of the The Central Election Commission and the autors' calculations)

	Number of women deputies	Number of men deputies
Elected on the proportional system	441 (31.4%)	963 (68.6%)
Elected on the majoritarian system	50 (7.5%)	614 (92.5%)
Total	491 (23.7%)	1577 (76.3%)

Conclusion

For the next 2024 parliament elections the threshold for women's representation is left the same in the election law – i.e., one candidate of a different gender in every four candidates; the law envisages amendments only for the 2028 parliamentary elections stating a norm of enlisting one candidate of a different sex in every three candidates on the list. The positive factor is the fact that the amendment to the law which means that the elections will be held only on the proportional electoral system will come into force at the 2024 parliamentary elections and, therefore, it will become possible to reach 25% as is designed by the quota, though it will not be a fast-track development. Therefore, it is important that the amendment obliging the parties to introduce one candidate of a different gender in every three candidates on the party lists is adopted by the 2024 parliamentary elections. Thus, it would be possible for the women's representation in the parliament of Georgia to come close to the generally recognized "critical mass" of 30%.

2. **Bibliography:**

Baltrunaite, A, Bello, P., Casarico, A., Profeta, P (2014). Gender quotas and the quality of politicians. Journal of Public Economics, 118. Pages 62-74. https://doi.org/10.1016/j.jpubeco.2014.06.008.

Beckwith, K. (2007). Numbers and Newness: The Descriptive and Substantive Representation of Women. *Canadian Journal of Political Science / Revue Canadienne de Science Politique*, *40*(1), 27–49. http://www.jstor.org/stable/25166063

Bush, S. S., & Zetterberg, P. (2021). Gender Quotas and International Reputation. American Journal of Political Science (AJPS), 65 (2), 326-341. https://onlinelibrary.wiley.com/doi/10.1111/ajps.12557

Childs, S., & Krook, M. L. (2008). Critical Mass Theory and Women's Political Representation. Political Studies, 56(3), 725–736. https://doi.org/10.1111/j.1467-9248.2007.00712.x

Childs, S., & Krook, M. L. (2009). Analysing Women's Substantive Representation: From Critical Mass to Critical Actors. *Government and Opposition*, *44*(2), 125–145. http://www.jstor.org/stable/44484170

Franceschet, S., Piscopo, J. M. (2008). Gender Quotas and Women's Substantive Representation: Lessons from Argentina. Politics & Gender 4, no. 3, 393–425. doi:10.1017/S1743923X08000342.

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Measuring a State's Power:

Comparative Analysis of Multi and Double-Variable Evaluation

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Abstract

Measuring a state's power has already been a concern for scholars of International Relations. Because of the features of political science, it is quite challenging to create a formula that will precisely calculate the power of a state. Therefore, some authors prefer to weigh the capacity of a country via control over other actors or events and outcomes. Nevertheless, control over resources still remains a primary method to quantify and reveal a state's capability via numbers. However, the ways of calculation as well as results may be significantly different. The aim of this article is to compare the results of multi-variable and double-variable evaluations. The multi-variable analysis is based on the Composite Index of National Capability and Kenneth Waltz's guideline. The double-variable calculation is based on Economic and Military capabilities, respectively.

Keywords: Power, Measurement, Capabilities.

Introduction

One of the most crucial questions in International Relations is what makes some states more powerful than others (Beckley, The Power of Nations, 2018). Before answering the most important question, it is noteworthy to mention that the superficial similarity among states is that they are the same functionally. However, countries differ in many ways, such as means, resources, capacity, and competence (Waltz, 1979, p. 97). In simple term, these are called capabilities. Therefore, the unequal distribution of capabilities makes some countries more powerful than others. Perhaps, this is a simple answer to the salient question; however, it is still vague to measure precisely how stronger a country is, compare with another.

For decades scholars have been trying to figure out the most sophisticated method for power measurement. The reason lies in the feature of social science. Unlike natural science, there is no standard formula where F=m*a. Thus, we face disagreement on understating the concept of power as well as on measurement methods. Some Scholars prefer to use qualitative variables for better evaluation (Singer et al., 1972). Other scientists consider that power not only consists of concrete variables like territory, population, and natural resources but intangible features also matter, like political competence (Waltz, 1979), diplomatic skills, institutional arrangement or ideology (Nye, The Future of Power, 2011). Some authors go beyond and mention that the main focus has to be directed toward the ideational/cultural part of the power and not the tangible one (Wendt, 1999, pp. 96-97).

The primary aim of the article is to follow the Realist pattern and use the classic formula for capability measurement – Composite Index of National Capabilities and contrast it with Waltz's guideline. In the final phase of the investigation, the results will be compared with economic and military capabilities – respectively and together.

Literature Review

After the birth of the world political map, power became an indispensable feature of every state. Power resembles love, and it is simple to experience rather than describe or evaluate it (Nye, 1990). Generally, there are three approaches to power measurement: 1) Control over resources; 2) Control over actors; 3) Control over events and outcomes (Hart, 1976). According to certain scholars, control over actors (Dahl, 1957) and control over events and outcomes (Hart, 1976) are better for precise measurement. Perhaps the second and third approaches seem impressive; they might not be instrumental and wrongly define reality. For example, the United States was unable to defeat North Vietnam in a Vietnam war. The US was powerless to control actors, events and outcomes. USSR's war in Afghanistan is the same illustration. However, it would be unwise to conclude that the United States was weaker than North Vietnam or that the Soviet Union was frail compared with Afghanistan. The failures suppose that even mighty states could not handle the specific situation. And despite defeats, the US and the USSR still were great powers because of control over resources. And this approach has been generally acknowledged since the 1960s (Singer & Small, 1966).

Even nowadays, measuring power is essential for International Relations. Quantification of capabilities makes states' ranking easier. Defining a top country or countries helps to figure out the type of system, whether it is unipolar, bipolar or multipolar. Further, the international system model hints at great powers' interactions (Keersmaeker, 2017, p. 4) and general outcomes (Waltz, 1979, p. 210) and makes predictions simple. Without quantitative data, it is hard to determine how much state A's power exceeds state B's. Thus, quantitative options and guidelines are significant for better explanations and descriptions.

Since the birth of political science and IR theories, many scholars have been trying to introduce sophisticated methods for measuring national capabilities. At the beginning of the 1970s, David J. Singer, Stuart Bremer, and John Stuckey introduced the national capability data set consisting of six variables. These variables are the components of the well-known CINC – Composite Index of National Capabilities. The index consists of three dimensional six indicators. The dimensions are population, industry and military strength. Each includes dyads: 1) population and urban population; 2) iron and steel production and coal consumption; 3) military personnel and military expenditure. According to the formula, the country-world ratio of each indicator is calculated respectively. Then all six are summed and divided by the number of the total amount of indicators – six (Singer et al., 1972). In this index, one salient parameter is missing – the size of a territory. At the end of the 1970s, Kenneth Waltz proposed different variables for state power measurement: Territory and population; resource endowment; economic capability; political stability and competence; military strength (Waltz, 1979, p. 131). The suggestion had political as well as theoretical reasoning.

At the beginning of the 1970s, when US and China's cold relationship started melting. The first direct communication was in 1971 when Henry Kissinger secretly visited Beijing (Kissinger, 1994, p. 727). Almost a year later, in 1972, Nixon personally visited the Great Helmsman. The Shanghai Communique emerged from the meeting where Sino-American sides acknowledged sovereignty, territorial integrity and peaceful coexistence (Rich, 2003, pp. 450-451). This event inspired some scholars who stated that the world was becoming tripolar (Healy & Stein, 1973). Others even mentioned the theory of tripolarity (Nogee & Spanier, 1977).

Waltz argued that whether a state is a great power depends not on acknowledgement by other great powers but on capabilities. However, he mentioned that determining the number of top

players in international politics is simple or as challenging as finding the most prominent companies in the oligopolistic market, and common sense can help with it (Waltz, 1979, pp. 130-131). We can assume that the author suggests quantitative and qualitative approaches for exploring top-ranking states. This exciting proposition will be intensely scrutinized in the methodology part.

While in the 1960s and 1970s, scholars were obsessed with several different indicators for capability measurement, at the end of the 20th and beginning of the 21st century, authors concentrated only on two variables – economic capability and military assets (Kennedy, 1987) (Tellis et al., 2000). A country's wealth, referred to as latent power, is the foundation for military strength (Mearsheimer, 2001, p. 55). However, it doesn't mean that a wealthy state is a militarily powerful actor. It depends on a policy of a country whether it prefers "guns or butter" (Monteiro, 2014, p. 16). On the other hand, it is quite alarming for great power when a potential challenger's irreversible economic growth is accompanied by expanding military assets.

After the 2008 world financial crisis, authors argued that the unipolar moment was over, and new great power – China - was rising (Allison, 2017) (Zakaria, 2011). There was a case when a scholar mentioned bipolarity because of China's economic progress (Xuetong, 2011). Despite the zeitgeist of diclinism, work suggests that the US power is unrivalled and Beijing will need too much time to catch up with Washington (Beckley, 2018).

Regardless of contrasting ideas and works, one thing remains the same. The "Control over resources" approach remains essential. However, the superficial differences in measurement between the old 1970s and 2000s are apparent. The main question is how contrasting the results of distinctive evaluations will be.

Research Question, Hypothesis and Methodology

The primary research question can be formulated as Does a double-variable measurement of a state's power give the same result as a multi-variable measure? The answer as a central hypothesis is Yes. Before defining measurement methodology, it is essential to explain how the comparative analysis will be conducted.

For example, if we select five random states, these countries can be put in a particular order, alphabetically or according to their capabilities. The latter hierarchy is the most important for the research. A specific type of hierarchical "ladder" will be created by using CINC. The primary task of the work is to demonstrate what kind of hierarchy is given by Waltz's guideline and compare it with CINC results. Later the same comparison will be utilized, but in this case, CINC and Waltz's guideline will be compared with economic and military capability. This comparison resembles the "method of agreement." Despite the different features, the primary mission is to find more similarities as the possible reason for the variable (Evera, 1997, pp. 23-24).

According to the central hypothesis, the similarity lies in hierarchical "ladders", and the rankings will be the same. However, the results may be completely different or almost identical. The latter two words propose slightly different outcomes with no more than one step switch up or down. For description, it is better to use a hypothetical table. Let's imagine there are five states: A, B, C, D and E. Capabilities, according to CINC, are: A=0.5; B=0.4; C=0.3; D=0.2 and E=0.1. The results of Waltz's guideline are A=0.7; B=0.55; C=0.51; D=0.4, and E=0.21. In this case, the general effect will be identical. Even though numerical data differ, the rankings of the states are the same (Table 1). There is a probability that the outcomes of diverse evaluations will be different.

Table 1 Hypothetical Comparison	
Country/CINC	Country/WG[1]
A=0.5	A=0.7
B=0.4	B=0.55
C=0.3	C=0.51
D=0.2	D=0.4
E=0.1	E=0.21

Table 2 Hypothetical Comparison	
Country/CINC	Country/WG
A=0.5	B=0.67
B=0.4	A=0.65
C=0.3	C=0.41
D=0.2	E=0.3
E=0.1	D=0.2

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[1] Waltz's Guideline

If countries switch hierarchical (Table 2) places, this may be almost identical. In the case of getting this type of result, the hypothesis is neither confirmed nor declined. The hypothesis will be rejected if the outcomes are contrasting (Table 3).

In the beginning, the comparison will be two-fold, CINC vs WG. Further, it will be three and four-fold compared with economic and military capabilities. Before conducting evaluations and comparative analysis, salient questions must be answered: 1) How to quantify Waltz's Guideline? 2) How to measure economic and military capabilities? 3) What countries have to be selected for comparison?

As Kenneth Waltz admitted, state ranking rests on the size of the following parameters: Territory and population, economic capability, resource endowment, military strength, political stability and competence (Waltz, 1979). Measurement of territory and population is pretty simple. There are precise units, such as square kilometers and people. In terms of economic capability and resource endowment calculation, simplicity is gone. Probably in the 1970s, it was essential to distinct economic performance and resource endowment. However, it may be assumed that it is not so important nowadays. The resources utilized by a state are part of the state's economy. And Gross domestic product- GDP is the most popular variable for weighting economy. The authors who emphasize China's rise have at least one standard. They use GDP to determine economic strength (Subramanian, 2011) (Allison, 2017) (Rachman, 2017). Even though Michael Beckley considers GDP as a less precise variable gross domestic product is part of the 'rough proxy' he uses for measurement. Thus, resources are included in the economy, and the parameter of the economy is GDP.

Table 3 Hypothetical Comparison	
Country/CINC	Country/WG[2]
A=0.5	B=0.8
B=0.4	D=0.45
C=0.3	A=0.31
D=0.2	E=0.14
E=0.1	C=0.01

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[2] Waltz's Guideline

Military expenditure, armed forces and organization, weapons, and platforms are salient in determining conventional might (Lowy Institute, 2023). Calculating and comparing strength via diverse types of guns, fighting gadgets or systems is hard. However, military spending is the most straightforward proxy, along with the size of personnel that can be used for defining the potential of fighting power.

Finally, to turn Waltz's guideline into a formula, it is necessary to quantify political stability and competence. Both depend on the politicians' level of education and skills. To simplify the riddle, assuming that competence and stability derive from knowledge is convenient. Therefore, according to the assumption, higher wisdom, higher competence, and higher competence, higher is stability. Perhaps the most useful proxy for this part is the annual amount of scientific works in the field of political science. The conclusive image of the formula will resemble CINC: the average of the sum of each variable's world ratio -

$$\frac{\frac{State's\,Teritorry}{World's\,Teoritory}+\frac{State'sPopulation}{World'sPopulation}+\frac{State's\,GDP}{Wordl's\,GDP}+\frac{State's\,ME^3}{World\,ME}+\frac{State's\,MP^4}{World's\,MP}+\frac{State's\,C\&S^5}{World's\,C\&S}}{6}$$

In the first phase of comparison, the results and state rankings of CINC will be compared with WG. The next step is to make a threefold comparison: CINC vs WG vs Economic capability. Waltz's guideline includes economic capability, precisely the ratio of a state's GDP to the world's GDP. It might be unfair to compare the multi-variable formula with a simple ratio that is included in the formula. Changing the measurement method of separate economic potential is essential to eliminate the slightest similarity or coincidence.

GDP is a useful proxy to measure a state's wealth, success or failure (Karabell, 2014). However, it is not so precise in terms of efficiency. According to the World Bank, the GDP of Bangladesh was 416.26 billion USD in 2021 (World Bank, GDP (current US$) - Bangladesh, 2023). Luxemburg had 85.51 billion USD (World Bank, 2023). It seems clear that Bangladesh's economy is almost five times bigger than Luxemburg's. Conversely, Luxemburg has a better productivity level, and in proportion, its efficiency with 650 364 people (CIA, 2023) is higher than Bangladesh with a 165 650 475 population (CIA, The World Factbook - Bangladesh, 2023).

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[3] Military Expenditure
[4] Military Personnel
[5] Competence & Stability

The simplest way to demonstrate it is via GDP per capita. In 2021 GDP per capita of Luxemburg was 107 792$, while Bangladesh had only 1684 USD (World Bank, 2023). One of the latest studies tried to measure states' power by combining these two variables. Using Bairochs suggestion, Michael Beckley created a primitive proxy by multiplying GDP by GDP per capita. The aim was to expose the significance of net resources (Beckley, 2018, p. 18). This approach has at least two issues: 1) the proxy doesn't demonstrate net resources. If net means deduction of cost, the formula should have the subtraction sign "-". The actual image of Beckly's evaluation is $\frac{GDP^2}{Population}$. 2) The second issue is that the formula gives big numbers, and the variable doesn't demonstrate anything in an absolute or relative manner. The mission of this study is not to sophisticate the evaluation of net resources but to describe economic capability in relative terms.

The ordinary recipe for the calculation of relative economic capability can be exhibited via arithmetic mean and demonstrated as the following: $\frac{\frac{State's\ GDP}{Word\ GDP}+\frac{State's\ GDP\ per\ capita}{World\ GDP\ per\ capita}}{2}$. The problem with the calculation is the feature of specific states with higher GDP per capita than the world GDP per capita. In the evaluation, the sum of $\frac{State's\ GDP}{Word\ GDP}$ with $\frac{State's\ GDP\ per\ capita}{World\ GDP\ per\ capita}$ will not change much unless the plus sign is modified by multiplying one. In this case, it will be better to transform the arithmetic mean into a geometric one. Thus, instead of using $\frac{\frac{State's\ GDP}{Word\ GDP}+\frac{State's\ GDP\ per\ capita}{World\ GDP\ per\ capita}}{2}$ the precise mathematical solution is $\sqrt{\frac{State's\ GDP}{Word\ GDP}*\frac{State's\ GDP\ per\ capita}{World\ GDP\ per\ capita}}$. This suggestion can be called the GMEC - geometric mean of economic capability.

The same approach will be used for the calculation of military capability. The two main variables are military expenditure and military expenditure per military. The latter may seem provocative, but it is helpful for better measurement.

It is noteworthy that military expenditure per capita is one of the most common parameters to measure how much a state spends on security. This variable demonstrates how much a share of the total military cost per person is. Even though the parameter exhibits an average amount of money "paid" by an average citizen for security, it doesn't statistically demonstrate how much

is "spent" on each soldier. Therefore, changing military expenditure per capita with military expenditure per military will fill the gap and hint roughly how much is "invested" in a soldier. And a ratio of a state's military cost per military with world military expenditure per military will demonstrate how much the state spends on each solder, more or less than the world average.

Finally, the geometric mean of military capability - GMMC can be demonstrated as following:

$\sqrt{\dfrac{State's\ military\ expenditure}{Word\ military\ expenditure} * \dfrac{State's\ military\ expenditure\ per\ military}{World\ military\ expenditure\ per\ military}}$. But what countries should be selected for comparison? Instead of calculating the capabilities of all states worldwide, it is simple, clever and effortless to follow a structural realist pattern and choose the most vital countries. This is the case when common sense can give us the correct answer without measurement.

As Waltz argued, the world's political outcome depends on the interaction of big rather than small players in the global political arena. And finding the salient states is as straightforward or complicated as discovering major firms and enterprises in an oligopolistic market (Waltz, 1979, pp. 72, 131). Instead of searching the salient in the UN security council or top ranks of the OECD members, simply G8+5 provides an attractive solution.

The reason for not selecting G7 states is that there are not presented such significant actors as China, India and even the Russian Federation. The reason why Russia was kicked out from the G "club" was political and had no connection with capabilities. Additionally, not representing the most significant economies of Asia and the world in the study hardly gives a reliable outcome. Therefore, the selected states will be members of G8+5.

The comparative analysis will have three phases. The first one will demonstrate the similarity/difference between CINC and WG. The second phase will include a comparison of the results of GMEC with the previous two calculations – CINC and WG. The third one will cover previous comparisons with GMMC.

It can be argued that mathematically, the comparison is incorrect. CINC and WG are calculated according to the average mean of a state's six different indicators of state-to-world ratio. However, GMEC and GMMC are calculated via geometric mean, with only dyadic variables.

Nevertheless, the last two methods will demonstrate if the calculation using six variables gives the exact result as the estimation via a couple of variables.

According to the hypothesis, the results of each calculation will create precisely the same ranking of the G5+8 States. The hypothesis is neither proven nor refuted if the hierarchical pattern is slightly different. In case of a completely different outcome proposition will be wrong.

Comparison of CINC with Waltz's Guideline

The data of the composite index of national capability can be found on the website of the correlates of war project. The only issue is the latest data which covers 2016 only. Thus, the calculation and evaluations were based on some old info. For comparison, the last 5 years, 2012-2016, were selected to determine how the capabilities changed during that time.

According to the latest data, the hierarchy of G8+5 countries' ranking is demonstrated in Table 4. According to CINC data, the top state is China, and the United States holds the second. During the five years, the raking of the states is almost the same. The difference appeared in 2012, 2013, and 2014 when the United Kingdom and Mexico switched places.

Table 4 G8+5 States Ranking According to CINC									
Country/CINC 2012		Country/CINC 2013		Country/CINC 2014		Country/CINC 2015		Country/CINC 2016	
China	0.220	China	0.228	China	0.228	China	0.231	China	0.230
USA	0.138	USA	0.132	USA	0.129	USA	0.133	USA	0.133
India	0.080	India	0.081	India	0.083	India	0.085	India	0.086
Russia	0.039	Russia	0.039	Russia	0.039	Russia	0.036	Russia	0.036
Japan	0.035	Japan	0.035	Japan	0.033	Japan	0.032	Japan	0.032
Brazil	0.025	Brazil	0.024	Brazil	0.024	Brazil	0.023	Brazil	0.023
Germany	0.017	Germany	0.017	Germany	0.016	Germany	0.016	Germany	0.016
UK	0.015	Mexico	0.014	UK	0.014	Mexico	0.014	Mexico	0.014
Mexico	0.015	UK	0.014	Mexico	0.014	UK	0.014	UK	0.013
France	0.014	France	0.014	France	0.013	France	0.013	France	0.013
Italy	0.012	Italy	0.011	Italy	0.011	Italy	0.011	Italy	0.011
Canada	0.009	Canada	0.008	Canada	0.008	Canada	0.008	Canada	0.008
South Africa	0.006	South Africa	0.006	South Africa	0.006	South Africa	0.006	South Africa	0.006

Nevertheless, CINC results are the primary model for comparing other calculations, and it is not significant how the ranking changes within the CINC results in different years.

The primary question is if the WG results are the same (in terms of ranking) as the outcome of the CINC evaluation.

As Table 4.1 demonstrates, the results of WG are entirely different than CINC-based ranking. The first significant difference is the positions of the US and China. According to CINC results, China is the leader. Conversely, the WG results demonstrate that the United States is the top country. The difference is significant in terms of other states' hierarchy comparisons. One of the most interesting cases is the position of the United Kingdom. In CINC order, it has the 8th and 9th place; meanwhile, in the WG ranking, it is in second place. Such fascinating change completely rejects the hypothesis, and this single example is enough to conclude that the hypothesis is wrong.

Ranking	State/CINC 2012		State/WG 2012		State/CINC 2013		State/WG 2013	
				Table 4.1[6]				
				CINC and WG Comparison				
1	China	0.220	USA	0.181	China	0.228	USA	0.175
2	USA	0.138	UK	0.124	USA	0.132	UK	0.124
3	India	0.080	China	0.097	India	0.081	China	0.102
4	Russia	0.039	India	0.068	Russia	0.039	India	0.068
5	Japan	0.035	Russia	0.044	Japan	0.035	Russia	0.044
6	Brazil	0.025	Brazil	0.028	Brazil	0.024	Brazil	0.028
7	Germany	0.017	Canada	0.025	Germany	0.017	Canada	0.025
8	UK	0.015	Japan	0.025	Mexico	0.014	Japan	0.022
9	Mexico	0.015	Germany	0.022	UK	0.014	Germany	0.022
10	France	0.014	France	0.020	France	0.014	France	0.021
11	Italy	0.012	Italy	0.015	Italy	0.011	Italy	0.014
12	Canada	0.009	Mexico	0.011	Canada	0.008	Mexico	0.011

[6] Calculation of Waltz's Guideline (WG) was based on data acquired from Scimago Journal Rank; World Bank; CIA Factbook and SIPRI

| 13 | South Africa | 0.006 | South Africa | 0.006 | South Africa | 0.006 | South Africa | 0.007 |

The difference is evident in observing other states as well. Japan declined from 5th place to 8[th,] and Canada jumped from 12th to 7th place. Almost the same pattern was repeated in 2014, 2015 and 2016. As Tables 4.2 and 4.3 show difference is continued. However, there are the

Table 4.2								
CINC and WG Comparison								
Ranking	**State/CINC 2014**		**State/WG 2014**		**State/CINC 2015**		**State/WG 2015**	
1	China	0.229	USA	0.171	China	0.231	USA	0.170
2	USA	0.129	UK	0.122	USA	0.133	UK	0.121
3	India	0.084	China	0.104	India	0.085	China	0.107
4	Russia	0.039	India	0.070	Russia	0.037	India	0.070
5	Japan	0.034	Russia	0.046	Japan	0.033	Russia	0.049
6	Brazil	0.024	Brazil	0.028	Brazil	0.024	Brazil	0.027
7	Germany	0.017	Canada	0.025	Germany	0.017	Canada	0.025
8	UK	0.015	Japan	0.024	Mexico	0.015	Japan	0.023
9	Mexico	0.015	Germany	0.022	UK	0.014	Germany	0.022
10	France	0.014	France	0.020	France	0.013	France	0.020
11	Italy	0.011	Italy	0.015	Italy	0.011	Italy	0.015
12	Canada	0.009	Mexico	0.012	Canada	0.009	Mexico	0.011
13	South Africa	0.007	South Africa	0.007	South Africa	0.007	South Africa	0.007

actors that have the same ranking in WG and CINC-based hierarchy. Brazil, France and Italy maintain the same positions during the five years in both evaluations. Meanwhile, there is the actor that sightly changes position from 4th to 5th place – Russia.

The reason why China's status is declined in WG lies in a proxy of political competence. According to Scimago Journal Rank, China is the second country after the United States

Ranking	State/CINC 2016		State/WG 2016	
1	China	0.231	USA	0.168
2	USA	0.133	UK	0.120
3	India	0.087	China	0.108
4	Russia	0.036	India	0.072
5	Japan	0.033	Russia	0.051
6	Brazil	0.023	Brazil	0.027
7	Germany	0.017	Canada	0.024
8	Mexico	0.015	Germany	0.024
9	UK	0.013	Japan	0.022
10	France	0.013	France	0.020
11	Italy	0.011	Italy	0.014
12	Canada	0.008	Mexico	0.011
13	South Africa	0.007	South Africa	0.007

Table 4.3

CINC and WG Comparison

regarding all subject category documents (Scimago Journal Ranking, 2023). However, the ranking of China is pretty low in terms of documents released in the field of political science. In terms of amount, in 2016, China was the 12th state to release political science and international relations documents. Countries like Italy, Canada, Spain, Netherlands had higher positions (Scimago Journal Ranking, 2023). Nevertheless, it has to be mentioned that progress in this particular field continues, and in 2022, China was in 6th place (Scimago Journal Ranking, 2023). Because of the constant changes, if the Chinese progressive pattern continues, it will be necessary to conduct the same type of comparison later and contrast CINC results with WG measures and new outcomes with the old ones as well.

The GMEC Results and Comparative Analysis

The results of the GMEC were as intriguing and surprising as the WG outcomes. As Table 5 shows, there is a significant change in the ranking hierarchy of the G8+5 states.

Ranking	State/CINC 2012		State/GMEC 2012		State/CINC 2013		State/GMEC 2013	
				Table 5[7]				
				CINC and GMEC Comparison				
1	China	0.220	USA	1.027	China	0.228	USA	1.038
2	USA	0.139	Japan	0.621	USA	0.133	Japan	0.506
3	India	0.081	Germany	0.440	India	0.081	Germany	0.455
4	Russia	0.040	UK	0.380	Russia	0.039	UK	0.381
5	Japan	0.035	France	0.370	Japan	0.035	France	0.379
6	Brazil	0.025	Canada	0.347	Brazil	0.025	Canada	0.342
7	Germany	0.018	Italy	0.303	Germany	0.017	Italy	0.302
8	UK	0.015	China	0.259	Mexico	0.015	China	0.284
9	Mexico	0.015	Russia	0.207	UK	0.015	Russia	0.210
10	France	0.014	Brazil	0.195	France	0.014	Brazil	0.191
11	Italy	0.013	Mexico	0.125	Italy	0.012	Mexico	0.129
12	Canada	0.009	South Africa	0.066	Canada	0.009	South Africa	0.060
13	South Africa	0.007	India	0.057	South Africa	0.007	India	0.057

In 2012 and 2013, two powerful Asian economies, China and India, stepped down from 1st to 8th and 3rd to 13th places. Meanwhile, Japan advanced and took 2nd place based on GMEC calculation.

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[7] Calculation of Gemotric Mean of Economic Capability (GMEC) was based on data acquired from World Bank

Ranking	State/CINC 2014		State/GMEC 2014		State/CINC 2015		State/GMEC 2015	
			Table 5.1 CINC and GMEC Comparison					
1	China	0.220	USA	1.055	China	0.228	USA	1.164
2	USA	0.139	Japan	0.466	USA	0.133	Japan	0.451
3	India	0.081	Germany	0.464	India	0.081	Germany	0.426
4	Russia	0.040	UK	0.410	Russia	0.039	UK	0.416
5	Japan	0.035	France	0.377	Japan	0.035	France	0.342
6	Brazil	0.025	Canada	0.326	Brazil	0.025	China	0.341
7	Germany	0.018	China	0.304	Germany	0.017	Canada	0.299
8	UK	0.015	Italy	0.297	Mexico	0.015	Italy	0.270
9	Mexico	0.015	Brazil	0.185	UK	0.015	Brazil	0.144
10	France	0.014	Russia	0.183	France	0.014	Russia	0.129
11	Italy	0.013	Mexico	0.130	Italy	0.012	Mexico	0.122
12	Canada	0.009	India	0.061	Canada	0.009	India	0.066
13	South Africa	0.007	South Africa	0.055	South Africa	0.007	South Africa	0.053

In the case of China, the radical difference shrunk slowly in 2014, 2015 (Table 5.1) and 2016 (Table 5.2). The exciting part of GMEC is that even if the comparison is conducted with the WG outcomes according to tables 4, 4.1 and 4.2, the gap among results is pretty significant. The calculation based on Waltz's guideline puts China and India in 3rd and 4th places. Thus, there is no similarity between the rankings of WG and the GMEC, as well as with CINC and GMEC.

		Table 5.2		
		CINC and GMEC Comparison		
Ranking	State/CINC 2016		State/GMEC 2016	
1	China	0.231	USA	1.178
2	USA	0.133	Japan	0.502
3	India	0.087	Germany	0.433
4	Russia	0.036	UK	0.377
5	Japan	0.033	France	0.343
6	Brazil	0.023	China	0.341
7	Germany	0.017	Canada	0.288
8	Mexico	0.015	Italy	0.273
9	UK	0.013	Brazil	0.142
10	France	0.013	Russia	0.120
11	Italy	0.011	Mexico	0.111
12	Canada	0.008	India	0.071
13	South Africa	0.007	South Africa	0.049

If, in the previous case, the reason for contrast was the proxy of political competence, in this one, GDP per capita is the indicator we have to blame. The geometric mean of the state-to-world GDP and GDP per capita ratio demonstrated that despite the colossal power of specific Asian actors, their economic and social performance is still not as sophisticated as in particular countries. The indicators such as population and energy consumption play a significant role, and these indicators are one of the main determinants of why China and India are in the top 3 and top 5 lists in the CINC and WG outcomes. However, a massive population sometimes means less GDP per capita, which creates the case when a general socioeconomic image of one of the most prominent economies becomes less significant than other great powers.

The GMMC Results and Comparative Analysis

The results of GMMC were surprising as well. As in previous cases, in this comparison, the hierarchy of the states is pretty different compared with CINC results. The US is on top. China in 2012 had 4th rank and later became the third. India had a substantial step-down and, from third place, moved to tenth. However, there are some coincidences. As Table 6 demonstrates, in 2013, China became the 3rd in the ranking. Even though it is two-step down compared with CINC, it has the same position in the WG results. In fact, the top three countries are the same in the GMMC and the WG results from 2013 to 2016.

Table 6[8]								
CINC and GMMC Comparison								
Ranking	**State/CINC 2012**		**State/GMMC 2012**		**State/CINC 2013**		**State/GMMC 2013**	
1	China	0.220	USA	1.99	China	0.228	USA	1.87
2	USA	0.139	UK	0.46	USA	0.133	UK	0.45
3	India	0.081	Germany	0.30	India	0.081	China	0.30
4	Russia	0.040	China	0.28	Russia	0.039	Germany	0.29
5	Japan	0.035	Japan	0.26	Japan	0.035	Japan	0.26
6	Brazil	0.025	France	0.25	Brazil	0.025	France	0.25
7	Germany	0.018	Canada	0.21	Germany	0.017	Canada	0.19
8	UK	0.015	Russia	0.15	Mexico	0.015	Russia	0.16
9	Mexico	0.015	Italy	0.14	UK	0.015	Italy	0.13
10	France	0.014	India	0.09	France	0.014	India	0.09
11	Italy	0.013	Brazil	0.07	Italy	0.012	Brazil	0.07
12	Canada	0.009	South Africa	0.04	Canada	0.009	South Africa	0.04
13	South Africa	0.007	Mexico	0.03	South Africa	0.007	Mexico	0.03

There is a significant difference between GMEC and GMMC too. Intriguingly, China has a lower rank in GMEC (Table 5, 5.1, 5.2); however, in terms of the geometric mean of military capability, the position is higher, and progress is evident through the years.

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[8] Calculation of Gemotric Mean of Military Capability (GMMC) was based on data acquired from SIPRI

Ranking	State/CINC 2014		State/GMMC 2014		State/CINC 2015		State/GMMC 2015	
<table>
<tr><td colspan="9" align="center">Table 6.1

CINC and GMMC Comparison</td></tr>
<tr><td>Ranking</td><td colspan="2">State/CINC 2014</td><td colspan="2">State/GMMC 2014</td><td colspan="2">State/CINC 2015</td><td colspan="2">State/GMMC 2015</td></tr>
<tr><td>1</td><td>China</td><td>0.220</td><td>USA</td><td>1.81</td><td>China</td><td>0.228</td><td>USA</td><td>1.79</td></tr>
<tr><td>2</td><td>USA</td><td>0.139</td><td>UK</td><td>0.46</td><td>USA</td><td>0.133</td><td>UK</td><td>0.44</td></tr>
<tr><td>3</td><td>India</td><td>0.081</td><td>China</td><td>0.33</td><td>India</td><td>0.081</td><td>China</td><td>0.36</td></tr>
<tr><td>4</td><td>Russia</td><td>0.040</td><td>Germany</td><td>0.30</td><td>Russia</td><td>0.039</td><td>Germany</td><td>0.30</td></tr>
<tr><td>5</td><td>Japan</td><td>0.035</td><td>Japan</td><td>0.26</td><td>Japan</td><td>0.035</td><td>France</td><td>0.27</td></tr>
<tr><td>6</td><td>Brazil</td><td>0.025</td><td>France</td><td>0.26</td><td>Brazil</td><td>0.025</td><td>Japan</td><td>0.27</td></tr>
<tr><td>7</td><td>Germany</td><td>0.018</td><td>Canada</td><td>0.19</td><td>Germany</td><td>0.017</td><td>Canada</td><td>0.23</td></tr>
<tr><td>8</td><td>UK</td><td>0.015</td><td>Russia</td><td>0.17</td><td>Mexico</td><td>0.015</td><td>Russia</td><td>0.17</td></tr>
<tr><td>9</td><td>Mexico</td><td>0.015</td><td>Italy</td><td>0.12</td><td>UK</td><td>0.015</td><td>Italy</td><td>0.12</td></tr>
<tr><td>10</td><td>France</td><td>0.014</td><td>India</td><td>0.10</td><td>France</td><td>0.014</td><td>India</td><td>0.10</td></tr>
<tr><td>11</td><td>Italy</td><td>0.013</td><td>Brazil</td><td>0.07</td><td>Italy</td><td>0.012</td><td>Brazil</td><td>0.07</td></tr>
<tr><td>12</td><td>Canada</td><td>0.009</td><td>South Africa</td><td>0.04</td><td>Canada</td><td>0.009</td><td>South Africa</td><td>0.04</td></tr>
<tr><td>13</td><td>South Africa</td><td>0.007</td><td>Mexico</td><td>0.03</td><td>South Africa</td><td>0.007</td><td>Mexico</td><td>0.03</td></tr>
</table>

In the list of G8+5, there are only four counties with more than a million military personnel. The two states out of the four, China and India, have more than two million militaries. Despite the large army of China, Beijin's overall score in GMMC is pretty higher. The reason lies in Military expanses that are so huge that it balances the amount of military personnel and military expenditure per military personnel becomes a higher number. This is the significant difference between China and India.

Table 6.2 CINC and GMMC Comparison				
Ranking	State/CINC 2016		State/GMMC 2016	
1	China	0.231	USA	1.78
2	USA	0.133	UK	0.44
3	India	0.087	China	0.39
4	Russia	0.036	Germany	0.31
5	Japan	0.033	France	0.28
6	Brazil	0.023	Japan	0.26
7	Germany	0.017	Canada	0.23
8	Mexico	0.015	Russia	0.18
9	UK	0.013	Italy	0.13
10	France	0.013	India	0.11
11	Italy	0.011	Brazil	0.07
12	Canada	0.008	South Africa	0.04
13	South Africa	0.007	Mexico	0.03

A significant feature of China can be demonstrated by comparing GMEC and GMMC. In the former's ranking, China slowly developed ranking from 8th place to 6th. Progress is evident, however, in the GMMC ranking, China has the higher position. This fact can be explained in two ways: 1) The position in the geometric mean of economic capability is lower because of a vast population. 2) The higher place in the hierarchy of geometric mean of military capability is derived from the second largest military expenditure.

Finally, a general but exciting fact in the GMMC ranking is that in 2012, 2013 and 2014, three were nuclear powers among the top five states. In 2015, the ranking was changed, and France replaced Japan. The same pattern was continued in 2016, and four actors out of five were nuclear states.

Conclusion

It has been clear that the hypothesis in all comparisons turned out to be wrong. But does it mean that the formulas were inaccurate? Hardly the answer could be yes. Despite no coincidence among the different calculations, the research was not done in vain. There is little but an exciting pattern. In all rankings except the CINC, the top state is the United States. And even in

exception, the US holds the second place. This fact can be a pretty solid argument for the primacist[9] scholars who still advocate the unchallengeable power of the United States.

However, another striking pattern exists from the perspective of measuring power via control over resources. Even though China has a lower ranking than the US in WG, GMEC and GMMC, it still is a progressive power, and in most cases, development is irreversible.

One actor that hasn't been mentioned revealed an exciting position between the first and the third ranks. It is the United Kingdom. Although its position differs in CINC and GMEC in evaluations in WG and GMMC, the UK has the second rank. This fact may hint that the United Kingdom shouldn't be underestimated from a particular perspective.

Finally, the work can be criticized because the initial hypothesis was rejected. Nevertheless, research revealed interesting results that can be interpreted in infinite ways. When Thomas Edison failed in numerous times to refine a light bulb, he mentioned that he didn't fail ten thousand times but found ten thousand ways that didn't work. In this case, I would say that this article didn't fail but demonstrated three methods of measuring states' power with mostly contrasting outcomes.

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[9] Author Nuno P. Monteiro, in his Book "Theory of Unipolar Politics", describes two types of scholars: 1) Declinists and 2) Primacists. The former group includes the ones who argue that the power of the United States is declining or has already declined. Thus, there is no Unipolarity anymore. The latter argue that despite changes in world politics, the US is still the unrivalled superpower and has no peer competitor (Monteiro, 2014).

1. **Bibliography**

Allison, G. (2017). *Destined for War: Can America and China Escape Thucydides's Trap?*
Boston: Houghton Miffin Harcourt.

Beckley, M. (2018). The Power of Nations. *International Security*, 7-44.

Beckley, M. (2018). *Unrivaled: Why America Will Remain the World's Sole Superpower.*
Ithaca : Cornell University Press.

CIA. (2023, February 7). *The World Factbook - Bangladesh*. Retrieved from cia.gov:
https://www.cia.gov/the-world-factbook/countries/bangladesh/#people-and-society

CIA. (2023, February 7). *The World Factbook - Luxembourg*. Retrieved from cia.gov:
https://www.cia.gov/the-world-factbook/countries/luxembourg/#people-and-society

Dahl, R. (1957). The concept of power. *Behavioral Science*, 201–215.

Evera, S. V. (1997). *Guide to Methods for Students of Political Science.* Ithaca: Cornell
University Press.

Hart, J. (1976). Three Approaches to the Measurement of Power in International Relations.
International Organization, 289-305.

Healy, B., & Stein, A. (1973). The Balance of Power in International History: Theory and
Reality. *The Journal of Conflict Resolution*, 33-61.

Karabell, Z. (2014). *The Leading Indicators: A Short History of the Numbers That Rule Our
World* . Simon & Schuster.

Keersmaeker, G. D. (2017). *Polarity, Balance of Power and International Relations Theory.*
Cham: Palgrave Macmillan.

Kennedy, P. M. (1987). *The Rise and Fall of the Great Powers: Economic Change and
Military Conflict from 1500 to 2000.* New York: Random House.

Kissinger, H. (1994). *Diplomacy.* New York: Simon & Schuster Paperbacks.

Lowy Institute. (2023). *Lowy Institute: Asia Power Index: Military Capability*. Retrieved from lowyinstitute.org: https://power.lowyinstitute.org/explore/military-capability/

Mearsheimer, J. J. (2001). *The Tragedy of Great Power Politics*. New York: W.W. Norton & Company.

Monteiro, N. P. (2014). *Theory of Unipolar Politics*. New York: Cambridge University Press.

Nogee, J. L., & Spanier, J. W. (1977). The Politics of Tripolarity. *World Affairs*, 319-333.

Nye, J. S. (1990). The Changing Nature of World Power. *Political Science Quarterly*, 177-192.

Nye, J. S. (2011). *The Future of Power*. New York: PublicAffairs.

Rachman, G. (2017). *Easternization: war and peace in the asian century*. New York: Other Press.

Rich, N. (2003). *Great Power Diplomacy Since 1914*. New York: McGraw-Hill.

Scimago Journal Ranking. (2023, May 30). *Scimago Journal & Country Rank*. Retrieved from scimagojr.com: https://www.scimagojr.com/countryrank.php?year=2022

Scimago Journal Ranking. (2023, May 30). *Scimago Journal & Country Rank*. Retrieved from scimagojr.com: https://www.scimagojr.com/countryrank.php?year=2016&category=3320

Scimago Journal Ranking. (2023, May 30). *Scimago Journal & Country Rank*. Retrieved from scimagojr.com: https://www.scimagojr.com/countryrank.php?category=3320&year=2022

Singer, D. J., & Small, M. (1966). The Composition and Status Ordering of the International System: 1815-1940. *World Politics*, 236-82.

Singer, J. D., Bremer, S., & Stuckey, J. (1972). Capability Distribution, Uncertainty, and Major Power War, 1820-1965. In B. Russett, *Peace, War, and Numbers* (pp. 19-48). Beverly Hills: Sage.

Subramanian, A. (2011). *Eclipse: Living in the Shadow of China's Economic Dominance.* Peterson Institute for International Economics.

Tellis, A. J., Bially, J., Layne, C., & McPherson, M. (2000). *Measuring National Power in the Postindustrial Age.* Santa Monica: RAND Corporation.

Waltz, K. N. (1979). *Theory of International Politics.* London: Addison-Wesley Publishing Company.

Wendt, A. (1999). *Social Theory of International Politics.* Cambridge: Cambridge University Press .

World Bank. (2023). *GDP (current US$) - Bangladesh*. Retrieved from worldbank.org: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=BD

World Bank. (2023). *GDP (current US$) - Luxembourg*. Retrieved from worldbank.org: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=LU

World Bank. (2023). *GDP per capita (constant 2015 US$) - Bangladesh, Luxembourg*. Retrieved from worldbank.org: https://data.worldbank.org/indicator/NY.GDP.PCAP.KD?locations=BD-LU

Xuetong, Y. (2011, December 30). *From a Unipolar to a Bipolar Superpower System: The Future of the Global Power Dynamic.* Retrieved from https://carnegieendowment.org: https://carnegieendowment.org/2011/12/30/from-unipolar-to-bipolar-superpower-system-future-of-global-power-dynamic-pub-47688

Zakaria, F. (2011). *The Post-American World: Release 2.0.* New York: W.W. Norton.

European Best Practices in
Dual Higher Education (DHE)

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Abstract: This article describes dual higher education (DHE) programs at universities in different European countries. The report was prepared within the EU funded CBHE framework of the DUGEOR project. The main goal of the project is to improve the competence of graduates of higher education and their employment in Georgia, taking into account the best practices of EU countries.

This article includes the results of an analysis of 15 dual higher education programs implemented by different universities in 3 countries (Austria, Germany, Spain, and Serbia) in different industrial sectors. In addition, we also reviewed the newly established DHE model in Serbia without in-depth analyses of the Serbian DHE programs. The report also implies the concept of DHE and general approaches to dual education in education policy. The report ends with a summary and conclusions that may be useful in the next stage of developing a dual higher education model in Georgia.

Key Words: Dual higher education, master, bachelor, apprentice, university, practice, work-related, work integrated, work-based, learning

2. **Dual education in the educational system of European higher education institutions**

The higher education system around the world has been changing dramatically in recent decades as a result of the impact of information technology. Rapid dissemination of information ensures social, technological or cultural access to knowledge.

If even in the previous century, the greatest importance was attached to the theoretical knowledge obtained in libraries and university spaces, today, an in-depth knowledge of fundamental works has been replaced by the information shared on the Internet, which, unlike the bachelors and masters from the previous century, nowadays are available to almost all interested people, regardless of their basic knowledge and age characteristics.

As a result of this circumstance, today in Georgia, as well as around the world, the demand for fundamental knowledge is somewhat reduced and emphasis is placed on the skills and universality of applying knowledge in practice. Of course, the acquisition of theoretical knowledge and the application of knowledge in practice has its own place in the university education system. However, the difference between the previous and current study models are based on the fact that the theoretical knowledge can be obtained relatively easily, while professional habits and constantly changing requirements related to work as well as developing adequate skills are much more valuable.

Thus, the modern and growing trend of obtaining knowledge in the coming decades will be the model of education where the student will be provided with basic theoretical knowledge and the professional skills that the modern labor market presents to the employee.

Historically, academic degrees have been directly linked to the initiation of a student (apprentice) into a higher level craftsman. A bachelor, from the French *bachelier* (eleventh century), meant a young man, an assistant to a master or craftsman (Wedgwood 1859), while a master or craftsman, also from the old French word *maistre*, was used to denote a person eminently and thoroughly skilled in some field (Harper 2023). The hierarchy of professional ranks in Georgia consisted of three-levels: master, prentice and apprentice. The master, as a teacher, would teach his craft experience to the apprentice, who after some time would start working as prentice, i.e. partially independent work, whereas after apprenticeship, he would be approved by the master and receive a set of workshop tools from him, and after that he would

be considered as a fully fledged master. The oldest data on the master-apprentice relationship dates back to the 6th century. According to Iv. Javakhishvili, ancient Georgian manuscript - "Martviloba of Eustathius Mtskheteli" (VI century) denotes a crafts union in Georgia as "workman's elder", "craftsmen's boss" and "superior", which were responsible for various actions towards "doers", i.e. "workers" (არჩვაძე, ბოკუჩავა და გელაძე 2011). Since the 19th century, a union of artisans named "Amkari" took hold, although it preserved the centuries-old tradition of passing knowledge from the master to the apprentice.

According to the researchers, the abundance of Georgian sources and data related to the Amkari unions, constitutes an important document which proves that the Amkari originated in Georgia and reached their powerful development in the 10th-11th centuries (გუგუშვილი 1975), (მესხია 1983).

Unfortunately, in the twentieth century, the ugly forms of economic and labor relations in Soviet Georgia weakened these traditions and they were forgotten, which did not happen in the civilized world, where the academic and professional education were developed side by side.

Based on the literature analysis, in which the integration of work-based learning methods in the higher education model of different countries is investigated, the following approaches can be outlined:

Work-Related Learning (WRL): It is a method in which learning takes place in close connection with the work environment through formal trainings (after work) or informal methods (on-the-job environment). According to study (Ferreira, Künn-Nelen and De Grip 2016), which analyzed the extent to which work-related learning is related to the development of employees' skills in 28 European countries, it was found that WRL uses two approaches: formal training and informal learning.

Various empirical studies have confirmed that individuals who participate in formal training or are involved in informal learning show higher skill improvement. It is also interesting that the relationship between informal learning and the development of work skills is stronger compared to participation in formal training. Nevertheless, these two forms of work-related learning are complementary. This complementarity further contributes to skill development, as observation

shows that staff who participate in both training and informal learning show significant incremental improvements in their skills (Cunha and Heckman 2007).

Work-Based Learning (WBL): An educational strategy that provides students with a real-world work environment where they can apply academic and technical skills and improve their employability (cte.ed.gov 2020). Work-based learning refers to all forms of learning that takes place in a real work environment. It provides individuals with the skills needed to successfully obtain and keep jobs and progress in their professional development. Apprenticeships, internships/traineeships and on-the-job training are the most common types of work-based learning. These types usually – but not always – combine elements of learning in the workplace with classroom-based learning (Inter-agency Group on Technical and Vocational Education and Training 2017).

Work-based learning refers to learning that occurs when people do real work. This work can be paid or unpaid, but it is the real work that leads to the production of real goods and services. Some enterprises, particularly large ones, have their own training classrooms or workshops, and employees take time away from work to attend training sessions in them (ETF 2014).

Work-Integrated Learning (WIL): Training programs in this model connect university students with a workplace that is relevant to their field of study. This kind of professional HE (PHE) aims to combine a relevant field of academic study with work practice through a specific programme.

Work-integrated learning gives students the opportunity to apply knowledge gained from academic studies to relevant work and transform work experience into knowledge (Cooper, Orrell and Bowden 2010). Although work-integrated learning shares the same approaches as work-based learning (WBL), it differs in that WIL is part of the curriculum and guided by learning objectives, whereas WBL focuses on the workplace and is not linked to academic research and teaching (Cooper, Orrell and Bowden 2010). The WIL approach includes apprenticeships, field experiences, mandatory professional practice, cooperative education, internships, participation in applied research projects, and service oriented learning (Turcotte, Nichols and Philipps 2016). Work-integrated learning can have many names depending on the context. For example, WIL programs in healthcare are known as clinical placements, while in other fields they may be referred to as practicums, industry projects or simulations (if carried

out at a university or in virtual reality) (Atkinson 2021). The WIL system is effective in that it not only improves the student's career, academic and other personal skills, but also has additional benefits for employers and academic institutions (Zegwaard 2014). The system is an effective tool for graduate employment. Students who participate in WIL are more employable and better able to navigate the job search and transition of university knowledge into full-time employment (Jackson 2015).

In many countries, educational policy makers realize that for the effective functioning of the labor market, its intellectualization and the increase of innovative capabilities, it is necessary to strengthen the alliance of knowledge between academic organizations, industrial enterprises and other professional associations that define professional standards. The rapidly changing business and technological environment forces education providers to regularly update engineering curricula (Mahler, და სხვ. 2019). Work-based, work-related or work-integrated learning at the higher education level is emerging as a profitable model of cooperation between higher education institutions and industry. Higher education institutions have the opportunity to take advantage of the current challenges and create flexible curricula based on a theoretical and practical model of teaching, which are focused on meeting the demands of the labor market by developing relevant skills for students (Davey and Orazbayeva 2017). Such an approach is very effective in higher education programs in engineering and applied sciences, although it can be equally useful in other areas such as business and management, law and education. On the other hand, companies and entrepreneurs involved in the higher education process benefit from the involvement of students in their work tasks. Work-based learning helps companies overcome the shortage of skilled workers, improve the quality of the workforce, simplify the recruitment process and save costs. By partnering with higher education institutions, companies can influence the curriculum by adding the knowledge and skills they want.

Following the work-based learning approaches we have outlined above, there are several forms of incorporating work experience into higher education curricula, including internships, apprenticeships, practicum courses, etc. However, ensuring the highest level of incorporation of real-world work experience into education is achieved through dual-model training programs. There are two models of dual education - model of professional education and model of professional higher education. The first one is already implemented in Georgia, and the latter is a hybrid form of higher education, which offers the participant the opportunity to complete a

bachelor's/master's program at a higher educational institution and simultaneously receive a certificate of practical professional training or work experience in a company (Davey ღა Orazbayeva 2017).

Dual education is fundamentally different from the "part-time" study or work model, where the type of work and the study program may differ from each other. A crucial feature of dual education is that professional internships are an integral part of training programs (Zrnic ღა Miskovic 2017) (Davey ღა Orazbayeva 2017) (Nickel, Higher ღა Area 2021). Studying on a dual program means that students enroll and sign a contract, which allows them to study in two different places - the university and the company. Dual education considers the company as a student's learning environment together with the university. In this way, three parties are integrated into the system of dual higher education: student-higher institution-company.
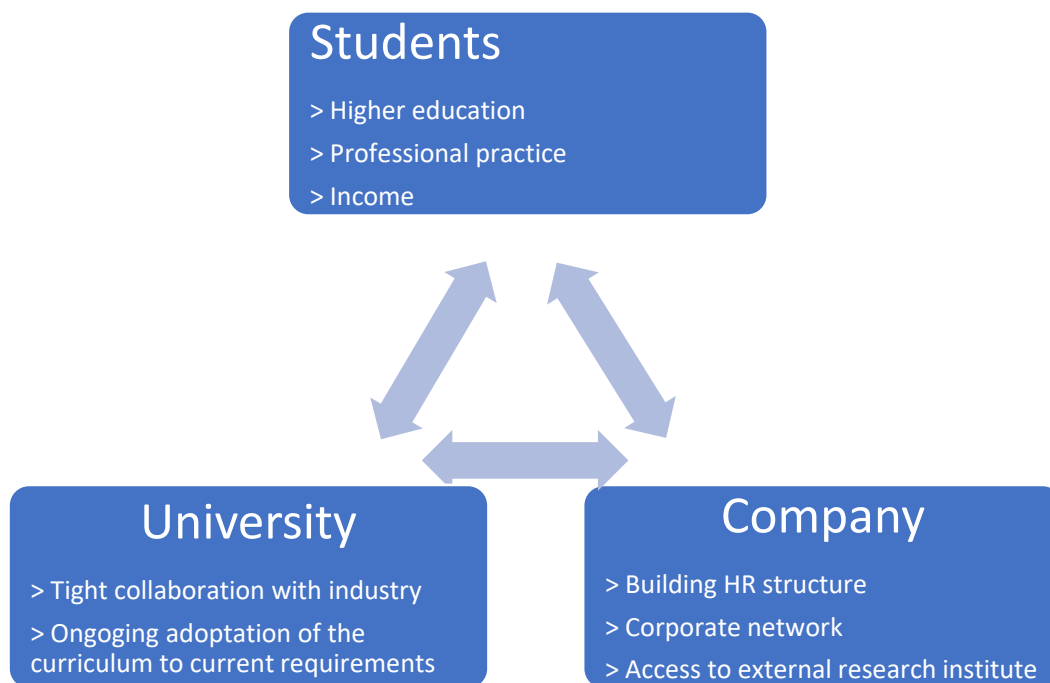
Figure 1. Characterization of Study programmes in Austria EQF 6-7. Graz: FH Joanneum. Source: (Hochrinner 2020)

This relationship, in its turn, is consistent with the requirements of both higher education and labor legislation. In addition to the flexible response to market demands, the dual education model also has a social impact, within which students with low socio-economic opportunities

receive significant benefits as a result of conducting study and work together, which allows them to at least partially solve the problem of financing of the tuition fees.

Currently, dual higher education (DHE) training programs are an important educational direction in German-speaking countries (Graf 2013). For most other European countries, dual education is mainly implemented at the secondary, but not at the higher education level (Zrnic ოა Miskovic 2017). However, the need for dual education at the higher level led to the development of relevant legal regulations and the development of dual study programs at the university level in a number of European countries. Accordingly, this situation puts the issue of quality assurance of dual training programs on the agenda, depending on their specificity.

The concept of dual education is not new. It started at the beginning of the 20th century at the University of Cincinnati, USA, which introduced a dual program for mechanical engineering students in a machine tool factory, and later spread to English-speaking countries. The first and most famous dual education system in Europe was developed in Germany when they established the Cooperative State University of Baden-Württemberg (German: Duale Hochschule Baden-Württemberg, DHBW) in 1974, which is the successor of the Vocational Academy (Berufsakademie) of the federal unit of Baden-Württemberg (Zrnic ოა Miskovic 2017).

3. **Comparative characterization of dual vocational and dual higher education models**

Dual vocational and dual higher education models differ mainly in their focus, level of specialization and outcomes. The table shows the characteristics of these two models.

	Dual vocational education:	Dual higher education:
Focus	Focuses on providing students with specific skills and practical knowledge necessary for a particular profession. This model emphasizes hands-on training and	Aims to provide a broader and more comprehensive education including various disciplines, related to the core subject. Emphasis is placed on the practical application of theoretical knowledge, critical thinking,

	prepares students for immediate transition into the workforce.	management and research skills. Students are qualified for immediate start in respective job positions.
Level of specialization:	Dual vocational programs are highly specialized and train students in specific occupations such as auto mechanics, culinary arts, electrical work, nursing, information technology, etc.	In Dual higher education programs, the disciplines and fields of study offer a holistic approach to a relevant professional field. Learning takes place in parallel mode: theoretical learning is complemented by practice learning. Students receive systematic knowledge of the chosen study course but also learn and apply transversal skills, e.g. project management or quality assurance.
duration and outcomes:	Vocational education programs can vary in length, but are generally shorter than traditional higher education programs. They usually range from a few months to a few years, depending on the specialty. Vocational education programs are designed to provide students with the skills and knowledge needed to directly enter specific occupations. Their aim is to meet	Dual Bachelor's programs are three to four years long, where almost equal time is allocated to studying theoretical subjects and developing practical skills. Graduates often go on straight to professional careers. Some study at a higher academic level in their field. A graduate of the Dual higher education program quickly adapts to the labor market and is highly employable. Students have

	the immediate needs of the job market and as a result, graduates are quickly employed.	the in-depth knowledge of a study subject as well as relevant skills to combine it with experiences from practice. Together with the transversal skills trained and adopted in academic and work environments graduates are enabled to manage real life challenges in their jobs.

It is important to note that these differences are not absolute and there may be some overlap between vocational and higher education. In some cases, the vocational education model may offer students to complete their knowledge and profession through higher education, and on the contrary, some higher education institutions may include professional or practical components. The specific structure and characteristics of dual higher education models may vary between countries and educational institutions.

4. **Dual Higher Education**

Dual higher education combines students' academic learning with work experience in enterprises/industry and can be used to achieve different goals such as (ETF 2014):

- development of professional skills that contribute to obtaining a recognized professional qualification;
- Development of work habits and job-readiness;
- Student's understanding of job requirements and making the right choice when planning their own career;
- Giving the students of low social status access to opportunities to work that they might
- not have otherwise

- In the process of creating the concept of dual higher education, the main key issue for policy makers is to develop a program and goals that ensure that the best interests of the parties involved in the implementation of the program are met. The dual higher education model combines the efforts of three main stakeholders - a three-way partnership between the student, the higher education institution and the company.

- The terms of cooperation are usually established by specific agreements between the company and higher education institutions, which define:

- Number of students accepted by the company (in different countries, taking into account the economic situation, the labor market and other circumstances, this number is different. For example, in Austria, one company receives 1-5 students, while the number of students employed by a German company may be from 10 to 60),

- Remuneration conditions (will students work for free or receive a salary),

- Number of hours spent in the company per semester (as a rule, the number of hours is transformed into study credits - if, for example, a student spends 200 hours in the company, which is 25 working days, he will be awarded 8 ECTS)

- Other rights and duties of the student, the company and the higher education institution.

- The work of the students in the company requires a supervisor, a mentor, who will guide the students in the company, give the necessary instructions for completing the tasks, and finally evaluate the activity performed by the student after the internship. As a rule, the mentor is selected from the company's internal resources. After completing the studies, the company is not obliged to employ the student in its production.

5. **Analysis of DHE programs in European countries - summary**

As can be seen from the examples of DHE programs implemented in European countries, the goals of dual higher education models are similar, although there are slight differences in structure and approaches, which in principle depend on the institutional and regulatory framework of the given country. For example, DHE programs in Austria are strictly regulated at the national level and therefore follow a uniform approach to program design and implementation (Austria), whereas in Germany the trend is much more flexible.

In all the countries we have studied, dual higher education programs are accredited by national accreditation agencies and are usually in line with the Bologna criteria, take into account the European Qualifications Framework (EQF) scheme, the requirements of bachelor's and master's levels and include the right to access the next educational level.

In all cases discussed, students receive remuneration for working in enterprises and In almost all cases, work is based on specific employment contracts.

In terms of partnerships with companies, there are significant differences in the size of the companies and the process of selecting students: in Austria, as a rule, the student chooses the company for further practical work (although the company's initiative to select students is not excluded), while in Germany, the company itself is the initiator of the selection and recruitment of students of the dual higher education program and the work practice.

As for teaching, it is a mixture of theory and practice. Studies begin with a theoretical semester followed by practical semesters. At the beginning of the study, the share of theoretical hours is greater compared to practical hours. In subsequent semesters, the volume of practice increases, and finally the ratio between theoretical and practical hours in undergraduate programs is on average 60/40, and in master's programs it is 50:50.

Students are evaluated by the staff of the higher education institution, guided by the report of the company representative (mentor). A student's internship report is usually supervised by a company representative, although it is also supervised by a university professor.

Among the 15 programs analyzed, the majority are technical DHE programs, although there are also DHE programs in management, business administration, education, and the health sector.

6. **Austria**

In Austria, universities of applied sciences play a leading role in the implementation of dual higher education programs, although other classical universities are also authorized to develop and implement dual education programs.

DHE programs in Austria are standardized within the educational framework. Most of the dual higher education programs are implemented in technical education programs and are in full

compliance with the Bologna regulations - the duration of the bachelor's studies is 6 semesters and includes 180 ECTS, while the master's programs last 4 semesters and include 120 credits. Graduates of dual higher education, like graduates of classical universities, have the right to continue their studies at master's or doctoral level (EuroEducation.net 2014).

Accreditation of the dual higher education program is regulated by law and carried out by the Austrian National Agency for Education Accreditation.

All programs are jointly developed by representatives of HEIs and partner companies. Higher education institutions have a leading role in the development and implementation of training programs, which is also reflected in the ratio of teachers of higher education institutions (60%) and persons involved in the program from companies (40%).

The companies participate not only in the development, revision and implementation of the curriculum, but are also involved in the mentoring of the student's final thesis (co-supervised with the higher education mentor).

HEIs have overall responsibility for conducting student assessments. However, the inclusion of partner companies in the assessment of students is related to the practical part of the educational program (working in companies), which is not strictly regulated. The mentor from the partner company usually shares a recommendation with the head appointed by the higher education institution regarding the evaluation of the students based on a standardized reporting form.

The relationship between partner companies and dual higher education students is governed by a direct employment contract in accordance with Austrian labor law. As a rule, these contracts are concluded on a part-time basis.

As for the educational process, during the first and second semesters, teaching takes place in the HEIs settings and the staff of the HEIs is involved in it. From the 3rd semester, partner companies are involved in the educational process, and the distribution of hours between higher education institutions and partner companies is 50/50 at the undergraduate level and 40/60 at the master's level, which means that the partner companies have even more responsibility for the education of students.

Staff involved in teaching must have at least 3 years of experience in the relevant industry and an academic degree equivalent to at least 300 ECTS credits.

The employment rate after graduation is very high, ranging from 90 to 100%, and the dropout rate is 15 to 30%.

7. **Germany**

A dual education curriculum in Germany combines academic studies with work training and experience. Due to their practical nature, dual higher education programs are quite popular in Germany. Practical experience is an essential component of dual higher education programs. If a student is enrolled in a dual education study program, he or she also signs an employment contract with the company. Accordingly, teaching/training is carried out in two places: at the higher educational institution and at the place of the employer. In Germany, the dual higher education programs offered by different higher education institutions are not unified. The design and structure of the program depends on the subject and specialization and the appropriate approach developed by the implementing higher education institution.

Dual higher education programs in Germany are based on the WRL, WBL, WIL approaches discussed above. All German higher education institutions can offer programs at the bachelor's and master's level. Dual higher education programs are available not only in technical disciplines such as engineering, but also in areas such as management, business administration and the health sector.

All dual higher education programs comply with the Bologna criteria, but are not unified (6 or 7 semesters for bachelor programs (180 to 210 ECTS)) and 4 semesters for master programs (60 to 120 ECTS). Graduates of dual higher education programs have the right to continue their studies at the master's and doctoral level. Some technical training programs are aligned and combined with professional education programs. In this case, graduates receive the corresponding degree and specialty of higher education and professional education.

Accreditation is regulated by law and is carried out by the National Accreditation Agency. All programs are jointly developed by representatives of HEIs and partner companies. Higher education institutions have a leadership role in the development and implementation of programs, which is also reflected in the share of teachers involved in the educational process between HEIs (60%) and partner companies (40%), including some variations. In addition to

teaching and curriculum development/revision, industry partners are also involved in mentoring the student's final thesis (along with the university mentor).

The higher education institution is responsible for the assessment of students. The partner company is also involved in the part of the evaluation that covers the practical side of education, although this part is not unified in terms of a single structure or format.

Regarding the employment contracts, some companies sign a direct contract with the student of dual higher education, however, it is also common practice when the higher education institution and the partner company operate within the framework of the contract, and the terms of the employment contract with the students are determined by the Higher Education Institution and not by the partner company.

The first two semesters after the beginning of the educational process are held in a higher educational institution. From the 3rd semester, the educational process is distributed between higher education institutions and partner companies in an approximate 50/50 ratio at the bachelor's level. As for master's programs, the partner companies have even more responsibility in the education of students, and this ratio is 40/60 in favor of the companies.

The personnel involved in the DHE programs must have experience in the relevant production process and possess a relevant academic degree.

Employment rates after university graduation are very high, ranging from 80 to 90%, and dropout rates from 5 to 20%.

8. **Spain**

Similar to Austria and Germany, dual higher education programs in Spain are implemented by different types of private and public higher education institutions. The design of the program depends on the discipline, the future profession and the approach chosen by the respective higher education institutions. Dual higher education programs are offered in fields such as engineering, education or business studies.

The curricula of the programs are built in the format of WRL, WBL, WIL models. Bachelor's and Master's dual higher education programs comply with the Bologna model (8 semesters for

undergraduate (240 ECTS)) and 2-4 semesters for master's programs (60 to 120 ECTS). Dual higher education programs are not unified. All graduates of the dual higher education program have the right to continue their studies at the next level of education - master's and doctorate degree.

Development of dual higher education programs is implemented jointly by representatives of universities and partner companies. Partner companies are also responsible for developing a set of competencies for the practical part of the training process.

The leading role in the implementation process is assigned to the relevant higher educational institution. In the distribution of shares of teachers involved in the educational process, you can find different ratios from 50/50 to 75/25 between HEIs and the partner company, respectively.

Labor relations are regulated either directly by a contract signed between the student and the company, or by an agreement signed between the university and the company. There is no special standardized work contract for students in dual higher programs (although there is one for students of vocational programs defined by the state). Nevertheless, the general framework of the agreement is as follows: a cooperation agreement is signed between the university, the company and the student, which defines the rights and obligations of the partners.

Accreditation of dual higher education programs is regulated by law and carried out by an accreditation agency.

As for the staff involved in the dual higher education process, in contrast to Germany and Austria, no special requirements were identified.

Data on employment rates are not available for all programs (some are newly introduced), but available data show that post-graduation employment rates are very high for dual degree programs (80-100%), while dropout rates range from 20-36%.

9. **Serbia**

Dual higher education in Serbia is at the initial stage of development. Although there is a long tradition of work-based learning in Serbia at the level of secondary vocational education, a legislative act regulating this area was adopted only in 2017 (Serbian dual education law 2017).

As for higher education, the Law on Higher Education of the Republic of Serbia since 2017 envisages ways of institutionalizing cooperation between companies and higher education institutions, which promotes work-based learning. Accreditation standards in Serbia include mandatory internships in all professional training programs. The final institutionalization of the dual study model in higher education in Serbia took place in 2019 (Zakon o dualnom modelu studija u visokom obrazovanju 2019). Accordingly, the accreditation standards of study programs were updated and the first dual-model study programs were accredited in 2021, mainly in the direction of applied sciences. In the process of developing a dual education program, higher education institutions often faced difficulties as it was challenging to find companies that had the ability and willingness to accept students for work-based learning. At the initial stage, the need to unify the regulatory documentations necessary for students' involvement in work processes were also identified (contracts, study agreements, monitoring procedures, payment negotiations, work safety procedures, etc.). The enactment of the law on dual study model in higher education, put on the agenda the development of basic trainings for mentors involved in the training process of the companies. Another important problem is related to the fact that often companies do not see the benefits that can be obtained by involving students in the work process. Even in the highly socially responsible companies the legally established payment rate for the students were recognized as a significant financial burden for small enterpriser (Marinkovic, Savic და Stamenovic 2022). All these difficulties revealed the need to establish a dual higher education quality assurance system. Although the main requirements for the accreditation of dual higher education programs have been established by the National Council of Higher Education of Serbia, the main indicators for the evaluation and self-evaluation of dual higher education programs have not yet been developed.

According to the law of Serbia "dual study model in higher education", dual programs can be implemented in all educational programs that comply with accreditation standards, the Law on Higher Education and the National Qualification Framework. Accordingly, dual higher education programs can be implemented at all higher levels of education, with the right for graduates to continue to the next level of education.

Curricula of the programs according to the Law of Dual Higher Education of Serbia is compatible with WIL format, which implies the transfer of acquired practical skills in a certain number of ECTS credits and is an organized process. This process is taking place under the

guidance of a company mentor, where the student implements theoretical knowledge in a real work environment, has direct contact with business procedures operating in the business world and technology, interacts with other hired professionals, and is prepared for real work.

A higher education institution willing to implement a dual higher education program will have to search in advance and create a network of employers who are ready to hire staff according to the qualifications provided by this university.

The higher education institution is responsible for the assessment of students. The partner company is involved in the part of the evaluation that covers the practical side of education. The evaluation format is governed by the university's curriculum framework. The mentor appointed by the company must possess the relevant competence.

The dual model can be accredited as an independent educational program or as one of the modules within an educational program. In addition to the standard accreditation requirements, the program/module must be accompanied by a description of the nature and scope of the work practice with the corresponding ECTS credits/hours. For the organization of DHE modules, within the accredited educational program, the universities can submit an appropriate application for the realization of dual education without increasing the number of accredited students.

The distribution of hours between studying at the University of Applied Sciences and the hours spent at work in the company is determined within the framework of the DHE program, provided that the active learning carried out by the University of Applied Sciences (lectures, seminars and other forms of active education) must be offered for at least 450 hours per year, distributed on average over the entire training period. The same applies to the hours of the work based training, which, like theoretical learning, must be represented by at least 450 hours per year, spread over the entire training period.

HEIs-student-company relations are regulated on the one hand by the agreement between HEIs and the company, and on the other hand by the agreement between the student and the company. In the contract between HEIs and the company, there are mandatory conditions that must be met by the participating parties, including the commitment of the company to carry out training with its own funds. Respectively, the plan and program of the work based training, location and

schedule must be clearly defined in advance, intellectual property rights must be protected accordingly, etc.

As for the contract between the student and the company, there are also a number of mandatory rules that must be taken into account during the study period at the workplace. First of all, it concerns the issue of material and financial support of the student. The company is obliged to compensate the student for the cost of using public transport, as well as the cost of food and insurance if these funds are provided for company's other employees. In addition, the student has the right to request work compensation, which is at least 50% of the salary of the staff employed in the corresponding position.

10. **Recommendations for the future model of dual higher education**

Within the DUGEOR project, based on the analysis of dual higher education programs of different European countries, it is possible to summarize the main results and present recommendations for the development of future DHE models/programs in Georgia:

- The dual higher education program is carried out at the bachelor's or master's level, corresponding to the relevant EQF level (6 – BA, 7 – MA).
- Graduates have the right to continue their studies at the next educational level.
- Where possible, along with an academic degree, a vocational education degree should also be awarded.
- In terms of contractual relations, it is recommended that contracts be signed directly between students and partner companies. However, it is also important to sign agreements between universities and companies. To the extent possible, the agreement between the student and the company should provide for compensation for the work performed by the student at the company to support the student's financial independence.
- The ratio of theoretical and practical work: it is recommended that at the undergraduate level, the first 2 semesters focus on theoretical learning, the first work experience starts from the 3rd semester and continues until the end of the studies (for example, with a ratio of 80/20 - theoretical/practical work). At the Master's level, more emphasis should

be placed on practical experience and the proportion of practical work may be much larger than theoretical teaching.

- Company mentors must undergo special training to prepare for their highly responsible role. Regular meetings between company mentors and university teachers are recommended (at least once a year). In general, the obligations of companies and mentors should be broadly discussed and clearly defined—for example, the mentors' compensation and the amount of time spent on training.

- Representatives of both higher education institutions and the company should be involved in the process of developing and updating the curriculum (for example, in a 50/50 ratio). It is also recommended that company representatives have experience in the relevant field.

- Both academic staff and partner companies should be involved in the teaching process. It is recommended that HEIs representatives have industry experience whereas company tutors have approximately 5 years of industry experience and a relevant academic degree (minimum MA). The leading role in the evaluation is assigned to the higher education institution, however, in the part of practical work, it must rely on the partner company's information about the students' work, according to the established reporting and evaluation system.

- In the process of working on the final thesis, the student should be guided by the joint mentorship of the representatives of the higher education institution and the company involved in the educational process. The mentor appointed by the company should evaluate the practical part of the work, and the supervisor appointed by the university should evaluate the academic and theoretical side of the thesis. It is recommended that the university mentor visit the company, meet with the company mentor and develop a joint leadership approach, etc.

- At the level of the Ministry of Education and the Quality Assurance Service, there should be a clear list of criteria that reflects the requirements that a study program must fulfill in order to be called a "dual higher education program". It can be the distribution of theoretical and practical credit hours; determination of learning outcomes; existence of two places for teaching; Involvement of companies in the training process; clear

connection of practical and theoretical components; existence of a quality management and monitoring system for two different learning environments, etc.

11. **Bibliography**

Atkinson, Georgina. 2021. "What is Work Integrated Learning?" *https://myfuture.edu.au/career-articles/details/what-is-work-integrated-learning.* June 2. Accessed June 20, 2023. https://myfuture.edu.au/career-articles/details/what-is-work-integrated-learning.

Boud, D., and N. Solomon. 2001. "Future directions for work-based learning: Reconfiguring higher education. ." In *Work-based learning: A new higher education?*, by D. Boud and N. Solomon, 215-227. Society for Research into Higher Education;Open University press.

Bundesinstitut für Berufsbildung (Hrsg.). 2017. "Quality assurance of company-based training in the dual system in Germany: An overview for practitioners and VET experts." (BIBB - Direktvertrieb).

Cooper, Lesley, Janice Orrell, and Margaret Bowden. 2010. "Work Integrated Learning : a Guide to Effective Practice. ." (Hoboken: Taylor & Francis.). doi:ISBN 978-0-203-85450-1. OCLC 609858835.).

cte.ed.gov. 2020. *Work based learning tool kit.* Accessed June 20, 2023. https://cte.ed.gov/wbltoolkit/.

Davey, Todd, and Balzhan Orazbayeva. 2017. "Dual Study programmes: An effective symbiosis of theory and practice." *www.ub-cooperation.eu.* Accessed June 20, 2023. https://www.ub-cooperation.eu/pdf/cases/W_Case_Study_Duales_Studium.pdf.

Department for Children, Schools and Families Publications. 2009. "The Work-Related Learning Guide (Second Edition)." *https://dera.ioe.ac.uk/id/eprint/10591/7/Work-related_learning_Redacted.pdf.* Accessed June 20, 2023. https://dera.ioe.ac.uk/id/eprint/10591/7/Work-related_learning_Redacted.pdf.

ETF. 2014. *A handbook for policy makers and social partners in ETF countries.* http://ec.europa.eu/dgs/education_culture/repository/education/library/publicatioens/etf-wblhandbook_en.pdf.

EuroEducation.net. 2014. *Austria Higher Education System.* Accessed June 20, 2023. https://www.euroeducation.net/prof/ausco.htm.

Graf, Lukas. 2013. *The Hybridization of Vocational Training and Higher Education in Austria,.* Verlag Barbara Budrich; Budrich UniPress .

Harper, Douglas. 2023. *"Etymology of master", Online Etymology Dictionary.* June 20. Accessed June 20, 2023. https://www.etymonline.com/word/master.

Jackson, Denise. 2015. "Employability skill development in work-integrated learning: Barriers and best practice." *Studies in Higher Education* 2 (40): 350–367. doi:10.1080/03075079.2013.842221.

Mahler, E, G Ilieva, R Breaz, and P Georgiev. 2019. "Flexible pathways for modernisation of undergraduate engineering programmes by country-adapted implementation of the PRACTICE- Integrated dual study model in Bulgaria and Romania." *Balk Reg Conf. Eng Bus Educ.*

Marinkovic, Tatjana, Branko Savic, and Marina Stamenovic. 2022. "Quality assurance and key performance indicators for dual higher education study programs – needs analysis for the development and implementation of higher education of dual study programs in Serbia." *European Quality Assurance Forum. Shaping or sharing? QA in a value-driven EHEA.* West University of Timisoara, Romania. https://eua.eu/downloads/publications/1.05_marinkovic_savic_stamenovic.pdf.

Marope, P.T.M, Wells, Peter J., and Ellen Hazelkorn. 2013. "Rankings and accountability in higher education: uses and misuses." *UNESCO Global Forum Rankings and Accountability in Higher Education: Uses and Misuses, 2011.* Paris. 306.

Nickel, S, E Higher, and E. Area. 2021. "Quality Assurance Framework for Dual Study Programmes in Mozambique and South Africa ."

2017. "Serbian dual education law."

Suryadi, K. 2007. "Framework of Measuring Key Performance Indicators for Decision Support in Higher Education Institution." *J Appl Sci Res.* 12 (3): 1689–95.

Turcotte, J.F., L. Nichols, and L. Philipps. 2016. "Maximizing Opportunity, Mitigating Risk: Aligning Law, Policy and Practice to Strengthen Work-Integrated Learning in Ontario Toronto: Higher Education Quality Council of Ontario."

Van Damme, Dirk. 2002. "Higher Education in the Age of Globalisation: The Need for a New Regulatory Framework for Recognition, Quality Assurance and Accreditation." *GLOBAL EDUCATION* 1 (31): 7-12.

Wedgwood, Hensleigh. 1859. *A Dictionary of English Etimology.* London: Trubner and Co, 60 Paternoster row.

2019. "Zakon o dualnom modelu studija u visokom obrazovanju." http://www.pravno-informacionisistem.rs/SlGlasnikPortal/eli/rep/sgrs/skupstina/zakon/2019/66/1/reg/.

Zegwaard, K. 2014. "Work Integrated Learning in the Curriculum." In *Work integrated learning*, by S. (Ed.), Ferns, 1-6. Milperra, N.S.W. Australia: HERDSA.

Zrnic, N, and Z Miskovic. 2017. "Analysis of EU and worldwide practices and experiences."

არჩვაძე, გვანცა, მარინა ბოკუჩავა, and თამარ გელაძე. 2011. *ქართული მატერიალური კულტურის ეთნოგრაფიული ლექსიკონი.* თბილისი: მერიდიანი .

გუგუშვილი, პარმენ. 1975. *ამქრული ორგანიზაციები.* თბილისი: ქსე, ტ. 1.

მესხია, შოთა. 1983. *საისტორიო ძიებანი.* თბილისი: ტ.2.