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Uzbekistan

Education Sector Analysis

Final Report

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Abbreviations and Acronyms

CIS	Commonwealth of Independent States
CoM	Cabinet of Ministers
CSSVE	Center for Secondary Specialized Vocational Education
ESA	Education Sector Analysis
ESP	Education Sector Plan
EU	European Union
GDP	Gross Domestic Product
GER	Gross Enrollment Rate
GoU	Government of Uzbekistan
GPE	Global Partnership for Education
GSE	General Secondary Education
HEAD	Holistic Evidence and Design
HEI	Higher Education Institution
ICT	Information and Communication Technologies
ILO	International Labour Organization
JICA	Japan International Cooperation Agency
MDPNI	Multi-Dimensional Preschool Education Needs Index
MoE	Ministry of Economy
MoF	Ministry of Finance
MHSSE	Ministry of Higher and Secondary Specialized Education
MoPE	Ministry of Public Education
MPSE	Ministry of Preschool Education
NSC	National Statistics Committee
PISA	Programme for International Student Assessment
OECD	Organisation for Economic Co-operation and Development
SD	Standard Deviation
SDG	Sustainable Development Goal
SIB	Social Impact Bonds
SISQE	State Inspection for Supervision of Quality of Education
SSVE	Secondary Specialized Vocational Education
STC	State Testing Center
TALIS	Teaching and Learning International Survey
UIS	UNESCO Institute for Statistics
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNODC	United Nations Office on Drugs and Crime
VET	Vocational Education and Training
WASH	Water, Sanitation and Hygiene

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A Note on Data

Data is the single most important input for the development of such comprehensive review of challenges in a country's education system, such the one presented in this report. The World Bank requested the Government of Uzbekistan to provide all relevant data for the preparation this Education Sector Analysis, including disaggregated data on students, teachers, and education institutions, as well as data on financing and assessment of learning outcomes. However, the World Bank did not receive all data that was requested to the Government of Uzbekistan. Additionally, the quality of part of the data received was sub-optimal or not disaggregated as requested, which posed challenges to the analyses conducted over the process. An uneven level of analysis can be found across the report given these data challenges.

Multiple sources of data were used throughout this report. The National Statistics Committee along with the following Ministries provided the World Bank with data for the analyses: Ministry of Public Education, Ministry of Preschool Education, Ministry of Higher and Secondary Specialized Education, and Ministry of Finance. Data was shared by these institutions between February and May 2018. It is important to highlight that data discrepancies between datasets provided by the National Statistics Committee and the mentioned education ministries were observed.

It is worth noting that the analysis of quality of education was affected by the lack of reliable data. In fact, the measurement of quality of education in Uzbekistan is particularly challenging, because the country does not assess students learning outcomes through standardized tests. This issue makes the comparison of tests results over time and across schools and regions impossible. International comparisons are also impossible, because Uzbekistan does not participate in international large scale standardized assessments. For this reason, this report recommends the modernizing of Uzbekistan's student assessment systems by adopting international good practices including the utilization of standardized tests to measure learning outcomes. The lack of a systematic approach to measuring quality of learning environments hinders not only effective data collection, but also an evidence-based decision-making process.

In addition to the datasets mentioned above, this report cites studies and reports on different educational levels that were prepared by the World Bank including these: *Improving Early Childhood Care and Education* (2013), *Modernizing Tertiary Education in Uzbekistan* (2014), *Uzbekistan's Vocational Education and Training System: A Rapid Assessment* (2017) and the World Bank's *Listening to Citizens of Uzbekistan Baseline Survey*. This report also refers to the *Multi-Dimensional Preschool Education Needs Index*, which was developed by the World Bank to determine preschool education need in each region of Uzbekistan.

Executive Summary

1. **Uzbekistan’s social and economic transformation has progressed rapidly in recent years.** Nearly 25 years after the collapse of the Soviet Union, the country remained a closed, centrally planned economy, with growth largely driven by commodity export revenues that financed import–substitution industrialization. Over time, it became increasingly evident that the economy was incapable of the sustained productivity growth and job creation required to meet the needs of a growing and young population. With the drivers of the old growth model exhausted and need for jobs given the large demographic bulge in its working-age population, Uzbekistan launched a process of market-oriented reforms with remarkable features in their breadth, depth, and speed. When the new government took power in December 2016, the country embarked upon an ambitious economic modernization program to reinvigorate equitable growth for all of Uzbekistan’s citizens.

2. **The current process of social and economic opening is receiving widespread support from the population, generating an upbeat mood in the country.** Moreover, Uzbekistan has a fast-growing and young population, which represents both an opportunity and a challenge. Citizens are responding positively to the changes, as they feel that they are finally starting to be heard and that the Government of Uzbekistan (GoU) is genuinely interested in improving their economic situation. Within this context, the GoU is under pressure to deliver tangible results as soon as possible, especially as Uzbekistan is facing a major jobs challenge – the working-age population has risen about 50 percent since 2000, from 14 million to 22 million today. At the same time, Uzbekistan faces high demographic pressure, particularly for the age group 0 to 7, meaning that the country will have a large youth population for years to come.

3. **Education in Uzbekistan is understood to be a driver of transformation in the country’s society and economy, and the GoU is committed to improving its education system in the context of its wider reform program.** Undoubtedly, education at all levels in Uzbekistan is in a state of flux. In essence, the education reforms aim to expand access to preschool education while also restructuring the offerings for general secondary and secondary specialized education. By 2021, the GoU aims to reach 100 percent enrollment in preschool education for students aged 5–6 (or 7 depending on the birth date). Along with this important initiative, the GoU is revamping general secondary education (GSE), wherein students will have 11 years of compulsory education and multiple pathways to enter the labor market or higher education. These reforms have significant implications for improving student learning outcomes, but also pose relevant challenges for implementation and resource allocation.

4. **Access to education remains an issue in Uzbekistan, particularly at the preschool level, but the GoU’s ambitious plans to achieve 100 percent enrollment for 5- to 6-year-old children by 2021 is a positive development for strengthening human capital in future generations.** Although the preschool enrollment rate has increased in recent years, it remains at approximately 30 percent, which is low by international standards. Starting with the 2021/22 academic year, it will be compulsory for all 6-year-old children to be enrolled in preschool education.

5. **The monitoring of Uzbekistan’s education system remains fragmented, which poses a significant challenge to any effort to measure and improve quality.** Limited information and capacity to monitor quality hinders policy making regarding preschool education in the country. Quality measurement is also a challenge in GSE. While assessments of GSE students’ outcomes do take place, these are not done under a standardized and systematic approach, so their results cannot be compared over time or across regions. Thus, it is impossible to tell whether quality is improving based on the results of the current national student assessments system. The State Inspection for Supervision of Quality of Education (SISQE) under the Cabinet of Ministers (CoM) is responsible for the measurement of quality in preschool and GSE in Uzbekistan. Since May 2018, SISQE has been tasked with improving Uzbekistan’s student

assessments, including their alignment with international best practices, the introduction of standardized national assessments, and the country's participation in international large-scale student assessments such as the Programme for International Student Assessment (PISA). While capacity needs to be strengthened to manage these tasks, this represents a positive development for the quality improvement agenda in Uzbekistan.

6. Uzbekistan is reforming vocational education to render it more flexible and aligned with the labor market. Admission to vocational education will be available only for graduates of compulsory GSE (after grade 11) on a voluntarily basis, and programs in vocational colleges will last from six months to two years, depending on the specialization. Furthermore, the recent reform in this sub-sector envisages optimization of vocational colleges' network based on national and regional economic development priorities, labor market forecasts, and technological development and trends. Hence, it is expected that the number of vocational colleges will be substantially reduced. This reform also promotes the provision of adult training in existing vocational colleges, including vocational training and retraining for unemployed persons in labor-intensive regions. Through these initiatives, it is expected that the sector will be able to more effectively match the needs of the labor market.

7. The higher education system is also undergoing a transformation, though more efforts are needed to improve quality and ensure that higher education institutions (HEI) are serving the needs of Uzbekistan's economy. Given that Uzbekistan's labor market is evolving with the transformation of the economy, the need for a more diverse skills set is increasing. However, both access to and quality of higher education remain key challenges in Uzbekistan. Limited access to higher education over time has created a shortage of higher education graduates, which now poses challenges to the needs of the labor market. Additionally, the fields of study have remained largely constant over time, failing to adjust to changes in the country's economic structure and labor market.

8. The collection of education data and system monitoring in Uzbekistan lack comprehensiveness and coordination. In total, six ministries along with the National Statistics Committee (NSC) collect education data at different times over the year. In addition, each education ministry, organized under the CoM – i.e., the Ministry of Public Education (MoPE), the Ministry of Preschool Education (MPSE), and the Ministry of Higher and Secondary Specialized Education (MHSSE) – is responsible for data collection and monitoring for its respective level of education. Apart from these education ministries, the Ministry of Finance (MoF) collects data on teachers' salaries and other education expenditures, and the Ministry of Economy (MoE) and the Ministry of Employment and Labor Relations do so for data on demographic and labor development. The newly restructured State Testing Center (STC) and SISQE take on overarching responsibilities of system monitoring. This institutional framework contributes to fragmentation and duplication.

9. The purpose of this report on Uzbekistan Education Sector Analysis (ESA) is to provide a comprehensive overview of outcomes and challenges in the country's education sector with a focus on access, quality, and relevance of education. This report focuses on providing a breadth of analysis, covering all levels of the education system, with in-depth analysis of certain challenges depending on data availability and quality (see note on data). The audience of this report comprises key education stakeholders in the GoU, as well as education development partners and civil society organizations supporting education in the country.

10. This ESA Report describes the current state of education outcomes and system performance as well as the reform environment across the sector. The report assesses areas where the country has made progress as well as areas for further improvement. A key message of this report is that the reform agenda in Uzbekistan is ambitious. While this agenda represents a considerable effort on the part of the

GoU to meet the needs of its citizens for education and skills development, it also comes with a series of implementation challenges that should not be underestimated. Key systems for monitoring, quality measurement, and quality assurance are essential to support the reform progress and ensure that reforms translate into tangible results.

11. Based on the extensive analysis covering all levels of education, this ESA report concludes by making some recommendations for policy making. These recommendations, which reflect the nature and direction of ongoing reforms, are clustered in these areas: (i) improving the quality and availability of early learning opportunities; (ii) improving teaching conditions; (iii) improving existing standards and assessments; (iv) building socioemotional skills; (v) promoting inclusive education; and (vi) developing skills in alignment with labor market needs. It is important that the adoption of these recommendations is carefully analyzed by the GoU within the context of the ongoing reforms.

Introduction

12. **The purpose of this report on Uzbekistan Education Sector Analysis (ESA) is to provide a current and comprehensive stocktaking of the outcomes of Uzbekistan’s education system and the challenges faced within the sector.** This report focuses on ensuring a breadth of analysis, covering all levels of the education system, with the objective of providing a complete snapshot of the current state of challenges in this system. Although lack of data limited the depth of analysis in some dimensions, more granular analysis is included in the report in areas where rich datasets were made available by the GoU. The audience for this report includes key stakeholders in the GoU, particularly the Ministry of Preschool Education, the Ministry of Public Education, and the Ministry of Higher and Secondary Specialized Education, as well as regional and local authorities. The audience also includes key education development partners and civil society organizations supporting Uzbekistan’s education sector. The rationale for this ESA is explained below.

13. **This ESA was carried out within the context of the preparation of the new Education Sector Plan (ESP) for Uzbekistan, as well as the ongoing reforms in the education sector and the country’s current development priorities and strategy.** The previous ESP for Uzbekistan, which covered the 2013–17 period, needed to be updated and aligned with the national vision for development and international goals for education. While Uzbekistan’s ESP 2013–2017 was instrumental in guiding support for the education sector and aligning investment priorities, several important changes have arisen since its preparation. These changes include a shift in government in 2016, several important reforms in education, and the adoption of the United Nations (UN) Sustainable Development Goals (SDG), in 2015. The expiration of Uzbekistan’s ESP 2013–2017 and the aforementioned changes in the country and sector required the development of a new, forward-looking strategic plan aligned with the SDG.

14. **The Government of Uzbekistan (GoU) recently approved a national development strategy for the period 2017–21 that has implications for reform of the country’s education sector.** The “Strategy of Actions for Five Priority Development Directions of the Republic of Uzbekistan in 2017–2021”¹ aims to: (i) improve the public sector; (ii) ensure the rule of law; (iii) develop and liberalize the economy; (iv) develop the social sphere; and (v) ensure security, peace, and tolerance. This strategy explicitly highlights a need to develop the education sector, improve the quality and efficiency of public services, strengthen economic competitiveness, and improve policy for youth. The strategic objectives in education include improving the quality of education services, modernizing learning environments in education institutions, expanding the network of preschools, aligning vocational offerings with the needs of employers, and promoting quality assurance in higher education. Despite this strategic focus on education, a comprehensive and updated analysis of the country’s education sector is missing. Often, development organizations analyze only specific challenges in education subsectors in the country, leading to a fragmented understanding of the major cross-cutting issues, while also hindering a holistic decision-making process. This is not the case of this Education Sector Analysis.

15. **The GoU has been designing and implementing relevant reforms from preschool to higher education, since early 2017.** Education in Uzbekistan is in a state of flux, with several reforms ongoing in all sub-sectors. These reforms are aiming to increase access to preschool education, change the offerings in general secondary education, provide students with different pathways towards vocational and higher education, and improve the relevance of higher and secondary specialized education.

16. **The preparation of Uzbekistan ESP 2019-2023 was informed by the findings of this ESA.** The country and global contexts changed substantially since the development of first ESP for Uzbekistan. At

¹ http://www.lex.uz/pages/getpage.aspx?lact_id=3107042.

the end of the period of the previous strategic plan, the GoU and the Local Education Group decided to develop a new ESP for the period 2019-2023 to reflect the changing context and priorities in education sector in the country. The preparation of the current ESP for Uzbekistan was informed by the ESA that is presented in this report.

17. **It is important to highlight that multiple sources of data were used throughout this report, as mentioned in the note on data above. Additionally, several important analyses carried out by development partners were considered for preparation of this report.** For instance, the World Bank completed studies on *Improving Early Childhood Care and Education* (World Bank 2013), *Modernizing Tertiary Education in Uzbekistan* (World Bank 2014c), and Uzbekistan’s *Vocational Education and Training System: A Rapid Assessment* (World Bank 2017b). Although the mentioned vocational education and training (VET) assessment is recent, additional targeted analyses on skills demand in the VET subsector are missing. The analyses at the preprimary and higher education levels were outdated at the start of the preparation of this report and needed to be revisited to reflect the latest situation in each of these subsectors, including the outcomes of ongoing investment projects and anticipated effects of reforms.

18. **This report is structured in four chapters.** The first provides relevant information on the country context. Then, the analysis of challenges and outcomes is presented by theme: (i) system structure governance and reforms, (ii) system financing, (iii) enrollment, (iv) special needs education, (v) out-of-school children, (vi) quality, and (vii) major outcomes. The third chapter is about system monitoring. The final chapter presents key policy recommendations based on the analysis presented throughout the report. Given the comprehensiveness of this ESA, the table below was prepared to provide a snapshot of key indicators presented in this report.

Table 1. Key Indicators

Context	
Total population of Uzbekistan	32.1 million
Education spending as share of GDP (2017)	6.4 percent
Education spending as share of government budget (2017)	32.4 percent
Access	
Preschool enrollment rate (ages 3-6/7) (2016-17)	29 percent
Gross enrollment rate in grades 1-4 (2016-17)	100.2 percent
Gross enrollment rate in grades 5-9 (2016-17)	94.4 percent
Share of secondary students enrolled in vocational education and training (2016-17)	87 percent
Gross enrollment rate in higher education (2017-18)	9 percent <i>6 percent for women</i> <i>11 percent for men</i>
Share of higher education applicants who secured a place in a higher education institution (2017-18)	9 percent
Quality	
Urban-rural gap in reading achievement at Grade 4 (2013)	16 points, equivalent to 0.16 SDs
Female-male gap in learning outcomes at Grade 4 (2013)	11 points in reading 14 points in language
Share of qualified general secondary education teachers (with a higher education degree)	Over 80 percent
Share of SSVE teachers without a higher education degree	30 percent
Share of preschool education institutions in need of major repairs (2016)	47 percent
Share of general secondary education institutions in need of major repairs	15 percent

Share of general secondary education institutions without availability of running water	30 percent
Share of general secondary education institutions operating in two or more shifts (2016-17)	75-80 percent
Ratio of students to academic staff in higher education institutions (2017)	13:1
Share of academic staff in Uzbek universities without scientific qualifications	Over 50 percent
Relevance	
Students reporting various difficulties in socioemotional skills related to engaging with others and teamwork	Over 20 percent
Employment rate for higher education graduates (2013)	77 percent
Employment rate for SSVE graduates (2013)	57 percent
Wage premium for higher education graduates relative to SSVE graduates (2014)	55 percent
Share of firms reporting difficulties in hiring specialists with higher education (2013)	35 percent

I. Country Context

a. Economic Context

19. **Unlike many countries that transitioned to market economies in the early 1990s, Uzbekistan only took the first steps to do so after its December 2016 elections.** Nearly 25 years after the collapse of the Soviet Union, the country remained a closed, centrally planned economy, with growth largely driven by commodity export revenues that financed import–substitution industrialization. This was achieved through import barriers and restrictions to capital outflows, significant directed lending, as well as on- and off-budget subsidies that supported a wide network of state-owned enterprises and a few private sector participants. The economic regime was sustained on the tailwinds of the commodities super-cycle. But with a deteriorating external environment, it became increasingly evident that the economy was incapable of the sustained productivity growth and job creation required to meet the needs of a growing and young population.

20. **With the drivers of the old growth model exhausted and the growing need for jobs given the large demographic bulge in its working-age population, Uzbekistan launched a process of market-oriented reforms with remarkable features in their breadth, depth, and speed.** When the new government took power in December 2016, the country embarked upon an ambitious economic modernization program to reinvigorate equitable growth for all of Uzbekistan’s citizens. In early 2017, the GoU announced a broad market-oriented reform program that which included five priority policy areas: (i) improving public administration and state-building; (ii) safeguarding the supremacy of the law; (iii) maintaining economic growth and liberalizing the economy; (iv) enhancing social safety nets; and (v) ensuring security. The program also restated the authorities’ commitment to macroeconomic stability and to improving the business climate.

21. **Following the completion and issuance of its 2017–2021 Strategy, the GoU made rapid progress on its path toward social and economic transformation.** In September 2017, the GoU allowed the local currency (Uzbek som) to depreciate by over 50 percent, while abolishing the existing surrender requirements on exports; as a result, the large parallel foreign exchange rate premium was eliminated. This move reduced large economic distortions in the economy and signaled the GoU’s reform commitment. The GoU took important steps to reduce the state’s large presence in the economy, liberalize prices, and open the economy to greater foreign and domestic private sector participation in job growth and investment. These actions, by themselves, represent a major step for Uzbekistan’s strategy to achieve equitable growth and jobs, and entail major structural changes that present both opportunities and challenges.

22. **Uzbekistan is Central Asia’s most populous country: its 32.1 million people account for over one-half of the region’s total population.** The country has a growing and young population, which represents both positive and negative consequences for economic transformation. The current process of social and economic opening is receiving widespread support from the population, generating an upbeat mood in the country. Citizens are responding positively to the changes, as they feel that they are finally being heard and that the GoU is genuinely interested in improving their economic situation. Given these high expectations, the GoU is under pressure to deliver tangible results as soon as possible, especially as Uzbekistan is facing a major jobs challenge – the working-age population has risen by about 50 percent since 2000, from 14 million to 22 million today. These demographic pressures also increase the risk of radicalization.

23. **The transition of Uzbekistan to a market economy requires important economic and social changes: from a state- to a private sector-driven model; from inward- to outward-looking growth and jobs drivers; and from use of general government subsidies to use of modern targeted social**

protection. These changes represent major steps toward Uzbekistan’s strategy of stimulating equitable growth and jobs. At the same time, the transformation toward a market economy may create transitional dislocations and possible adverse impacts for some vulnerable parts of the population—adverse impacts that this transition aims to mitigate.

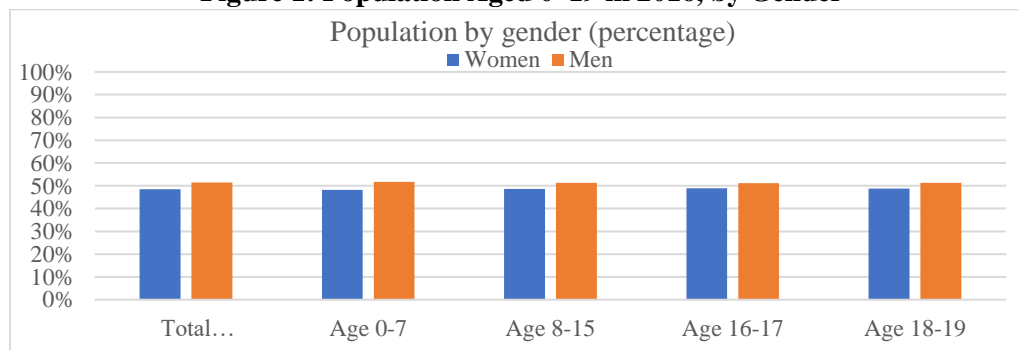
24. **Recent data show that GDP growth slowed to 4.9 percent in the first half of 2018, as compared to 7.0 percent in the same period of 2017.** However, the medium-term outlook remains favorable given the GoU’s reforms. Annual GDP growth is expected to remain steady at around 5 percent from 2018 to 2020. Employment creation is expected to be sluggish, with investments expected to be below the levels of 2017. Ensuring reform prioritization and implementation will be critical to sustaining robust and inclusive economic growth and jobs creation. During the first semester of 2018, the GoU sustained a robust public investment program, while curtailing spending to meet its budget targets. More than 400 state-owned enterprises were sold in the first half of 2018.

b. Demographic Context

25. **Uzbekistan has a fast-growing, young population.** Between 2013 and 2016, the population grew from 30.2 million to 32.1 million, almost a 9 percent increase in three years. Moreover, around 37 percent (12 million people) of the population is under the age of 19. More remarkably, the population has almost doubled since 1980, when it stood at 15.9 million. Even though this growth rate recently slowed down, average growth between 2013 and 2016 remains at 1.8 percent yearly (NSC 2018). Figure 1 reveals small gender differences in the population aged 0–19 in 2016. This population consists of slightly more boys than girls, especially among those aged 0–7 (52 percent are boys), a gap that closes with age.

Uzbekistan has a growing and young population, an advantage for the country, but a challenge for the education system.

Figure 1: Population Aged 0–19 in 2016, by Gender

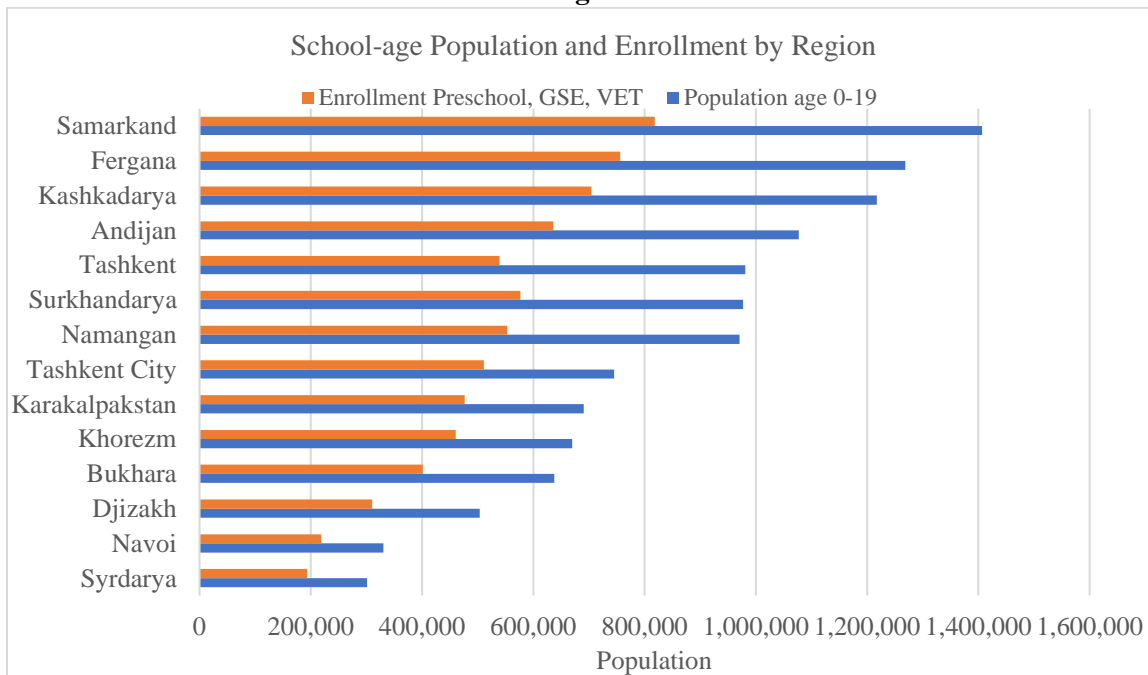


Source: NSC 2018.²

26. **The school-age population in Uzbekistan varies substantially across regions.** For instance, Samarkand Region, which includes one of the largest cities in Uzbekistan, has around 1.4 million people under the age of 19, or 12 percent of the total population in Uzbekistan of this age group. This puts pressure on access to the education system in that region. On the other end, only 3 percent of all students in the country under 19 years, approximately 300,000 children, live in Syrdarya Region. Figure 2 presents this variation by comparing the population aged 0–19 and the total number of children currently enrolled in pre-university education in each region of the country, as well as Tashkent City (NSC 2018).

² (a) These data are available only for specific age brackets. (b) Data from NSC was collected between 20th of February and 19th of May 2018 as part of research for ESA. All future references to NSC are cited as per this.

Figure 2: School-age Population (Aged 0–19) and Pre-university Education Enrollment in 2016, by Region



Source: NSC 2018.

27. **The growth of the school-age population varies across regions and poses additional challenges to the education system.** The largest populated regions currently face fewer access and enrollment challenges for their school-age population, but the population is predicted to grow significantly in coming years. However, less populated regions, including Khorezm and the Republic of Karakalpakstan, are already experiencing significant pressure on access to education and enroll high shares of their population in pre-university education institutions (Figure 2). In addition, the current pressure in Tashkent City is especially high: 69 percent of the population aged 0–19 already attends pre-university education institutions. This issue is further highlighted when considering the current student–teacher ratio in general secondary education (GSE) schools in the city, which at 21:1 is the highest in the country, versus a national average of 13:1 (MoPE 2018).³

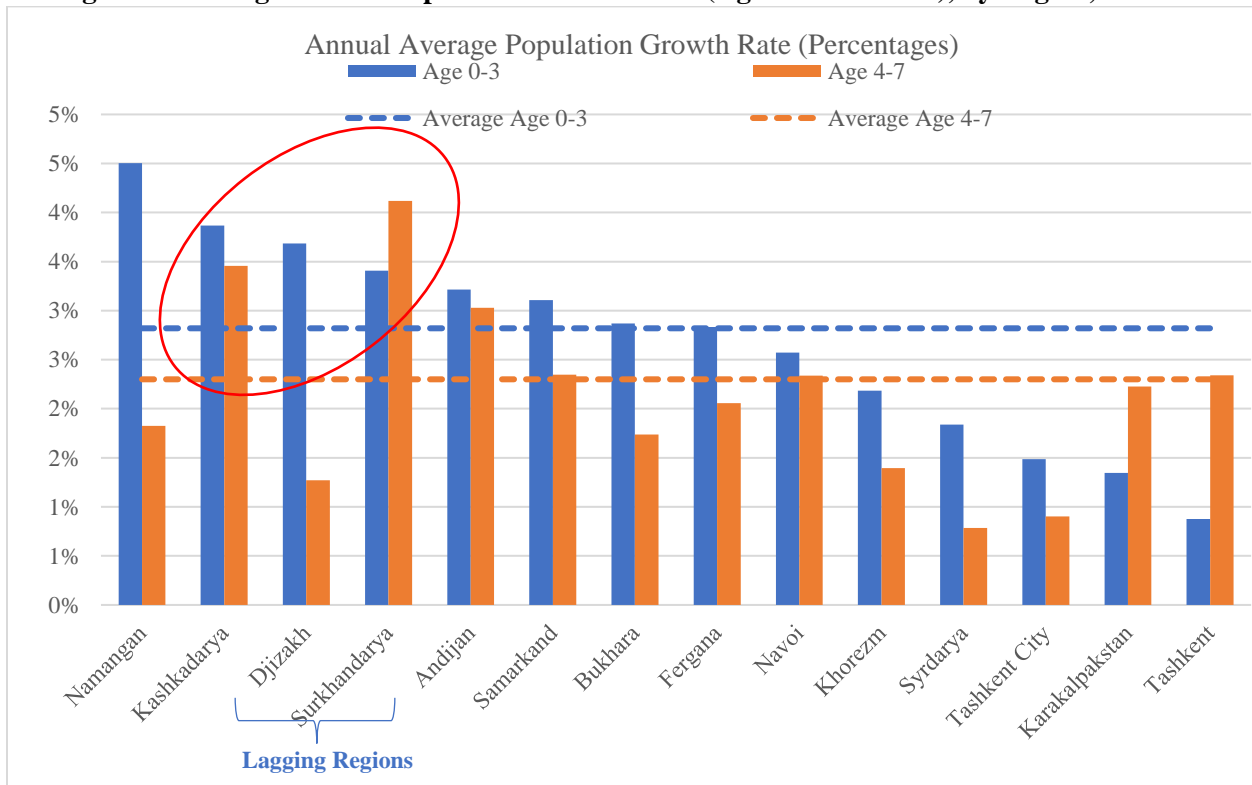
28. **The demographic pressure highlights an increasing demand and need for further preschool spaces in coming years.** Particularly, the number of children aged 0–3 grew on average by 2.8 percent between 2013 and 2016, presenting a considerable challenge for the education system. Figure 3 underlines further that the population of children aged 4–7 also increased by 2.3 percent yearly on average from 2013 to 2016. In contrast, the population of children aged 8–19 declined by 0.9 percent yearly on average. Tashkent City shows the largest increase in population in the age group 8–19, most likely due to internal migration. Figure 4 corroborates the projected population growth of school-age children in coming years. Although from 2005 to 2015 the school-age population slightly declined, at least in part due to declining birth rates, it has since shown a steady increase that is forecasted to continue until 2025.

³ Data from MoPE was collected between 20th of February and 19th of May of 2018 as part of the ESA. All future references to the MoPE are cited as part of this.

29. **The demographic pressure from those aged 0–3 is observed in three out of the country’s five lagging regions, which makes the access challenge more critical from both a social and an economic viewpoint.** The concept of lagging regions relates to the 2018 World Bank’s “Listening to Citizens of Uzbekistan” baseline survey. The World Bank developed the Multi-Dimensional Preschool Education Needs Index (MDPNI) to determine the preschool education needs in each region of Uzbekistan based on 12 indicators in the following three dimensions: access to infrastructure, economic conditions of households, and enrollment of children in preschool education. The measure is derived by first estimating a household-level score that indicates the relative need for support for a given household. In the method adopted, a household is defined as “deprived” or “in need” when it is at or above the threshold of 33 percent of the index. The regions of Uzbekistan were ranked based on the share of households in each region classified as “in need.” The five regions of Uzbekistan most in need according to the MDPNI are Kashkadarya, Djizzak, Surkandarya, Navoi, and the Republic of Karakalpakstan. Map 1 illustrates the MDPNI ranking. For more information on the MDPNI please refer to Annex I.

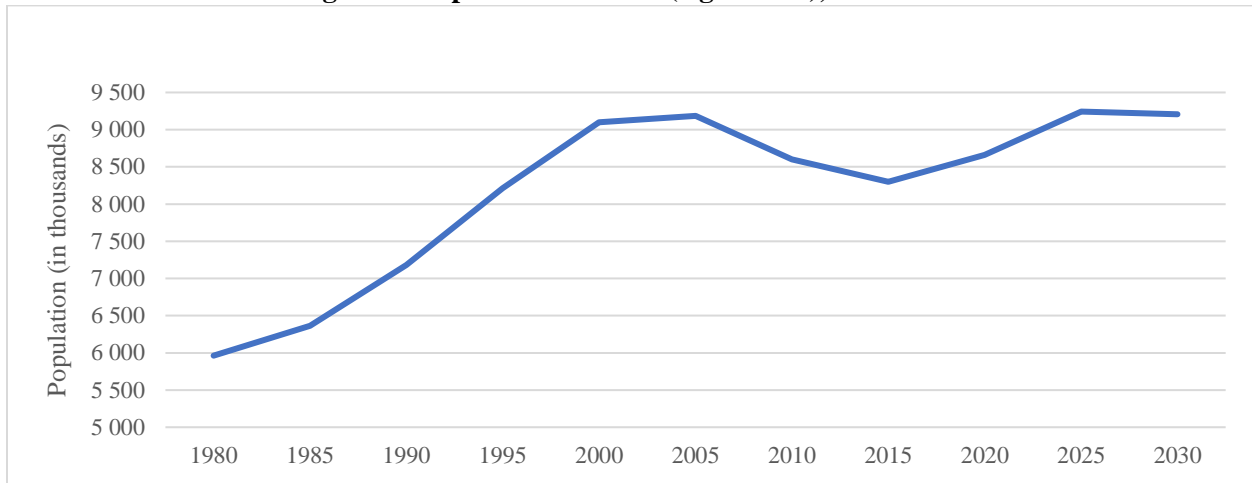
Uzbekistan’s lagging regions are under demographic pressure, which makes the access challenge more critical in these vulnerable areas of the country.

Figure 3: Average Annual Population Growth Rate (Aged 0–3 and 4–7), by Region, 2013–16



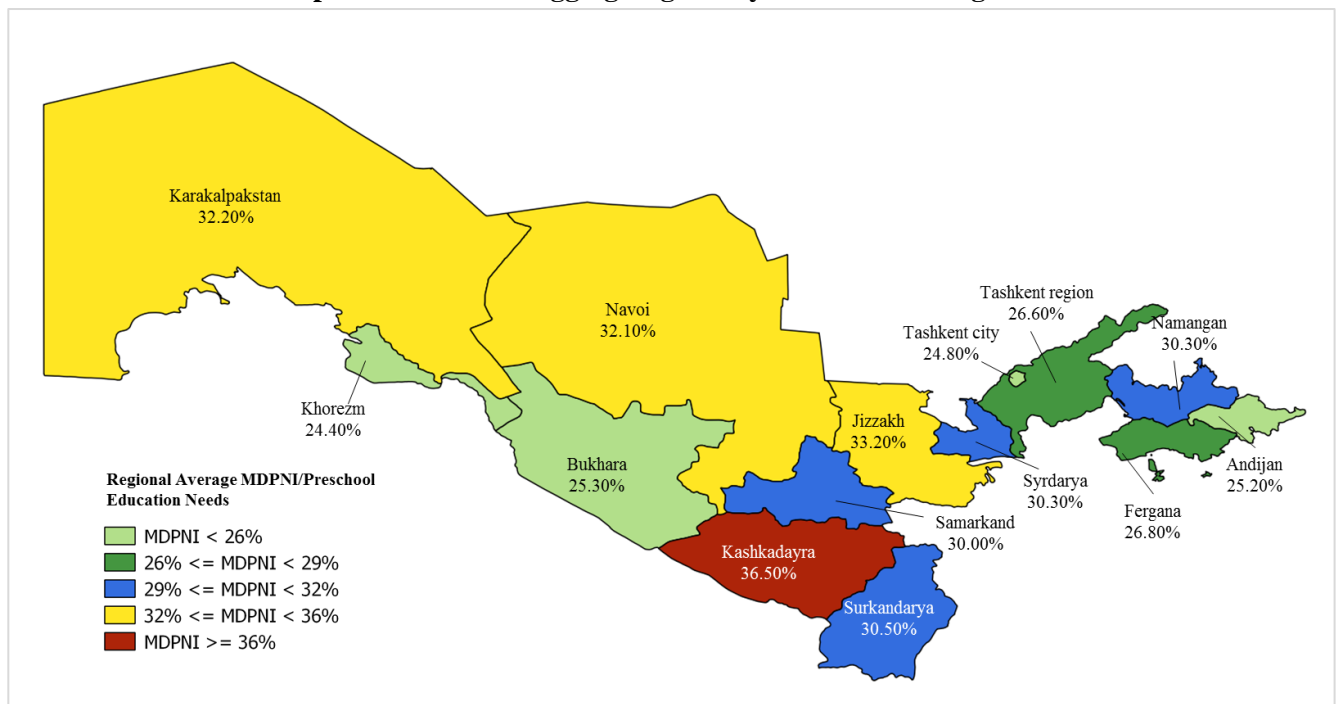
Source: NSC 2018.

Figure 4: Population Growth (Aged 5–19), 1980–2030



Source: UNDP 2018.⁴

Map 1: Uzbekistan Lagging Regions by MDPNI Ranking



Source: World Bank, 2018a.

⁴ The graph shows population projections for the population of Uzbekistan (aged 5–19) until 2030, using a medium variant (UNDP 2018).

30. **In short, Uzbekistan is facing significant demographic pressure, particularly for the age group 0–7, and its extent varies across regions.** The effects of a growing population are already visible in Namangan, where the population aged 0–3 grew on average by 4.5 percent between 2013 and 2016. This exerts further pressure on the education system, in a region where on average about 1,000 students enroll in each GSE school located in urban areas, and where 64 percent of GSE schools operate in double shifts (i.e., morning and afternoon shifts at the same school). In Kashkadarya and Djizzak Regions, where the population aged 0–3 grew second and third highest from 2013 to 2016, respectively, 65 percent and 82 percent of GSE schools operate in two or more shifts (NSC 2018).

Pressure in the pipeline of students: In the three regions with the highest population growth rate for the 0–3 age group, more than 64 percent of existing schools (for older students) must already operate in multiple shifts.

II. Situation Analysis

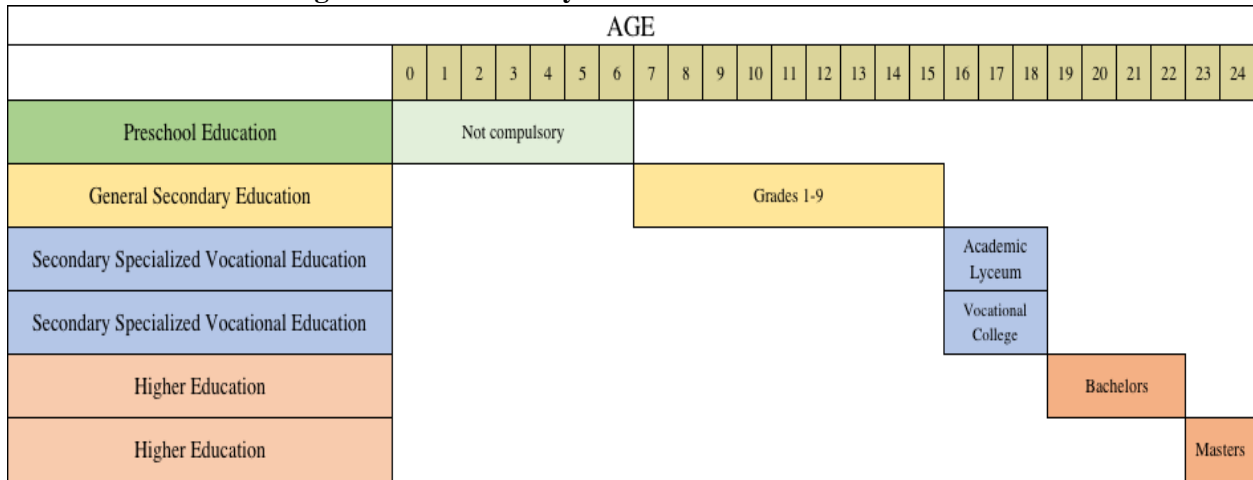
A. Education System Structure, Governance, and Recent Reforms

a. Structure and Implications of the Ongoing Reforms

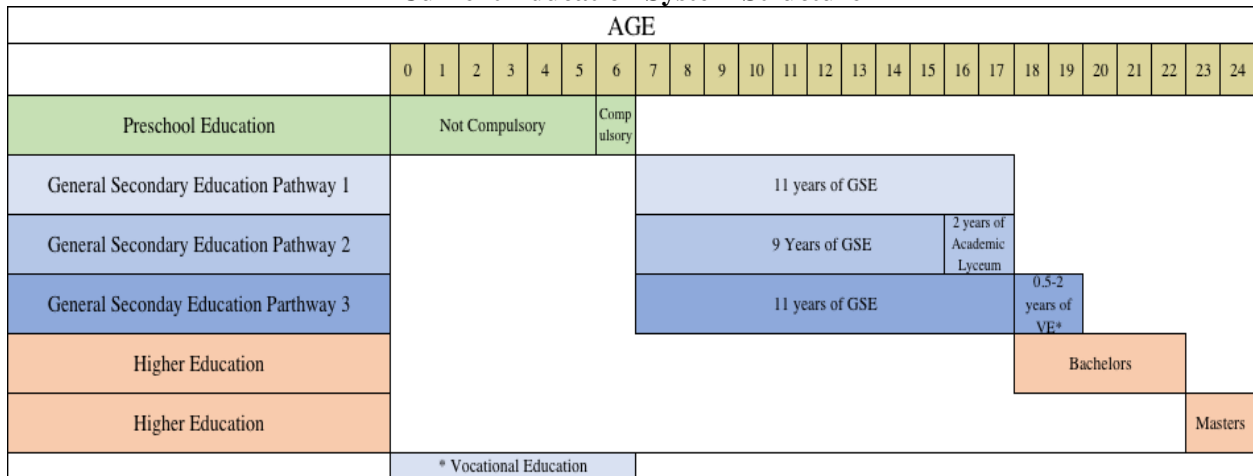
31. **The GoU is highly committed to improving its education system and has been designing and promoting various relevant education reforms. Undoubtedly, education at all levels in Uzbekistan is in a state of flux.** In essence, these reforms aim to expand access to preschool education, while also restructuring the offerings for general secondary and secondary specialized education. Figure 5 presents the previous and current structures of the education system. By 2021, the GoU aims to reach 100 percent enrollment in preschool education for students aged 5–6 (or 7, depending on the birth date). Along with this important initiative, the GoU is revamping GSE, wherein students will have 11 years of compulsory GSE and the choice of three pathways: (i) 11 consecutive years of study in a GSE school; (ii) 9 years in a GSE school followed by 2 years in an academic lyceum; or (iii) 11 years of study in a GSE school followed by up to 2 years in a vocational college. These relevant reforms are summarized in this section of the ESA Report, while more detailed information can be found in the sections that present the challenges in each subsector.

Education in Uzbekistan is in a state of flux. Reforms aim to expand access to preschool education while also restructuring the offerings for general secondary and secondary specialized education.

Figure 5: Education System Structure Prior to 2017/18



Current Education System Structure



Source: Authors' elaboration.

Note: GSE = General Secondary Education.

Preschool Education

32. In December 2016, the GoU approved the “Program for Further Improvement of the Preschool Education System from 2017 through 2021,” with the overarching goal of improving the quality of preschool education. This national program aims at: (i) creating conditions for comprehensive intellectual, emotional, aesthetical, and physical development of children, based on international best practices; (ii) improving the quality of preschool education, and preschool children readiness, based on widely adopted international practices; (iii) establishing half-day groups in preschools for children aged 5–6; (iv) improving the curricula and syllabi for pre-service and in-service training of preschool teachers through modern educational technologies and methods; and (v) improving the material and technical infrastructure conditions of preschool institutions, including construction of new preschools in rural settlements, and provision of equipment, furniture, teaching and learning materials, and multimedia tools compliant with modern requirements.⁵

⁵ Presidential Decree No. 2707 on “Measures Aimed at Further Improvement of the Preschool Education System in 2017–2021,” dated December 29, 2016.

33. **In 2017, the GoU announced an ambitious plan to expand access to preschool education with the aim to achieve 100 percent enrollment for 5- to 6-year-old children by 2021.** Starting with the 2021/22 academic year, it will be compulsory for all 6-year-old children to be enrolled in preschool education. This measure will be implemented in a phased approach, starting in a few regions of the country in the 2019/20 academic year. Within this context, the GoU established the Ministry of Preschool Education (MPSE) in September 2017 to play the lead role

in the expansion of early childhood development in Uzbekistan and to govern this core subsector. Until September 2017, preschool education was the responsibility of the Ministry of Public Education (MoPE).

Preschool education reforms have focused on approaches to increase access to and quality of education. The GoU is also reviewing teacher policies and stimulating both the supply of and demand for preschool education.

34. **The GoU recently announced substantial salary increases for preschool teachers and staff.** To improve working conditions and attract highly qualified personnel to work in public preschools (currently service provision takes place almost entirely in public preschools; only 2 percent of children aged 3–6/7 attend nonpublic preschools). In February 2018 the GoU announced an immediate 30 percent increase in base pay for head teachers, teachers, methodologists, psychologists, music teachers, and assistant teachers of preschools. An additional pay increase is expected to go into effect in the second semester of 2018 for teachers of children aged 5–7, which would equalize their base pay with that of primary school teachers in GSE schools.⁶

35. **The GoU also recently announced reforms to expand access to preschool by stimulating both the supply of and demand for preschool education.** To expand the supply of preschool services, the GoU is promoting several models of public–private partnerships, including incentives such as free provision of land and/or buildings and financial subsidies to cover part of the costs incurred by private preschools.⁷ The approach for increasing access to preschool education nationwide includes a massive expansion in urban areas in partnership with private providers, while the GoU will continue playing the role of service provider in rural areas. To stimulate household demand for preschool education, the GoU reformed the structure of fees paid by parents for their children to attend public preschools. In particular, the GoU approved a reduced set of fees for children in rural areas.⁸ Additionally, preschool education will be provided at no cost for some families from disadvantaged socioeconomic backgrounds in private preschools (see more information on the regulatory framework below).

General Secondary Education

General Secondary Education

36. **Uzbekistan is in the process of expanding GSE from 9 to 11 years of schooling.** Until 2017, GSE in Uzbekistan consisted of nine years of compulsory education (grades 1 to 9), but this requirement is changing. In the 2017/18 academic year, compulsory GSE was expanded from 9 to 10 years of study and the eleventh year (grade 11) is being added in the 2018/19 academic year. Students in grades 10 and 11 should receive some dedicated vocational training to ensure that they gain exposure to practical training and skills. However, students can still choose to attend academic lyceums instead of GSE schools for grades 10 and 11, with the caveat that the study program for academic lyceums has been condensed to two years. In other words, compulsory GSE could involve 11 years in a GSE school or 9 years in a GSE school plus

⁶ Presidential Resolution No. 3571 on “Measures to Improve the Terms of Payment for Certain Categories of Employees in State Preschool Education Institutions.”

⁷ Presidential Resolution No. 3651 on “Measures of Further Stimulation and Development of Preschool Education System,” dated April 5, 2018.

⁸ <https://www.gazeta.uz/ru/2018/01/09/kindergarten>.

2 years in an academic lyceum. Starting in the 2019/20 academic year, graduates of grade 11 can choose to continue their studies in vocational colleges or apply to a university.

Secondary Specialized Vocational Education

37. **As part of the wide education sector reform, Uzbekistan is making its secondary specialized vocational education (SSVE) subsector more flexible and aligned with the labor market.** In the context of extending GSE to 11 years of study, as described above, vocational education and training (VET)⁹ will become an optional pathway available only for graduates of compulsory GSE (after grade 11). VET programs will be offered in different formats lasting from six months to two years, depending on the specialization. The vocational colleges network will be optimized based on national and regional economic development priorities, labor market forecasts, and technological development and trends. Thus it is expected that the number of vocational colleges will be substantially reduced, from around 1,400 to around 800 colleges,¹⁰ including through the organization of multidisciplinary colleges.

38. **The reform includes changes in adult training for both the employed and unemployed. These changes are aligned with international best practices in lifelong learning, under which vocational colleges play the role of training provider.** Currently, adult education is provided under a fee-based model in centers managed by the Ministry of Employment and Labor Relations and training companies. In early 2017, this Ministry established three centers for adult training in partnership with the Korea International Cooperation Agency (KOICA) in Tashkent, Samarkand, and Kashkadarya Regions. In April 2017, the Cabinet of Ministers (CoM) approved Resolution No. 199 on measures for professional training, including establishment of these centers in the remaining regions of Uzbekistan. Moreover, private training companies provide adult training in areas such as information and communication technologies (ICT), business administration, and accounting.

39. **Important changes are occurring in the governance of Uzbekistan’s SSVE system as well.** Recent reforms in the SSVE subsector include the transfer of administration of vocational colleges to ministries other than the Ministry of Higher and Secondary Specialized Education (MHSSE), as well as to public agencies or enterprises operating in the same sector under which training programs are offered. By subordinating vocational colleges to other organizations in the same sector, it is expected that these institutions will be better able to respond to the skills needs of specific industries.

Higher Education

40. **Changes in the higher education subsector are not occurring at the same pace as in the other subsectors, but they started a bit earlier and are still taking place.** Presidential Decree No. 1533 of 2011 focuses on improving quality, teaching infrastructure, and management of the sector. Following from this, Decree No. 371 of 2012 introduced a new approach to the assessment of quality in the sector, moving away from an input-focused approach to an outputs-oriented one. As such, this Decree established the basis for the creation of a university ranking, which was first published in August 2018.¹¹

⁹ In this report, vocational education and training (VET) refers to vocational/professional education provided in vocational/professional colleges.

¹⁰ Presidential Decree on “Measures to Comprehensively Improve the System of General Secondary, Secondary Specialized and Vocational Education,” dated January 25, 2018.

¹¹ See <http://www.tdi.uz/uz/news/view/yurtimizdagi-oliy-talim-muassasalari-reytingi-infografika>.

41. **A new per capita financing mechanism for higher education was introduced in 2010.**¹² It replaced a model that funded universities based on numbers of staff, assets, and students. The new mechanism provides public funding to higher education institutions (HEIs) on the basis of the number of students enrolled under the state grant quota, with additional funding for orphans and disabled students. Per-student funding coefficients and compensatory coefficients also exist. The exact level of these coefficients is set each year for each HEI in a joint MHSSE-Ministry of Finance (MoF) Decree.

42. **The State Inspection for the Supervision of Quality in Education (SISQE) was established in 2017 and took over the responsibility for quality assurance of the subsector, previously under the responsibility of the State Testing Center (STC).**¹³ The STC remains responsible for the entry exams that all candidates take for accessing higher education. Yet these exams also went through modifications in the way they are administered. While all candidates used to sit for the exam in one single day throughout the country – usually August 1 – exams are now taken over the course of two weeks during August.

b. Governance and Regulatory Framework

43. **Uzbekistan’s education system is highly regulated and governed by multiple decision makers.** Overall governance and decision-making processes are shared by three line ministries: the MPSE, the MoPE, and the MHSSE. Other relevant institutional actors with a say in education include the CoM, the MoF, the Ministry of Economy (MoE), and SISQE. Laws, government decrees and resolutions, state standards, and national programs are centrally prepared to regulate important aspects of the system, including curriculum, teachers’ professional development, and assessment of students’ competencies.

44. **The GoU enacted several important regulations in the education sector over the past two years.** A review of Uzbekistan’s legal framework was conducted for the purposes of this ESA Report. For the period between April 2017 and July 2018, more than 200 legal documents were reviewed, including 61 Presidential Decrees, 130 Presidential Decisions, 19 Senate Laws, 9 CoM Resolutions, and 1 Joint Resolution. Most of the new legal documents issued in the last two years are on preschool and higher education. Table 2 summarizes this review.

Table 2. Summary of Changes to Uzbekistan's Regulatory Framework on Education, 2017/18

Area	Main Purposes	Reference
Preschool Education	Improving the management of preschool education system and organization of activities of the MPSE	Presidential Decision IIII-3305, 30.09.2017 Presidential Decree VII-5198, 30.09.2017 Presidential Decision IIII-3378, 07.11.2017 Presidential Decree VII-3651, 05.04.2018
	Measures to improve the conditions of payment of selected categories of employees of state preschool education institutions	Presidential Decree VII-3571, 28.02.2018 Cabinet of Ministers Resolution No. 10, 05.01.2018 Cabinet of Ministers Resolution No. 180, 06.03.2018
	Promotion of a targeted program of construction, reconstruction, and overhaul of preschool education	Presidential Decree VII-3822, 02.07.2018

¹² Joint Decree of the Ministry of Finance (No.. 67) and the MHSSE (No. 329), dated August 20, 2010.

¹³ Resolution of the Cabinet of Ministers No. 515 of July 2017.

Area	Main Purposes	Reference
	institutions for 2018, and on equipping preschool education institutions with toys, furniture, appliances, and other technical equipment	Joint Resolution of MPSE, Agency of State Standard, Ministry of Health and MoF No. 2986, 17.03.2018
	On measures to further endorse the relations of the public-private partnership in the sphere of preschool education	Cabinet of Ministers Resolution No. 378, 19.05.2018 Cabinet of Ministers Resolution No. 475, 25.06.2018
GSE and SSVE	On improving the activities of the MoPE	Presidential Decision IIII-3304, 30.09.2017
	On measures on radical improvement of the system of GSE, specialized secondary, and vocational education, and on improvement of activities of the Center for Secondary Specialized Vocational Education	Presidential Decree VII-5313, 25.01.2018 Presidential Decree VII-3504, 03.02.2018
	Measures on the further improvement of the system of preparation of the pedagogical staff, retraining and improvement of professional skills of workers of national education	Presidential Decision IIII-3289, 26.09.2017
	On approval of the order of selection and admission of GSE students to academic lyceums	Cabinet of Ministers Resolution No. 212, 23.03.2018
Higher Education	On measures to further develop the system of higher education and additional measures to improve the quality of education in HEIs to ensure their active participation in the wide-scale reforms implemented in the country	Presidential Decision IIII-2909, 20.04.2017 Presidential Decree VII-3775, 05.02.2018
	Establishing new universities (i.e., the University of Journalism and Mass Media of Uzbekistan, the International University of Tourism "Silk Road," and a branch of Puchon University in Tashkent City)	Presidential Decree VII-3737, 24.05.2018 Presidential Decree VII-3815, 28.06.2018 Presidential Decree VII-3821, 02.07.2018
	On improving the procedure for admission to higher education institutions; on carrying out introductory tests for the Bachelor's degree of higher education institutions; and on approving the procedure for admissions of persons with disabilities in HEIs through quotas based on the state grant	Presidential Decision IIII-3389, 16.11.2017 Cabinet of Ministers Resolution No. 417, 02.06.2018 Cabinet of Ministers Resolution No. 261, 03.04.2018 Cabinet of Ministers Resolution No. 462, 22.06.2018
Provision of Services by Nonpublic Institutions	Improving the procedure of licensing to providing private educational services	Cabinet of Ministers Resolution No. 241, 27.03.2018
	On measures to further develop activities to provide nonstate educational service	Presidential Decision IIII-3276, 15.09.2018

Source: Regulations found on GoU websites.

c. System Capacity

45. **The overall capacity of Uzbekistan’s education system remains to be strengthened in areas such as strategic planning, human resources management, financial management, budgeting, and quality monitoring and evaluation.** Few quality professionals exist in any of these areas in the three Ministries of Education, with a special remark on the MPSE, which was established in late 2017 and has a very ambitious goal to pursue in the next five years.

46. **The MoPE acknowledges the need to enhance its institutional capacity and has been looking for support from development partners in this area since June 2018.** This Ministry is aware of the existing capacity gap that hinders improvement in the quality of service delivery and plans to work with highly qualified professionals, supported by a pool of development partners, to help address this challenge. A functional analysis is being considered to shed light on issues currently observed in areas such as planning, human resources management, financial management, and quality measurement and monitoring.

d. Relevant International Commitments

47. **The GoU has committed to a series of international conventions and standards on child welfare and education that underpin the system and bring Uzbekistan in line with most other countries.** These commitments include the Convention on the Rights of the Child, which Uzbekistan ratified in 1994.¹⁴ Uzbekistan continues to prepare periodic reports to the UN Committee on the Rights of the Child that capture important data to reflect what has been done and what actions remain to ensure that children’s rights are secured as per the Convention. Additionally, in 1997¹⁵ Uzbekistan ratified the Convention against Discrimination in Education, which aims to combat discrimination, cultural or religious assimilation, or racial segregation in education and promotes the right to education in minority languages. In 2009, the GoU ratified the UN Convention on the Rights of Persons with Disabilities and adopted the “National Concept of Inclusive Education.” This demonstrates again the country’s commitment to comply with international standards concerning the rights of persons with disabilities, including the right to education by promoting an inclusive approach to the education policy.

48. **Uzbekistan is committed to implementing international labor standards and conventions, particularly the prevention of child and forced labor.** The systematic use of forced child labor in Uzbekistan’s cotton harvest ended over the past two years and concrete measures are being implemented to completely end the use of forced labor in the country.¹⁶ Uzbekistan made a high-level political pledge to end forced labor, articulated by President Shavkat Mirziyoyev at the UN General Assembly in September 2017. Uzbekistan also pledged to engage with independent civil society groups at the IV Global Conference on the Sustained Eradication of Child Labor in November 2017.

49. **Uzbekistan is committed to the Global Sustainable Development Goals (SDG) 2030, including SDG 4 on education.** SDG 4 ensures inclusive and equitable quality education and promotes lifelong learning opportunities for all.¹⁷ Uzbekistan, along with all 193 UN member states, endorsed the SDGs in 2015 as part of the Resolution of the UN General Assembly on adoption of the 2030 Agenda for Sustainable Development.¹⁸ Uzbekistan’s CoM took action in early 2016 to achieve the SDGs at the national level

¹⁴ <http://unicef.uz/en/media-center/news-and-press-releases/2499>

¹⁵ <https://en.unesco.org/countries/uzbekistan/conventions>

¹⁶ http://www.ilo.org/wcmsp5/groups/public/--ed_norm/--ipec/documents/publication/wcms_617830.pdf

¹⁷ <https://sustainabledevelopment.un.org/sdg4>

¹⁸ http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

through the composition of a Coordination Council, six working groups, and a work plan for implementing SDG tasks.¹⁹

e. Key Stakeholders and Development Partners' Support

50. **Several international organizations and development partners support Uzbekistan's education system in different ways.**²⁰ These include UN organizations and international financing institutions. Their contributions stem from assessing needs and gaps from the previous education sector analysis and those identified by the Common Country Assessment. Objectives for support undertaken by the UN are threefold and include:

- Supporting growth and opportunities for preschool, adult, higher, and lifelong education;
- Supporting the goal of improving quality of education in all sectors; and
- Conducting an analysis of strategies and developing new evidence-based strategies.

51. **UN organizations' support includes assistance to increase demand for early childhood and care programs and strengthening community involvement in school management.** These organizations have been also supporting the GoU in the collection of evidence to develop effective, integrated and more accessible alternative quality early childhood education programs. Regarding GSE, these organizations are assisting the GoU in the development of a monitoring and evaluation framework for informed policy analysis. These UN organizations are also providing support to the GoU in developing the ESP for 2018–2022, in line with the new and emerging government priorities. Table 3 summarizes the objectives of UN organizations' assistance framework for Uzbekistan for 2018–20.

Table 3. Objectives of UN's Assistance Framework 2018-2020

Objective	UN Organizations
Output 1: Improved national gender-sensitive education policies and plans to advance equitable access to quality Early Childhood Care and Education, general secondary, and higher education through a system-wide, lifelong learning approach.	United Nations Children's Fund (UNICEF) and United Nations Educational, Scientific and Cultural Organization (UNESCO)
Output 2: National capacities strengthened to deliver and measure learning in line with competency-based curriculum and the concept of the global citizenship education.	UNICEF, United Nations Population Fund (UNFPA), United Nations Office on Drugs and Crime (UNODC)
Output 3: By the end of 2020, national teacher/teaching workforce policies enhanced, and teacher training programs improved in line with the national quality education framework.	UNICEF, International Labour Organization (ILO), UNFPA, UNODC
Output 4: By the end of 2020, local education authorities and communities are equipped with tools and skills to encourage demand for quality basic education and preschool services.	UNICEF

52. **In addition to the UN organizations, various other local and international organizations provide support to the education sector in Uzbekistan.** These include aid from the governments of South Korea, Japan, the United States, and others.

¹⁹ Order of the Cabinet of Ministers of the Republic of Uzbekistan, dated February 15, 2016 (No. 111-F).

²⁰ Uzbekistan United Nations Development Assistance Framework 2016–2020 & Joint Work Plan for the Years 2018–2020.

Table 4. Development Partners' Support to Education in Uzbekistan

Level of Education	Partners
Preschool Education	<p>The World Bank Group. Finances analytical work and lending in preschool education.</p> <p>Global Partnership for Education (GPE). Finances preschool education and analytical work.</p> <p>Puchon University (South Korea). The decision made by the President of Uzbekistan on July 2, 2018, approved the establishment of a branch of the University of Puchon in Tashkent City. The university will train personnel in the field of preschool education, architecture, design, and other popular areas of education, as well as conduct research in these areas. The training will be conducted on the basis of the curricula and programs of the University of Puchon in Uzbek, Russian, and English languages, on full-time, part-time, and evening forms, on a fee basis, including education grants provided by potential employers, as well as through charitable donations, allocated for the education of young people mainly from the poorest regions of the country.²¹</p> <p>Japan International Cooperation Agency (JICA). Volunteers are working in Tashkent and Nukus preschools.²²</p>
General Secondary Education	<p>The World Bank Group. Finances analytical work and lending in general secondary education.</p> <p>GPE. Finances general secondary education and analytical work.</p> <p>“Korea Education Center” under the Embassy of South Korea. This education center delivers Korean language teacher training courses and other cultural and scientific events.²³</p> <p>Korea Education Research and Information Service. Based on an agreement signed by the Multimedia Center for Developing Education Programs under the MoPE, this research service provides exchange programs on information technologies (IT) development in education.²⁴</p> <p>British Council. Active from October 1993, the British Council provides training of English teachers and promotes interactive methods in education.²⁵</p> <p>Goethe Institute. Located in Tashkent City, the Goethe Institute provides training of German language teachers and promotes interactive methods in education. The institute also administers international standard language testing.²⁶</p>

²¹ <http://www.uzedu.uz/Xtv/BarchasiPage/65?tp=129>

²² Ibid.

²³ <http://www.uzedu.uz/Xtv/BarchasiPage/65?tp=129>

²⁴ Ibid.

²⁵ <https://www.britishcouncil.uz/en>.

²⁶ <https://www.goethe.de/ins/uz/ru/index.html>.

	<p>JICA. Volunteers of JICA help to organize different events in general secondary schools, preschools, sport schools, music schools, and different cultural ceremonies.²⁷</p> <p>Korea International Cooperation Agency (KOICA). This agency has a number of volunteers working on teaching Korean language in different schools in Uzbekistan.²⁸</p>
Secondary Specialized Vocational Education	<p>The World Bank Group. Finances analytical work in secondary specialized vocational education.</p> <p>GPE. Finances analytical work in secondary specialized vocational education.</p> <p>The European Union. Plans to finance an investment project in secondary specialized vocational education.</p>
Higher Education	<p>The World Bank Group. Finances analytical work and lending in higher education.</p> <p>GPE. Finances analytical work in higher education.</p> <p>European Union-Funded Projects:</p> <p>Tempus. Initiatives include the introduction of a Master’s program in mechatronics, curriculum development programs for highway and road construction, strengthening career centers, and creating agrarian studies centers in Uzbekistan.²⁹</p> <p>Erasmus+. It finances exchange programs to applicants in Uzbekistan.³⁰</p>

B. Education System Financing

53. **Uzbekistan has one of the highest rates of public spending on education in the world. Over time, the GoU has invested a substantial share of its budget in education, more than that of other Commonwealth of Independent States (CIS) countries.** In 2017, the GoU spent 6.4 percent of its GDP on education, more than CIS countries such as Kazakhstan (2.8 percent of GDP), Tajikistan (5.2 percent), Belarus (5 percent), and Russia (3.8 percent). Moreover, given the wide scope of the recent education reforms in Uzbekistan, public spending on education is expected to increase to 7.4 percent of GDP in 2018 (NSC 2017b).³¹ Relative to other expenditures in the GoU’s budget, spending on public education has been

²⁷ <https://www.jica.go.jp/uzbekistan/english/office/index.html>.

²⁸ <http://www.koica.go.kr/>.

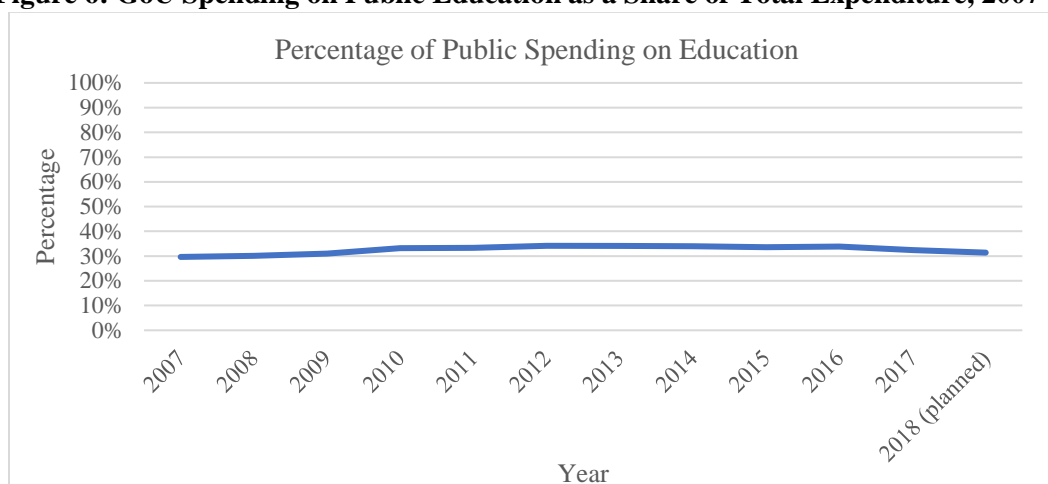
²⁹ <http://www.erasmusplus.uz/Information-about-the-projects/tempus/Tempus-4/projects/index.htm>.

³⁰ <http://www.erasmusplus.uz/about/index.htm>.

³¹ In absolute terms, the budget for the social sector increased from 12,162 billion Som (US\$2.24 billion) spent in 2015, to 15,979.6 billion Som (US\$2.94 billion) spent in 2017, to 19,504 billion Som (US\$3.6 billion) budgeted for 2018. Performance of the Government Budget for the Republic of Uzbekistan (2015) https://www.mf.uz/media/file/state-budget/1/ispolnenie_2015_godovoy.pdf.; Preliminary Performance of the Government Budget for the Republic of Uzbekistan (2017). <https://www.mf.uz/media/file/state-budget/1/2017.pdf> .; 2018

steady over the last 10 years. Approximately 32.4 percent of the government budget supported education in 2017, a figure that remained in the range of 30–34 percent in the past decade (Figure 6).³²

Figure 6: GoU Spending on Public Education as a Share of Total Expenditure, 2007–18



Source: MoF³³

54. **GoU spending on education is also higher than average government spending in the Europe and Central Asia (ECA) region and other OECD countries.** Uzbekistan’s allocation for education, which is expected to stay at approximately 31.4 percent of the government budget in 2018,³⁴ is higher than the average ECA spending on education and that of OECD countries, at approximately 11 percent and 13 percent of total government expenditure, respectively. Public spending on education in neighboring countries such as Kazakhstan and Russia is also significantly lower (13.9 percent and 11 percent of public spending, respectively).³⁵

55. **There are multiples possible explanations for such high public spending on education in Uzbekistan, compared to other countries in the region.** These explanations relate to the modalities of service delivery, very limited participation of private providers, and previously implemented policies on secondary specialized and higher education. Regarding modalities of service delivery, the full-day

Budget, Ministry of Finance of the Republic of Uzbekistan, https://www.mf.uz/media/file/state-budget/pub/byudjetnoe_poslanie.pdf.

³² 2018 Budget, Ministry of Finance of the Republic of Uzbekistan, https://www.mf.uz/media/file/state-budget/pub/byudjetnoe_poslanie.pdf; Preliminary Performance of the Government Budget for the Republic of Uzbekistan for 2017, <https://www.mf.uz/media/file/state-budget/1/2017.pdf>; Performance of the Government Budget for the Republic of Uzbekistan for: 2016, https://www.mf.uz/media/file/state-budget/1/godovoy_2016.pdf; (2015), https://www.mf.uz/media/file/state-budget/1/ispolnenie_2015_godovoy.pdf; 2014, https://www.mf.uz/media/file/state-budget/ispolnenie_gos_byudjeta-2014.pdf; 2013, <https://www.mf.uz/media/file/state-budget/1/2013-4.pdf>; 2012, <https://www.mf.uz/media/file/state-budget/1/2012.pdf>; 2011, <https://www.mf.uz/media/file/state-budget/1/2011.pdf>; 2010, <https://www.mf.uz/media/file/state-budget/2/2010.pdf>; 2009, <https://www.mf.uz/media/file/state-budget/1/2009.pdf>; 2008, <https://www.mf.uz/media/file/state-budget/1/2008.pdf>; and 2007, <https://www.mf.uz/media/file/state-budget/1/2007.pdf>.

³³ Data from MoF was collected between 20th of February and 19th of May of 2018 as part of the ESA. All future references to the MoF are cited as part of this

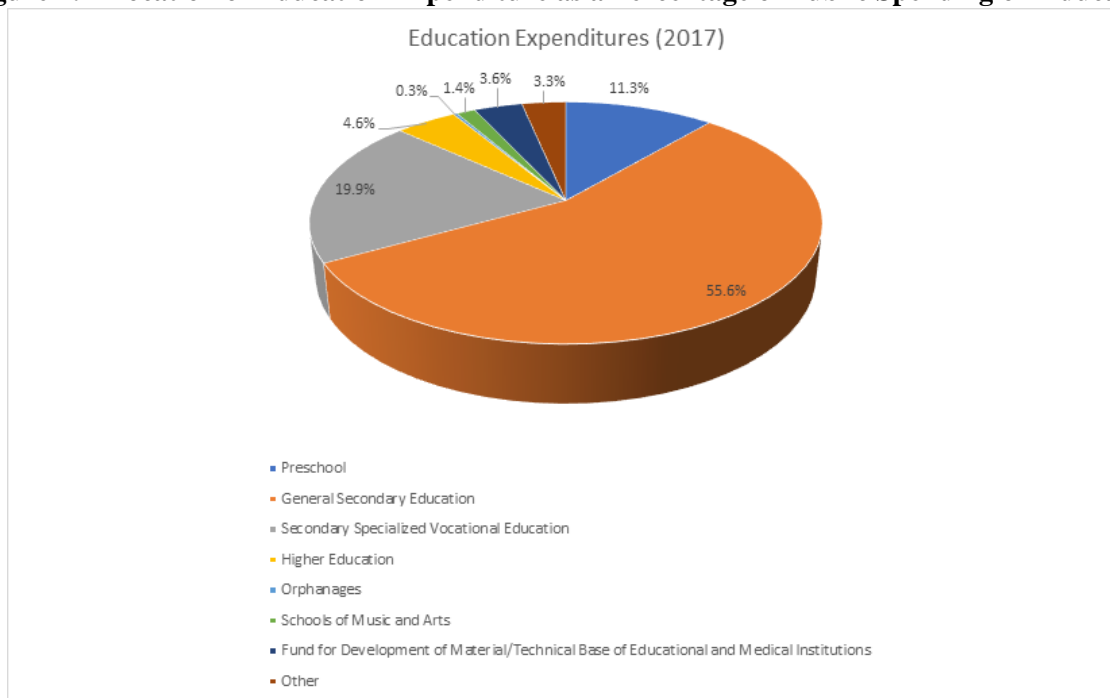
³⁴ 2018 Budget, Ministry of Finance of the Republic of Uzbekistan, https://www.mf.uz/media/file/state-budget/pub/byudjetnoe_poslanie.pdf; Preliminary Performance of the Government Budget for the Republic of Uzbekistan (2017), <https://www.mf.uz/media/file/state-budget/1/2017.pdf>.

³⁵ Government expenditure on education, total (% of government expenditure), <https://data.worldbank.org/indicator/SE.XPD.TOTL.GB.ZS>.

preschool model that was provided in Uzbekistan until the introduction of the half-day model in 2013 was very expensive and a clear barrier to access. Concerning private provision, there were very few private preschools, general secondary education schools and universities in Uzbekistan, until 2017. This situation changed only recently in preschool education with the ongoing reforms to expand service provision, as mentioned in the first sub-section of this chapter. On previously implemented policies, vocational education and training was the single or the most important path for more than 1.3 million students until 2017, which made Uzbekistan’s vocational system extremely large and expensive (a system with more than 120,000 teachers and 1,400 vocational colleges). However, it is important to note that given the barriers to higher education related to the quotas, such large (and expensive) vocational education system was fundamental for many students until the start of the reforms in 2017.

56. **Among subsectors of the system, the largest portion of public spending on education is dedicated to GSE.** In 2017, of the total budget of US\$2.94 billion (around 15,979.6 billion Som) spent on education, the GoU contributed the most to GSE (around 56 percent of the total budget), followed by SSVE (around 20 percent), preschool education (around 11 percent), and higher education (around 5 percent).³⁶ Spending on orphanages, schools of music and art, funding for development of education and medical institutions, and other spending on GSE and teacher training accounted for the remaining approximately 8 percent (Figure 7). This substantially high spending on GSE is mainly explained by the total numbers of enrolled students, teachers, and school facilities.

Figure 7: Allocation of Education Expenditure as a Percentage of Public Spending on Education



Source: MoF 2017.

³⁶ Government spending on education also supported orphanages – 0.3 percent, schools of music and humanities – 1.4 percent, and the fund for development of medical institutions – 4 percent. Additionally, 538.8 billion Som (US\$68 million) (3.3 percent of spending on education) is unaccounted for in the source. Performance of the Government Budget for the Republic of Uzbekistan (2017) <https://www.mf.uz/media/file/state-budget/1/2017.pdf>.

57. While the GoU has invested significant resources on education, it is unclear whether and to what extent these investments have impacted learning.

Information on student learning outcomes, whether in the form of school grades or scores from standardized assessments (either from examinations, national assessments, or international assessments) was not made available for the preparation of this report or does not exist. However, the country is taking concrete steps to reform its student assessment system to be able to collect reliable

information on student learning outcomes on a regular basis, including through standardized assessments. For example, Uzbekistan is joining the Programme for International Student Assessment (PISA) 2021, as well as building the country's capacity to implement valid and reliable assessments of student learning outcomes at national and international level.

Existing data do not allow evaluation of whether high spending on education impacts learning to any extent in Uzbekistan, though the GoU is strongly committed to addressing this issue in the short and medium term.

Preschool Education

58. Although GoU spending on preschool education is in line with the OECD average and neighboring countries, preschool enrollment is very low, suggesting inefficiencies in public spending at this level.

Specifically, spending on preschool education in Uzbekistan accounts for 0.72 percent of GDP, in line with the OECD average of 0.70 percent.³⁷

However, enrollment in preschool education is very low at 29.0 percent compared to the OECD average of 83.8 percent³⁸; it is also low compared to non-OECD countries such as Kazakhstan, which spends approximately 0.6 percent of GDP on preschool education and has a 60 percent enrollment rate,³⁹ and Russia, which spends approximately 1.0 percent of GDP on preschool education and has an enrollment rate of approximately 85 percent.⁴⁰

Uzbekistan invests as much in preschool education as OECD countries, but enrolls almost three times fewer children in its preschools

59. Preschool education is not free and direct costs of preschools pose a barrier to enrollment for one in four families.⁴¹ To help families address this challenge, full-day and half-day groups have been offered and access has expanded since 2015. A parental contribution for public preschool education is basically used to cover the cost of meals.⁴² This fee ranges between US\$1.2 and US\$2.9 per child per month

³⁷ PF3.1: Public spending on childcare and early education.

https://www.oecd.org/els/soc/PF3_1_Public_spending_on_childcare_and_early_education.pdf.

³⁸ PF3.2: Enrollment in childcare and preschool.

https://www.oecd.org/els/soc/PF3_2_Enrollment_childcare_preschool.pdf.

³⁹ OECD Early Childhood Education and Care Policy Review 2017, <http://www.oecd.org/education/school/Early-Childhood-Education-and-Care-Policy-Review-Kazakhstan.pdf>.

⁴⁰ Russia: Education at a Glance 2017. <http://gpseducation.oecd.org/Content/EAGCountryNotes/RUS.pdf>.

⁴¹ MPSE Survey (2017).

⁴² Starting in January 1, 2018, the amount that parents have to pay for their children to be in preschool changed. Separate fees were established for Tashkent, rayon centers, and oblast centers. Different fees also exist for regional centers and rural areas. The fee for a 9-hour group in a rural area was reduced by 33 percent, in regional centers by 5 percent, in cities that are subordinate to oblasts by 9 percent, and in regional centers by 1 percent. For certain locations (Karakalpakstan and Khorezmem oblasts; Tamdinkii Ushkudskii, Kanimehskii, and Nuratinskii rayons; cities in the Zarafshana Navoiiskii oblast) the fee is one-half of the specified amount. In Tashkent, the required size of the contribution increased due to an increase in the price of food products.

<https://www.gazeta.uz/ru/2018/01/09/kindergarten>.

in the half-day group, and between US\$6 and US\$28 per child per month in the full-day group, according to data and the exchange rate from July 2018.⁴³

60. Salaries of preschool education teachers vary depending on teachers' qualifications and school location.⁴⁴

Teachers receive anywhere from US\$78 (around 610.16 thousand Som) per month – the salary for teacher assistants – to US\$175 (around 1,375.37 thousand Som) for highly qualified teachers working in certain regions of the country. A new Presidential Decree⁴⁵ determines an increase in preschool teachers' salaries by 30 percent.^{46, 47} Also

beginning on September 1, 2018, salaries of preschool teachers of children aged 5–6/7 (the last year of preschool education) were determined to be the same as those of teachers of GSE schools. At the same time, salaries of teacher assistants increased by 20 percent, and of preschool directors by 10 percent.

Recent changes in regulations substantially increased the salaries of preschool education teachers, which will lead to overall higher expenditures.

General Secondary Education

61. The GoU is investing heavily to ensure that the transition to the 11-year GSE cycle is successful.

To support this change in 2018, US\$5.6 million was allocated from the government budget for the production of textbooks for grade 11, as well as US\$2.5 million for equipment for 489 classrooms for applied studies. The budget for GSE in 2018 is financed partly by redirecting resources from professional colleges and academic lyceums that comprised the SSVE system (see section on structure above), as well as from income generated from investments (made in commercial banks) by the Book Fund and the Library Fund.⁴⁸ In 2017, approximately US\$51 million was provided for the building and reconstruction of schools, from US\$41 million in 2016.^{49 50}

⁴³ Fees parents are required to pay for their children's attendance in public preschool institutions for the year 2018. https://drive.google.com/file/d/1JSexOGw1TsXAO_-JZg7HJ3rOEDW7U1Jw/view Fees depend on the location of public preschool, the number of hours the child attends preschool per day (4–5 hours, 9 hours, 10.5 hours, 12 hours, 24 hours), the number of days the child attends preschool per week (5 or 6 days), the number of children in the family attending preschool (one, or more than one). -> for half-day groups (4–5 hours), there is no meal.

⁴⁴ Data provided by MPSE to the World Bank team.

⁴⁵ Based on Presidential Decree of February 28, 2018, "On measures to improve the terms of payment for certain categories of employees of state preschool educational institutions," beginning on March 1, 2018.

⁴⁶ Beginning on September 1, 2018, the starting salary for preschool teachers will be 1,302.9 thousand Som (US\$166), and preschool teacher assistants receive 701.7 thousand Som (US\$89).

⁴⁷ Salary information on public sector employees: <https://www.mf.uz/news/2680.html>.

⁴⁸ It is also planned that 334 GSE schools will benefit from reconstruction and repair works (in the amount of 723.7 billion Som (US\$92 million)) under the fund that focuses on development of the material-technical base of education and medical institutions. 2018 Budget, Ministry of Finance of the Republic of Uzbekistan, https://www.mf.uz/media/file/state-budget/pub/byudjetnoe_poslanie.pdf.

⁴⁹ Main indicators of socioeconomic development of the Republic of Uzbekistan for 2017, <https://stat.uz/uploads/doklad/2017/doklad2017-ru-yanvar-dekabr.pdf>.

⁵⁰ Main indicators of socioeconomic development of the Republic of Uzbekistan for 2016, <https://stat.uz/uploads/doklad/2016/doklad-2016-yanvar-dekabr-ru.pdf>.

62. **However, efficiency in spending on GSE seems to be suboptimal given gross enrollment rates (GERs).**

Expenditure on GSE (as a percentage of GDP) is 3.57 percent, which is very high compared to other countries. For example, Kazakhstan spends 2.04 percent of GDP and maintains a GER of 113 percent; Austria spends 2.2 percent of GDP and has a GER of 100 percent; and Finland spends approximately 2.7 percent of GDP and maintains a GER of 152 percent.⁵¹ While Uzbekistan spends more on GSE as a percentage of GDP, its GER in GSE is slightly lower at 97 percent. Despite this, significantly fewer students continue

to higher education. Enrollment in higher education is nearly 10 percent in Uzbekistan, compared to 50 percent in Kazakhstan, 83 percent in Austria, and 87 percent in Finland.⁵²

Inefficiencies are also noticeable in the flow of GSE students toward higher education: Uzbekistan spends more than Finland, but its enrollment of students in higher education is almost 10 times smaller than in this high-performing Nordic country.

Secondary Specialized Vocational Education

63. **Spending on SSVE is also high in comparison with European Union (EU) and OECD countries.** Uzbekistan's spending on SSVE in 2017 accounted for approximately 1.27 percent of GDP, higher than the EU average (at less than 1.0 percent of GDP),⁵³ and nearly double the spending in OECD countries (at approximately 0.6 percent of GDP).⁵⁴ Until the transition to an 11-year GSE cycle, SSVE was part of the compulsory cycle, thus enrollment was significantly higher than that of other countries without a similar requirement. In this perspective, spending on SSVE was efficient.

64. **It is worth noting that in addition to receiving public funding, vocational colleges can generate revenue by renting facilities, providing adult training, and selling goods and services produced in workshops of facilities.** Resources, such as equipment, training materials, and training opportunities for teachers, staff, and students, are also provided to vocational colleges by the SSVE Regional Departments and by firms that partner with these colleges. Vocational colleges have the autonomy to increase teacher salaries by up to 40 percent for 6 to 12 months if their students achieve certain academic recognition, such as succeeding in competitions like Olympiads.

65. **Data on students and teachers show potential inefficiencies in Uzbekistan's SSVE system.** According to data from the 2017/18 academic year, the average student–teacher ratio in Uzbekistan's vocational colleges was approximately 10:1, which is lower than the averages for countries such as the United Kingdom (16:1), the Netherlands (18:1), Finland (17:1), and Romania (14:1). Moreover, this ratio varies across regions, with the lowest ratio observed in Navoi Region (nearly 7:1), and the highest in Tashkent Region (11:1) (Figure 8). Data show that Uzbekistan has many vocational colleges with few enrolled students.

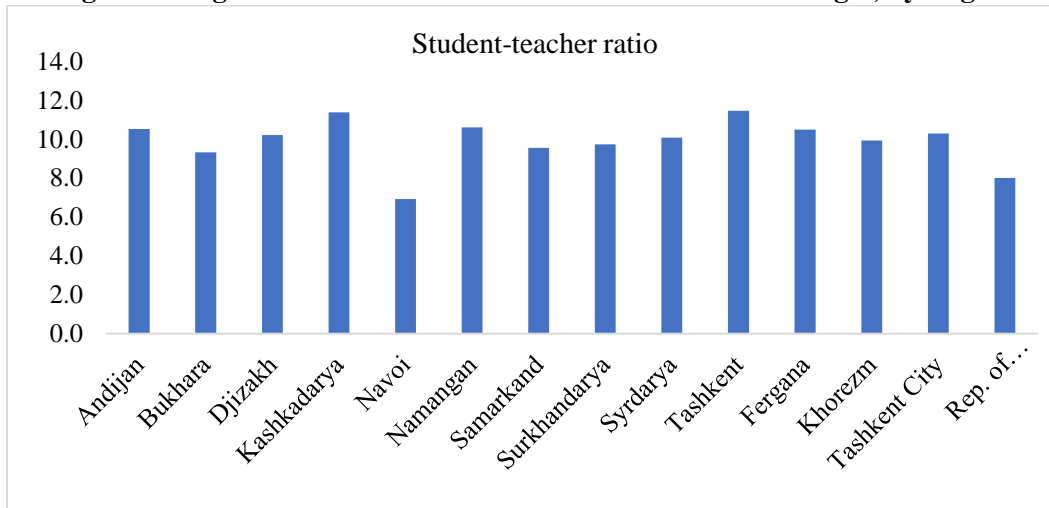
⁵¹ World Bank data, <https://data.worldbank.org/indicator/SE.SEC.ENRR?locations=RU-KZ&view=chart>; UIS Data, <http://data.uis.unesco.org/index.aspx?queryid=181>.

⁵² World Bank data, <https://data.worldbank.org/indicator/SE.TER.ENRR?locations=KZ-AT-FI>.

⁵³ How big is the investment in VET? <http://www.cedefop.europa.eu/en/publications-and-resources/statistics-and-indicators/statistics-and-graphs/16-how-big-investment>.

⁵⁴ OECD Education at a Glance 2017 https://www.hm.ee/sites/default/files/eag2017_eng.pdf.

Figure 8: Regional Student–Teacher Ratio in Vocational Colleges, by Region



Source: MHSSE 2017/18.⁵⁵

Higher Education

66. Uzbekistan's spending on higher education – at 5 percent of the education budget – is one of the lowest in the world. Only two other countries – East Timor (4.1 percent) and the Kyrgyz Republic (4.6 percent) – allocate less of their education budget to higher education, according to data analyzed for the preparation of this report.

Most countries spend approximately 20 percent of their education budget on higher education, with some countries spending significantly more, such as Austria (35.5 percent). Uzbekistan spends 0.3 percent of GDP on higher education, and its enrollment rate is very low at 9 percent. Other countries with relatively low rates of spending on higher education, such as Kazakhstan (with spending of 0.35 percent of GDP) and Belarus and Russia (both with spending of 0.8 percent of GDP), have enrollment rates of 50 percent, 87 percent, and 82 percent, respectively. These figures suggest that not only does Uzbekistan spend limited resources on higher education, but its spending corresponds to lower enrollment rates in HEIs compared with other low-spending countries.

Spending on higher education is very low, partially explained by the also very low number of enrolled students (less than 10 percent enrollment rate).

67. A large portion of students in higher education study on paid contracts, and the introduction of “super contracts” may increase private income for HEIs. Approximately 27 percent of students attend HEIs on grants financed by the GoU, and around 73 percent study on paid contracts. For the 2017/18 academic year, “super contracts” were introduced in the system. Under these super contracts, 71 universities received an additional US\$61.6 million (486.5 billion Som) by admitting additional students who, despite not obtaining the minimum regular admission scores, were allowed to enroll by paying a larger tuition fee in the first year of study.⁵⁶ These super contracts’ fees are paid in the first year of study, and subsequently the fee for attendance is that of regular contracts, as established by the MHSSE. The fees charged for super

⁵⁵ Data from MHSSE was collected between 20th of February and 19th of May of 2018 as part of the ESA. All future references to the MHSSE are cited as part of this

⁵⁶ In alignment with the program of complex initiatives to strengthen the infrastructure of research institutions and the development of innovation between 2017–2020, 26.5 billion Som (US\$3.4 million) will be provided for initiation of reconstruction and capital refurbishment of eight research institutions in 2018. This work will also benefit from the fund that supports the development of technical research in the amount of US\$7.6 million.

contracts range from US\$10,564 to US\$35,216.⁵⁷ According to Protocol N° 5 of the State Admission Commission meeting of August 16, 2018, another level of super contracts, which requires double the payment of the original super contracts, came into effect for the 2018/19 academic year; these are applicable for students who received a score that was no more than 30 percent of that required for admission through the entrance exams. The fees for these super contracts are very high. Information on the number of students studying on the basis of super contracts is not yet available. At the same time, while it is certain that the provision of such super contracts may provide an influx of private funding for HEIs, it is unclear what mechanisms are in place to ensure that students and families do not go into significant debt or that the quality of education in universities will not be negatively affected given the level of knowledge of students on super contracts.

68. Some recent notable initiatives show the GoU’s commitment to improve the higher education system, despite the mentioned low spending on this subsector. In 2017, the World Bank and the GoU signed a US\$42.2 million Credit Agreement to strengthen Uzbekistan higher education system’s managerial capacity, and to improve both the labor market relevance and learning environment of HEIs.⁵⁸ In support of the Program for the Systematic Development of the Higher Education System in 2017–2021, the GoU increased its budget for the material and technical base of HEIs by 1.5 times.⁵⁹ In August 2018, the GoU also developed a new entrance examination system to be overseen by the STC. Students can now take exams for most subjects in training centers over the course of 15 days, using multiple-choice questions that will be electronically scanned so that exam scores can be reported immediately to students. Admission decisions will be reported within one month after the completion of each exam.

C. Enrollment

Preschool Education

69. At approximately 29 percent, the preschool enrollment rate for children aged 3–7 is extremely low compared to other countries.⁶⁰ The total number of children aged 3–7 enrolled in preschools increased from nearly 554,000 to 908,000 from 2007 to 2017. However, the preschool population also increased during this time, and, in reality, the preschool enrollment rate increased only from 20 percent in 2007 to approximately 29 percent in 2017. Uzbekistan’s net preschool enrollment rate is very low compared to countries such as Kazakhstan (60 percent), Finland (79 percent), Moldova (82 percent), Russia (85 percent), Japan (90 percent), and Brazil (82 percent).⁶¹ Uzbekistan’s low preschool enrollment rate is also in stark contrast with its nearly universal enrollment in GSE, which is compulsory (see next section).

Access to preschool education is one of the major challenges in Uzbekistan’s education system. Enrollment rates were below 30 percent over the past 10 years, with much lower rates in rural areas, and discrepancies across regions.

⁵⁷ The enrollment within super contracts has not been specified.

⁵⁸ Project Appraisal Document on a Proposed Credit in the Amount of USD 42.2 Million to the Republic of Uzbekistan for the Modernizing Higher Education Project (P128516).

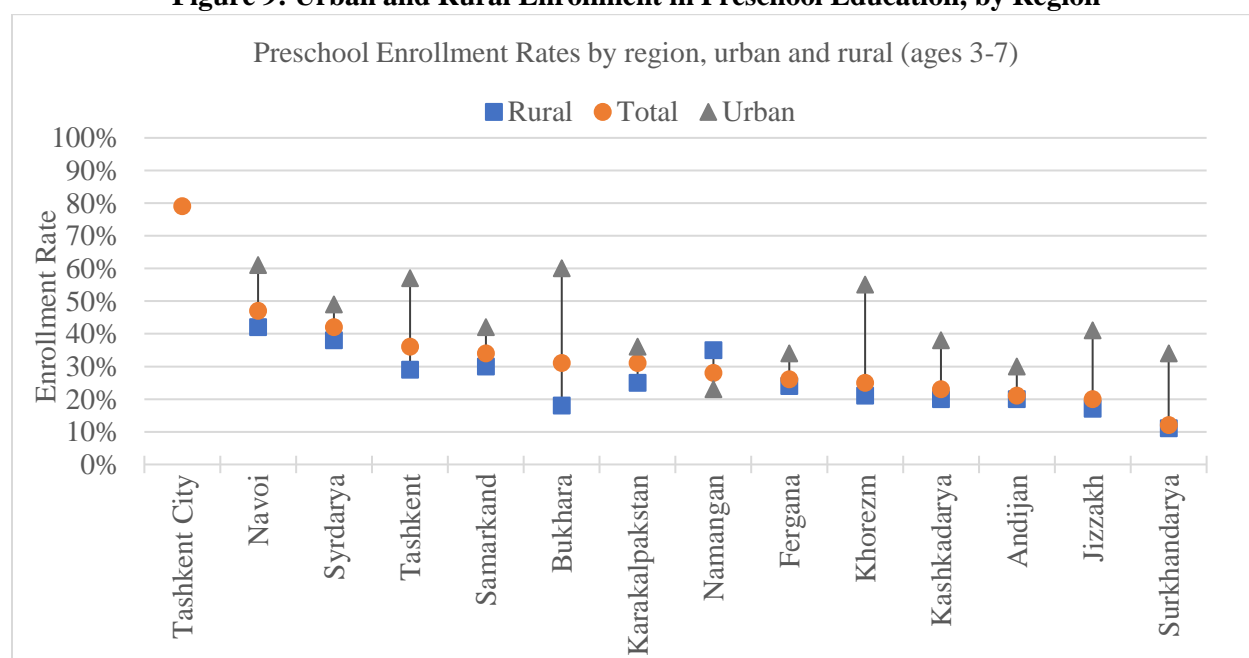
⁵⁹ 2018 Budget, Ministry of Finance of the Republic of Uzbekistan, https://www.mf.uz/media/file/state-budget/pub/byudjetnoe_poslanie.pdf.

⁶⁰ In Uzbekistan, children can enter preschools at the age of 3. Entrance to grade 1 of GSE takes place at the age of 7, but parents can choose to send their 6-year-old children to grade 1 subject to their readiness.

⁶¹ NSC (2017c) for 2007 data and MPSE (2017) for 2017 data from Uzbekistan. Enrollment figures include both public and nonpublic preschools. Comparator country data from UIS (2018).

70. **The preschool enrollment rate in urban areas is approximately 46 percent, compared to 23 percent in rural areas, but substantial variation arises between regions.** These are average figures for 2018. In Tashkent City, almost 80 percent of children are enrolled in preschool, but this is an outlier. Excluding Tashkent City, total enrollment rates range from 47 percent in Navoi to as low as 12 percent in Surkhandarya. The variation in enrollment between urban and rural areas across regions is reflected in Figure 9. Overall, the geographical composition of enrollments has been shifting toward urban areas. Children enrolled in preschools located in rural areas decreased from 36 percent to 30 percent of total preschool enrollment between 2010 and 2016. It is worth mentioning that the overall population trend is also moving toward urbanization: the share of urban population increased from 37 percent to 51 percent between 2010 and 2017.⁶²

Figure 9: Urban and Rural Enrollment in Preschool Education, by Region



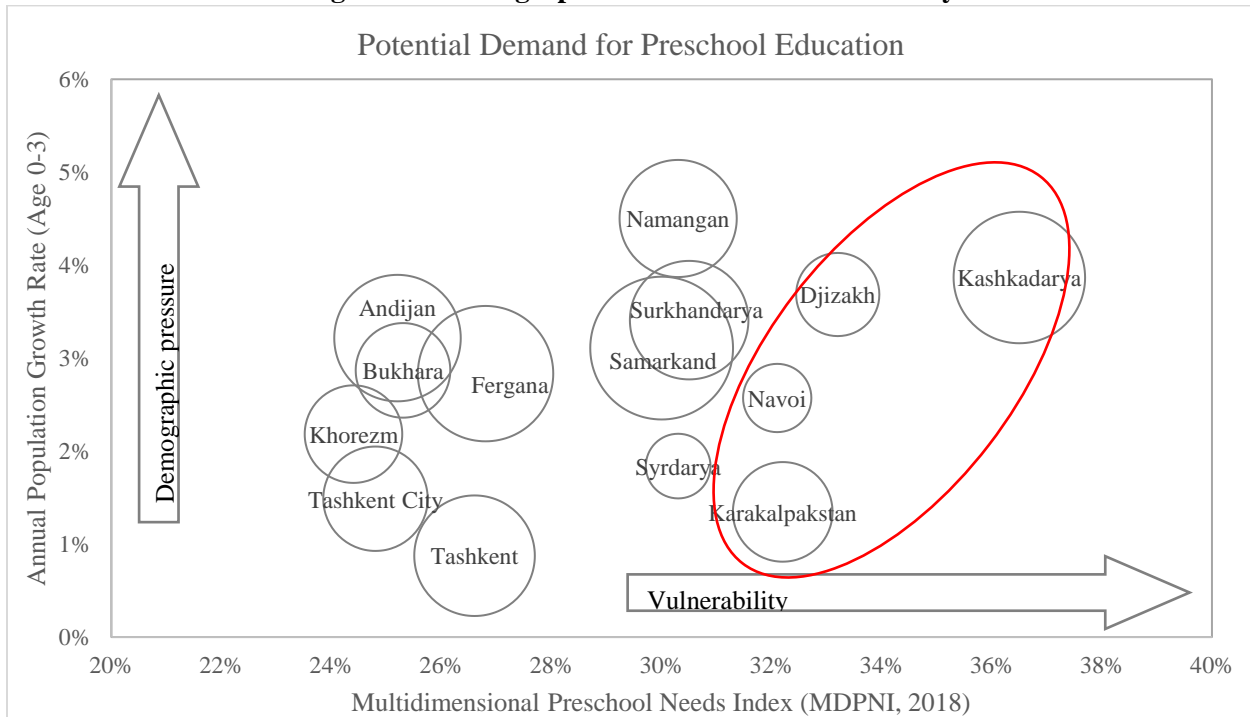
Source: MPSE 2018.⁶³

71. **Low enrollment in regions with a higher degree of vulnerability is particularly problematic, given that these regions also have high population growth rates.** Three out of the five most vulnerable regions of the country— Kashkadarya, Djizzak, and Surkhandarya—are among the four regions with the lowest enrollment rates in Uzbekistan (Figure 9). This fact means that a large number of vulnerable children are not benefiting from early stimulation and learning. This finding is worrisome given the strong evidence on the returns to preschool education, and the situation is further complicated by demographic pressure. In Kashkadarya, for example, the population group aged 0–3 grew by 12 percent between 2013 and 2016, equivalent to 4 percent growth per year (NSC 2018). Thus, while enrollment is currently very low, the preschool-age population has grown over time. High demographic pressure and vulnerability indicate that these lagging regions require targeted attention (Figure 10).

⁶² World Bank (2013) for 2010 data; NSC (2017d) and (2017a) for 2016 and 2017 data, respectively.

⁶³ Data from MPSE was collected between 20th of February and 19th of May of 2018 as part of the ESA. All future references to the MPSE are cited as part of this

Figure 10: Demographic Pressure and Vulnerability



Source: NSC 2018.

Note: Size of circles represents current demand, measured as the population aged 4–7.

72. **Currently, preschool education is almost entirely provided in public preschools. In the 2017/18 academic year, approximately only 2 percent of enrolled children aged 3–7 attended nonpublic preschools.** About 250 nonpublic preschool education institutions were open in Uzbekistan in the 2017/18 academic year, the majority of which were in Tashkent City. These preschools enrolled approximately 13,000 children, or 2 percent of the total number of children enrolled in preschool institutions in the country (MPSE 2018). With the current reforms aimed at expanding service provision in partnership with the private sector, this situation is expected to change substantially starting in the 2018/19 academic year.

73. **As mentioned above, the costs of preschool education dampen demand for services at this level.** According to a survey of 2,000 families carried out by the MPSE in 2017, the “high costs of education” were mentioned as the biggest barrier to enrollment by 25 percent of parents. Families who wish to enroll their children in public preschools must pay fees (around US\$6 to US\$28 per child per month in full-day groups),⁶⁴ mostly to cover the costs of meals. The fees charged by nonpublic preschool education institutions are paid by families and can range from US\$175 to US\$300 per child per month, according to data from 2018 collected for the preparation of this report. Preschools can provide optional fee-based services to children, such as foreign language classes, technology training, special sports, or art lessons.

⁶⁴ The fees vary based on the location of public preschools.

74. The introduction of a less costly half-day preschool education model in rural areas of Uzbekistan helped increase enrollment.

Prior to 2013, public preschool education in the country was mostly delivered through a costly full-day model. In recognition of the challenges associated with expanding enrollment through this full-day model of service provision, the GoU, the World Bank, and the GPE designed and launched the Improving Preprimary and General Secondary Education Project, with funds from a US\$49 million GPE grant. Data from the implementation of this project show that enrollment in rural preschools increased from 8.5 percent to 13.4 percent from 2013 to 2017 because of the introduction of a half-day model of service provision, whose highest monthly per child fee is US\$2.9 in rural areas of the country, compared with US\$28 for the full-day model. In other words, a decrease in the direct cost of preschool education led to an increase in access in rural Uzbekistan, which shows that direct cost hinders access. While seemingly low, the cost of the half-day model may be still a barrier for families from disadvantaged backgrounds or with a high number of preschool-age children.

The introduction of a low-cost (half-day) model of service provision contributed to an increase of more than 50 percent in the enrollment rate in rural areas.

75. Poor quality of infrastructure and lack of perceived value of preschool education are additional barriers to access to education in early years. The MPSE survey of 2,000 families also highlighted inadequate preschool infrastructure as a major factor limiting demand for preschool. This finding is consistent with available data on the physical conditions of public preschools that shows, for instance, that about two-thirds of existing kindergartens in Kashkadarya Region do not have access to running water.⁶⁵ At the same time, many parents reported that they did not send their children to preschool because “children can be taken care of at home.” This can be interpreted as a perceived lack of value of preschool education, which may also suggest that cultural norms further limit access to education at early stages.

76. To address this key issue on low access, the GoU has prioritized investments in preschool education and demonstrated a strong commitment to change the current situation.

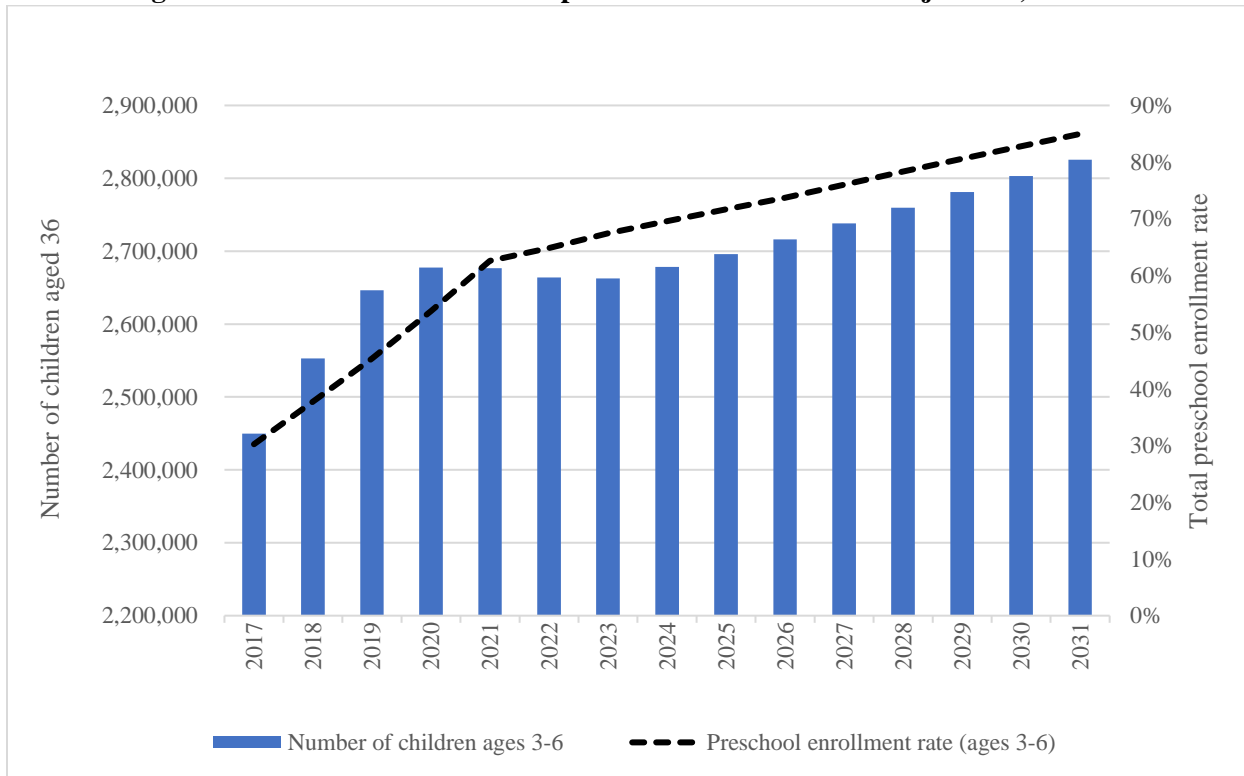
As previously mentioned, the GoU aims to achieve universal preschool enrollment for children aged 6–7 by 2021 through implementation of both supply- and demand-side measures. Some measures aim to stimulate the demand for preschool education by incentivizing disadvantaged families to enroll their children in preschool. The MPSE aims to increase the supply by expanding the network of public preschools and creating incentives to attract private providers through public–private partnerships. The approach for increasing access to preschool education nationwide includes a massive expansion in urban areas in partnership with private providers, while the GoU will continue to play the role of service provider in rural areas. According to MPSE projections, these efforts are expected to increase the total preschool enrollment rate (children aged 3–6) to approximately 63 percent by 2021 (Figure 11).⁶⁶

While access to preschool education is currently low, the GoU is reforming the system to massively expand service provision in partnership with the private sector in urban areas. Provision in rural areas will continue as a major responsibility of the state.

⁶⁵ MPSE data (April 2018).

⁶⁶ Ibid.

Figure 11: Preschool Education Population and Enrollment Projections, 2017–31

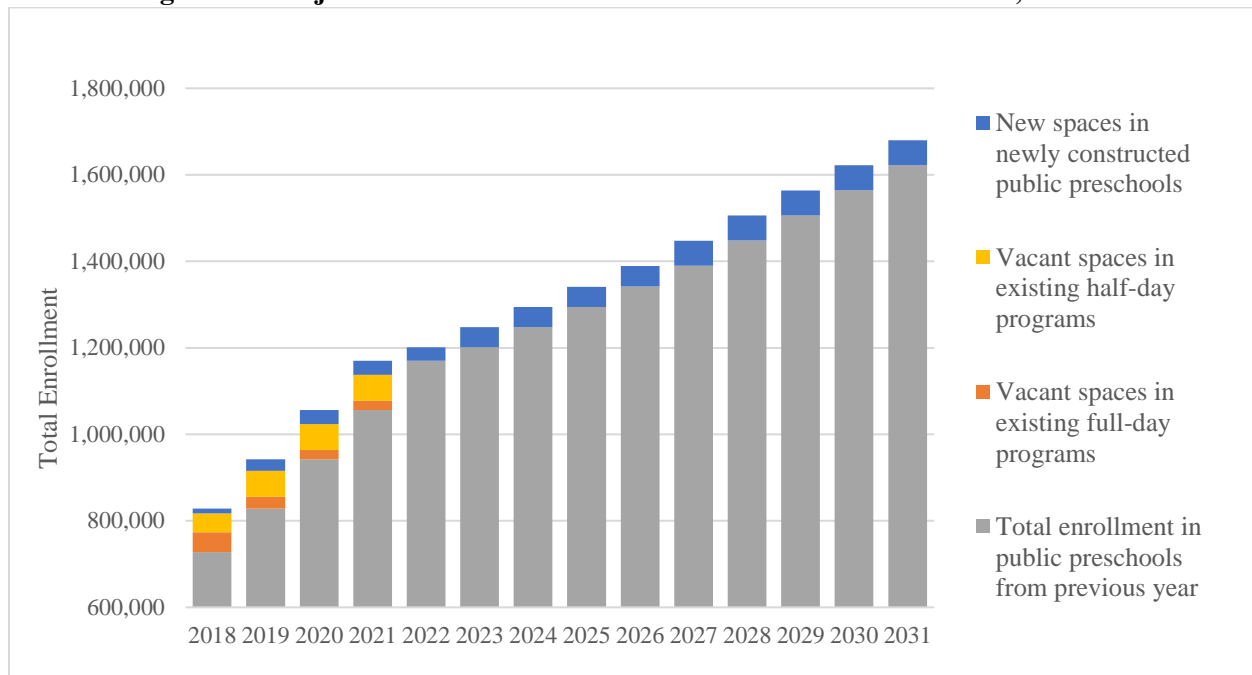


Source: MPSE 2018.

77. **Public-private partnerships would also allow for innovative performance-based financing, such as social impact bonds (SIBs), to finance the expansion of early childhood development services.** A recent addition to results-based financing models, SIBs are widely defined as a financing model under which investors provide upfront capital for services provision, and a government agency repays investors contingent on outcome achievement. They were created to make access to funding for social sectors easier. SIBs have grown in popularity as a mechanism for domestic and international development financing specifically to increase the volume and/or effectiveness of finance for social services. This model is attractive to governments because it is seen as a way of de-risking projects and saving taxpayer money by reducing wastage and freeing up fiscal space for other issues of social concern. SIBs provide a payment-by-results financing mechanism, tying outputs or outcomes to payments; instead of paying for services, governments pay for outcomes. The GoU is considering SIBs as a viable model for early childhood development expansion in the country. An investment project being prepared with the World Bank includes an early childhood development SIB in its scope of interventions.

78. **Over the next three to four years, preschool enrollment is expected to increase largely through filling vacant spaces in existing half-day and full-day groups that are being delivered in public preschools, while construction of new preschools will support greater enrollment over the longer term.** According to the MPSE, over 340,000 children could be enrolled in existing preschools over the coming four years. Nearly two-thirds of these children are expected to enroll in existing preschools by filling places in half-day groups, while the remaining children would be enrolled in full-day groups that currently have available space (Figure 12).

Figure 12: Projected Annual Increases in Public Preschool Enrollment, 2018–31



Source: MPSE 2018.

79. By stimulating private provision of preschool education, the GoU expects access to increase significantly over the next five to ten years. Particularly through implementation of public–private partnerships, the MPSE projects the number of nonpublic preschools to increase from about 250 to over 5,000 by 2022. In line with this, the MPSE projects a substantial increase in enrollment in nonpublic institutions, from about 13,000 to over 500,000 between 2017 and 2022. Although these targets may be ambitious, the GoU is clearly taking important steps to stimulate the provision of preschool education through nonpublic providers, which is likely to have a major impact on enrollment in coming years.

Over 5,000 private preschools are expected to enroll more than 500,000 children aged 3–6 by 2022, which may help to double the current national enrollment rate of around 30 percent.

General Secondary Education

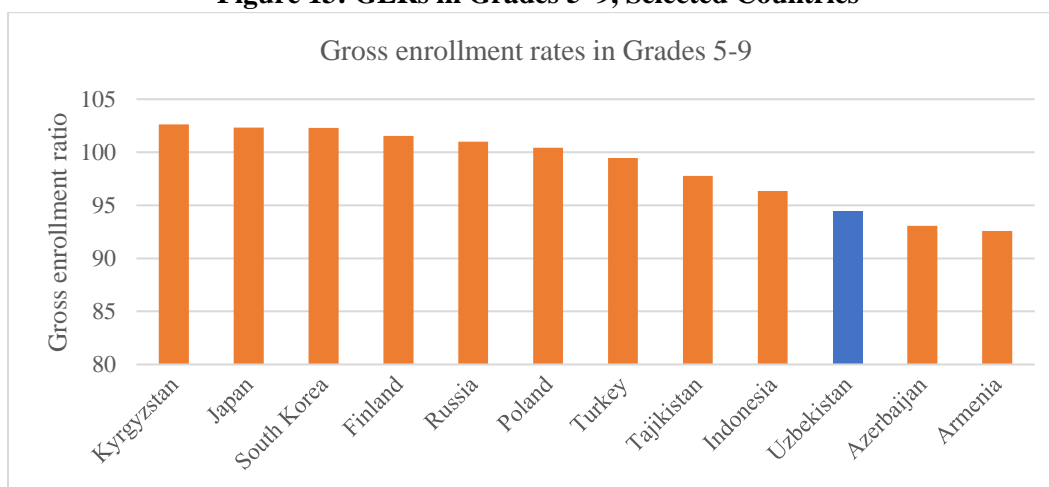
80. Starting with grade 1, GSE is free and compulsory, which explains its nearly universal enrollment. The GER in GSE in 2016/17—the last academic year for which both enrollment and population data are available—was 97.2 percent. For grades 1–4 (children aged 7–10), the GER was 100.2 percent, whereas for grades 5–9 (children aged 11–15), the GER was 94.4 percent. No data are available yet for enrollment in the recently expanded grades 10 and 11. These figures include enrollment in both public and nonpublic education institutions (see further information on enrollment in nonpublic institutions at the end of this section).

Access to GSE is nearly universal in Uzbekistan, with slightly higher enrollment rate in grades 1–4 compared to grades 5–9.

81. **Enrollment in GSE schools has remained high over time and has slightly increased since academic year 2015/16.** The GERs for grades 1–4 and grades 5–9 in GSE both increased by about 0.6–0.7 percentage points between the 2015/16 and 2016/17 academic years. Although this increase is minor, the overall GER in GSE remained high over the last decade according to the NSC.

82. **Access to GSE is comparable to that in other countries in Europe and Asia, although Uzbekistan’s GER for grades 5–9 (equivalent to lower secondary education in other countries) lags a bit behind.** According to the UNESCO Institute for Statistics (UIS), Uzbekistan’s GER for grades 1–4 in 2016/17 was equivalent to that of neighboring countries in Central Asia, as well as Japan, South Korea, and Finland. However, while the GER for grades 5–9 is high, it is lower than that of neighboring and other countries (Figure 13).

Figure 13: GERs in Grades 5–9, Selected Countries



Source: UNESCO UIS.

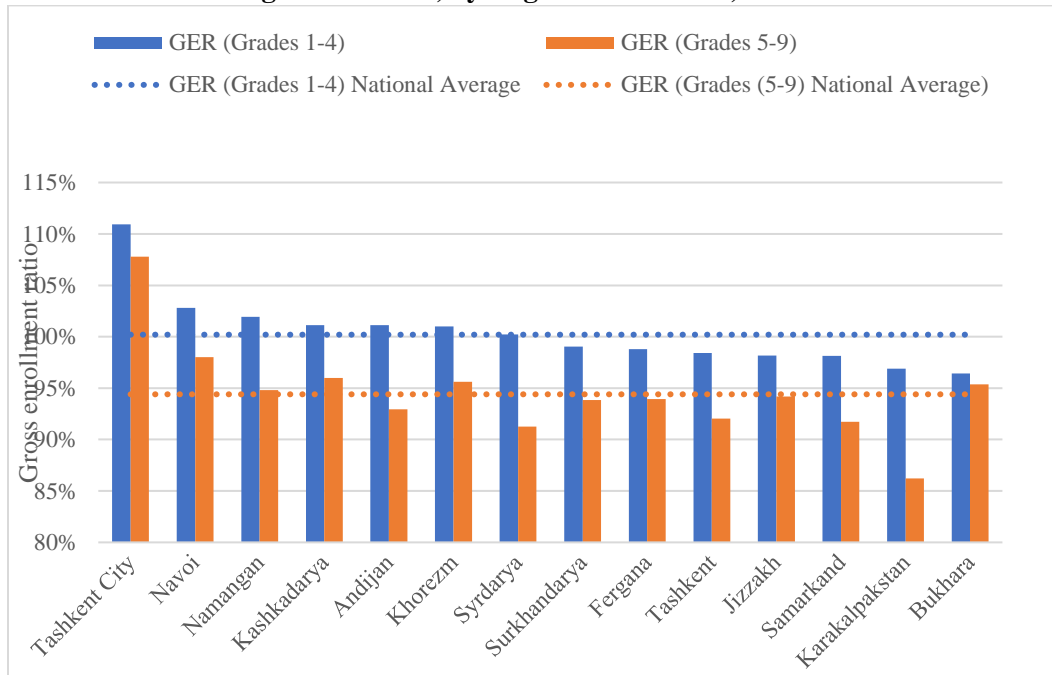
Note: Data for Japan, South Korea, and Turkey are from 2015; all other data are from 2016.

83. **Uzbekistan has achieved and maintained gender parity in terms of enrollment in GSE.** Enrollment rates in grades 1–9 for male and female students are nearly identical and have remained so over time according to the UNESCO UIS. Girls’ GER tends to be slightly lower than that of their male peers, although they are within 1 percentage point.

84. **The GER is high in all regions of the country, particularly for grades 1–4, with Tashkent City and the Republic of Karakalpakstan being outliers.** Tashkent City has a GER of 111 percent in grades 1–4, the highest of all regions (Figure 14). This phenomenon likely reflects the fact that many students in GSE in Tashkent City are not captured in national statistics as residents of Tashkent City. For example, in 2016, the NSC reported that 325,750 children aged 7–15 lived in Tashkent City, while 356,164 children were enrolled in GSE (grades 1–9) in the same year. This difference exceeds 30,000 students, only some of whom would be accounted for due to enrollment in private schools. On the other hand, the Republic of Karakalpakstan has the lowest GER for grades 5–9 (86 percent).

While access to GSE is high nationwide, the situation is uneven across regions, with the highest and lowest rates observed in Tashkent City and the Republic of Karakalpakstan, respectively.

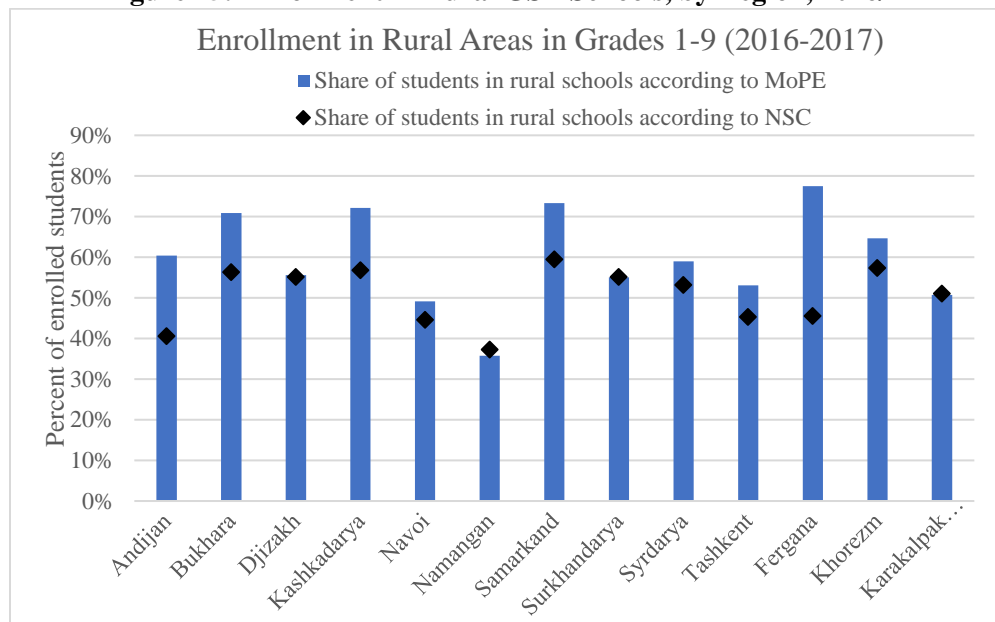
Figure 14: GER, by Region and Grades, 2016/17



Source: NSC.

85. **The rural–urban composition of enrollment in GSE varies considerably across regions.** Nationwide, about 58 percent of enrolled students are in rural schools, compared with 42 percent in urban schools. The distribution of enrolled students is skewed more toward rural areas than the overall population, which is spread almost evenly between urban and rural areas. However, considerable variation arises between regions. For example, in Bukhara, Samarkand, and Ferghana Regions, between 70–80 percent of enrolled students are in rural areas (Figure 15).

Figure 15: Enrollment in Rural GSE Schools, by Region, 2016/17



Source: MoPE.

86. **Nationwide, the majority of enrolled students attend public GSE institutions.** According to the NSC, in 2017 Uzbekistan had only 38 nonpublic GSE schools. These institutions enrolled around 5,300 students in the 2016/17 academic year, or less than 1 percent of all GSE students. The majority of these students are enrolled in Tashkent City.

Private provision of services in GSE basically does not exist.

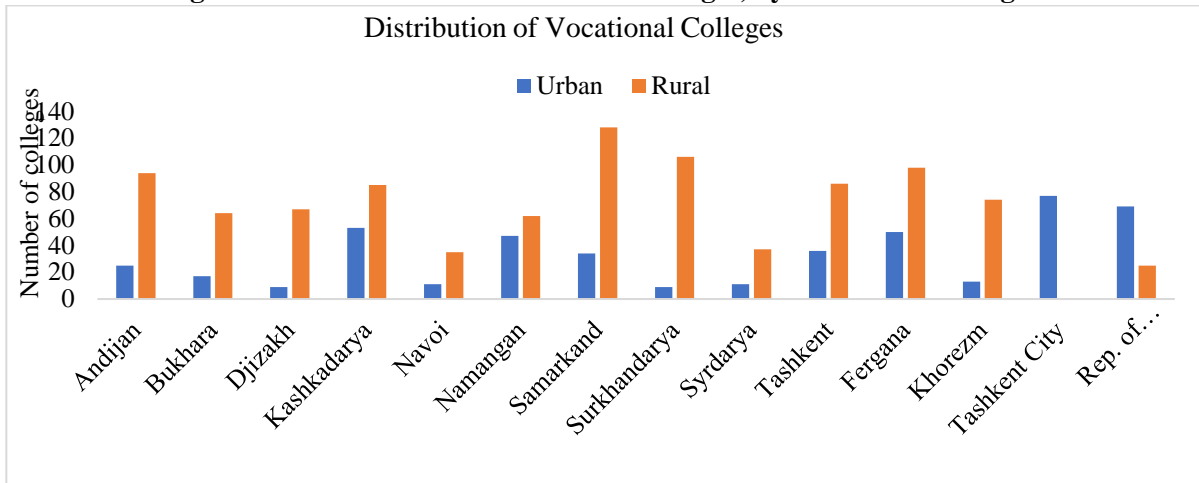
87. **Most students enrolled in GSE schools in Uzbekistan study in Uzbek, although Russian, Karakalpak, and other languages are used more intensively in some regions.** Nationwide, 86 percent of enrolled students in GSE attend schools that deliver instruction in Uzbek language. The major exceptions to this are in Tashkent City and Tashkent Region, where 45 percent and 13 percent of students, respectively, are taught in Russian. Additionally, in the Republic of Karakalpakstan, 35 percent of enrolled students study in the Karakalpak language, and another 10 percent study in other local languages, including Kazakh. In total, about 2.5 percent of enrolled students in Uzbekistan study in other languages, including Kazakh, Tajik, Kyrgyz, Turkmen, and others.

Secondary Specialized Vocational Education

88. **SSVE is an important subsector of Uzbekistan's education system and remains large even after the most recent reforms.** Its network of vocational institutions includes almost 10 times more schools than the nonvocational stream provided in academic lyceums, and it enrolls 9 out of every 10 SSVE students (World Bank 2017b). Moreover, the share of students attending VET in Uzbekistan (87 percent of the total number of students enrolled in SSVE) is significantly higher than in other countries, such as the Czech Republic (73 percent), Austria (70 percent), Romania (56 percent), Poland (49 percent), and Spain (34 percent). According to Center for Secondary Specialized Vocational Education (CSSVE) data from January 2018, SSVE comprised 1,411 vocational colleges and 141 academic lyceums, serving around 1.2 million students. These vocational colleges are present in all regions of Uzbekistan, with over 60 percent located in rural areas (Figure 16). Nevertheless, recent changes in regulations aim to restructure the VET network by significantly reducing the number of vocational colleges to around 800, according to information provided for the preparation of this report. At present, vocational colleges offer programs in 22 major study fields, covering 681 specializations and 241 professions, with the largest numbers in agriculture and services (Figure 17).

Uzbekistan's SSVE system is large, with enrollment rates in vocational colleges higher than in countries like Austria and Poland.

Figure 16: Distribution of Vocational Colleges, by Location and Region

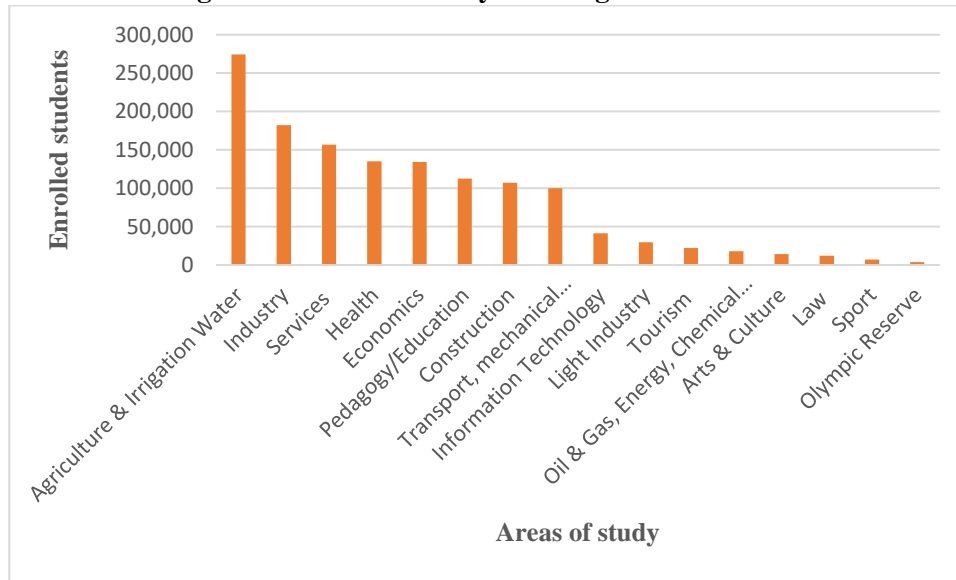


Source: MHSSE.

89. **Due to the latest reforms affecting SSVE and GSE, enrollment in the first year in vocational colleges decreased by around 300,000 students between academic years 2016/17 and 2017/18.** This may be explained by the fact that many students decided to continue their GSE studies up to grade 10 instead of going to VET. Moreover, significant variations persist in enrollment across regions, with larger enrollment shares in Samarkand, Ferghana, and Kashkadarya.

90. **While employment in Uzbekistan shifted from agriculture and industry to services, enrollment in vocational colleges in the former two specializations used to be the highest in Uzbekistan, followed by services.** Figure 17 shows the areas of study with the highest enrollment in Uzbekistan in the 2016/17 academic year. Students cited the following reasons for selection of their colleges and specializations: (i) proximity of the college to their homes; (ii) interest in their specialization; and (iii) advice from their family members on both their colleges and specialization (World Bank 2017b). Moreover, a clear gender enrollment pattern exists: most female students study in areas such as production technology, health care, and computer and information technologies, while male students predominantly study in agriculture, engineering, construction, and transport.

Figure 17: Areas of Study with Highest Enrollment



Source: MHSSE 2016/17.

Higher Education

Key Challenges

Enrollment in higher education in Uzbekistan is very low, even lower in postgraduate programs, and gender unbalanced. There are three major issues with access to higher education in the country. First, the supply of higher education services is very limited, mainly because of admission quotas defined by the GoU. This appears disconnected to the increasing demand for higher education places. In some regions of the country, this disconnect is more acute than in others. Second, enrollments in higher education in Uzbekistan are highly concentrated at the undergraduate level, whereas internationally the distribution of enrollments is more dispersed across different cycles. While demand for Master’s degree places is lower than that for undergraduate studies, an important margin remains to increase enrollments at that level and to align their distribution with international trends. Third, Uzbek women’s participation in higher education is markedly low. This is more critical for certain disciplines and in postgraduate education. Given below is an in-depth analysis into why enrollment in higher education is especially low in Uzbekistan.

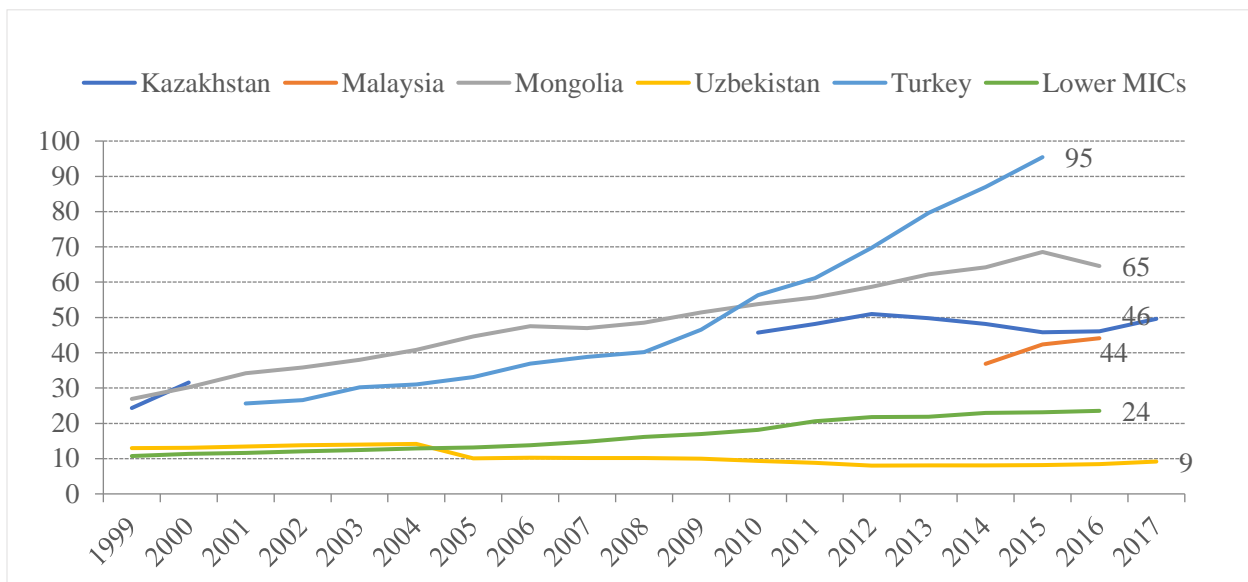
91. **One of the most pressing issues in higher education in Uzbekistan is access. Enrollment in higher education is significantly low in the country.** Uzbekistan’s higher education system enrolled a total of 281,451 students in academic year 2017/18 (UNESCO UIS 2018), yielding a GER of only 9 percent. This signifies a marked drop from the GER of 17 percent in 1991, immediately after independence (UNESCO UIS 2018). A slight recovery was observed in academic year 2017/18 compared to the GER of 8 percent from 2012 to 2016. But enrollment levels have been at or below 10 percent for more than a decade now, starting in 2005 (Figure 18).

Enrollment in higher education in Uzbekistan is very low, despite high levels of demand. In fact, the gap between demand for and admissions to higher education is increasing over time.

92. **This low GER in higher education is substantially below other countries’ rates, including CIS countries.** The GER in higher education is approximately 50 percent in Kazakhstan and 44 percent in

Malaysia. Furthermore, both Mongolia and Turkey, which by the turn of the century had a GER below 30 percent, significantly increased this ratio, reaching 65 percent and 95 percent, respectively (Figure 18). Enrollment in higher education in Uzbekistan is also well below the average in OECD countries, which in 2016 stood at 73 percent. Regardless, according to its GDP per capita, enrollment in higher education in the country should be approximately 24 percent, which is the average tertiary enrollment for lower-middle-income countries at present (UNESCO UIS 2018).

Figure 18: GER in Higher Education in Selected Countries, 1999–2017



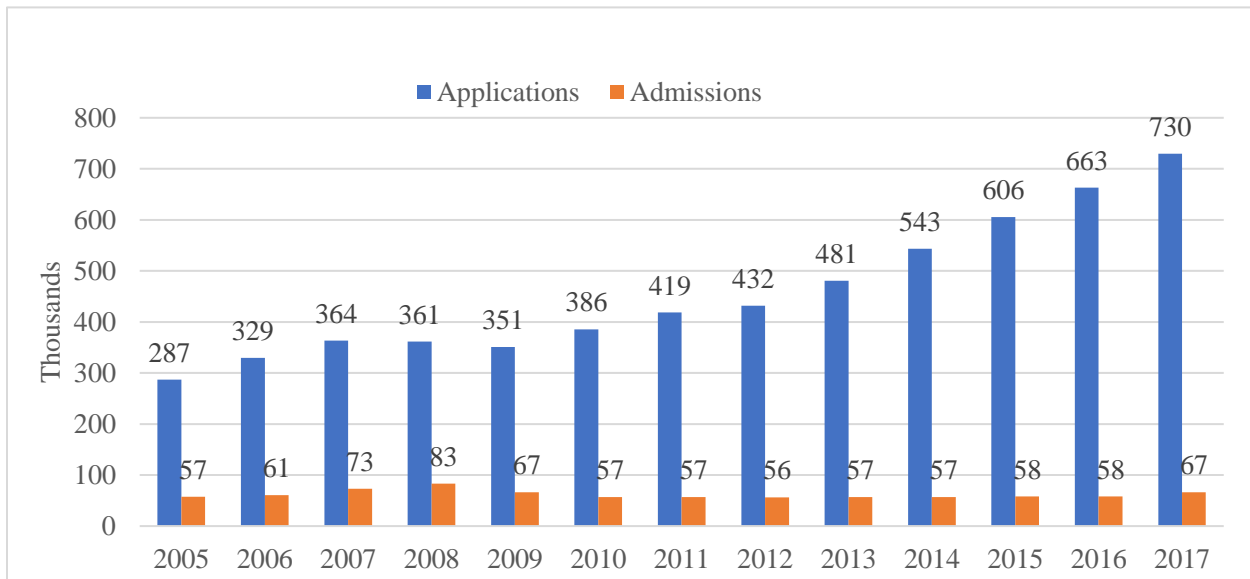
Source: UNESCO UIS.

Note: MICs = Middle-income countries. Data for OECD countries and lower-middle-income countries are for 2016. Other data are for 2017.

93. **The GoU sets quotas for admissions in higher education, and in recent years the gap between the number of applications to enter higher education and that of admissions increased markedly.** The annual university enrollment and intake levels are determined by an annual presidential decree on the recommendation of CoM in consultation with the MoE, the Ministry of Employment and Labor Relations, and the MHSSE. In 2008, the number of places for higher university studies set by the decree allowed for an intake of 23 percent of the prospective students who applied for that year. After that, the number of admissions first decreased and then stagnated, while the number of applicants continued to increase. The gap between the number of applicants and admissions granted has now more than doubled compared with 2008, and only 9 percent of those who applied secured a place in 2017.

94. **The increasing gap between applications and admissions in higher education shows that low enrollment at this level of education is not a reflection of lack of demand.** The overall quota for admissions in tertiary education increased 9 percent from 2016 to 2017. Yet this entailed an increase of 8,679 in the number of places made available – from 57,907 to 66,586 – whereas in 2017 there were 66,649 more applications than in 2016 – from 663,298 to 729,947 (Figure 19). However, it is worth mentioning that the GoU plans to change the quota system in the short term, according to statements of high-level officials through social media and interviews in the second semester of 2018.

Figure 19: Gap Between Supply and Demand for Seats in Universities, 2005–17



Source: Official website of the MHSSE <http://www.edu.uz/en/pages/sss>.

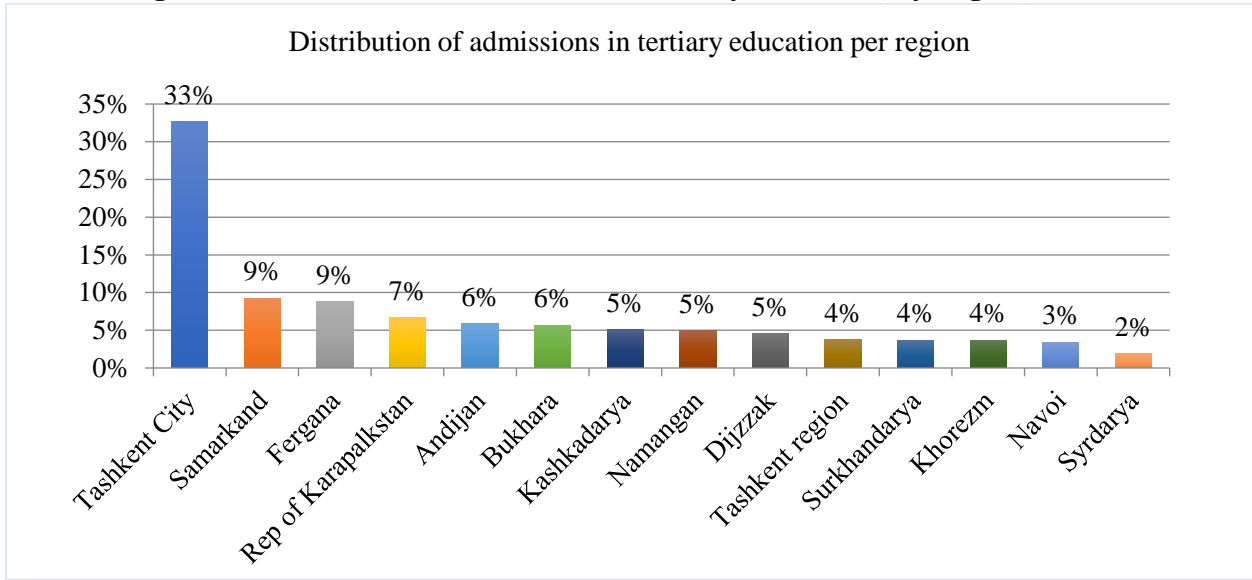
95. **A more granular analysis of existing data unveils further discrepancies between the supply of and demand for places in universities across regions.** In line with the concentration of HEIs in Tashkent City, where 50 percent of universities are located, 38 percent of higher education students are enrolled in Tashkent City institutions,⁶⁷ and most admissions are also concentrated in that city. In 2017, 26,385 higher education places were given to students to pursue higher education studies in Tashkent City, accounting for 33 percent of total admissions granted that year. Almost 40 percent of admissions were distributed among five HEIs, while another one-third was distributed among eight HEIs, each receiving less than 5 percent of the admissions. This may be related to the resources available in each region, such as its number of institutions or the size of its HEIs. For instance, Samarkand Region, which after Tashkent accepted the most students in 2017/18, is also the second region in terms of number of HEIs – seven in total (NSC 2018). One of these institutions is among the four HEIs in the country that have more than 8,500 students enrolled.⁶⁸

96. **More importantly perhaps, the available data suggest that the distribution of admission places per region is misaligned with the corresponding student demand for places.** Djizzak and Surkhandarya Regions received the highest number of applications per every 100 seats available – 635 and 493, respectively– but only 5 percent and 4 percent of the total student places for 2017 were granted for these regions. In turn, while Tashkent City and Samarkand concentrated 40 percent of the admissions, they were not among the regions with the highest numbers of applications per seats available (Figure 20, Figure 21, and Figure 22).

⁶⁷ Authors’ calculations based on data from MHSSE official website: <http://www.edu.uz/en/otm/index>.

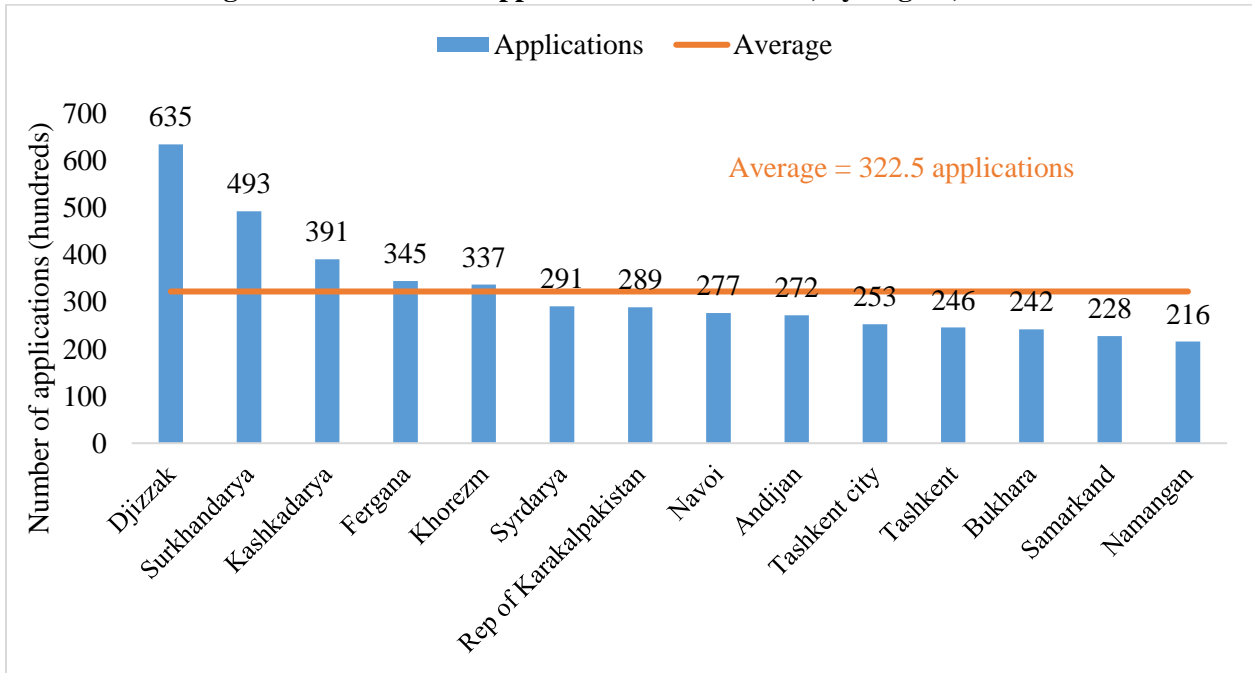
⁶⁸ MHSSE data.

Figure 20: Distribution of Admissions in Tertiary Education, by Region, 2017/18



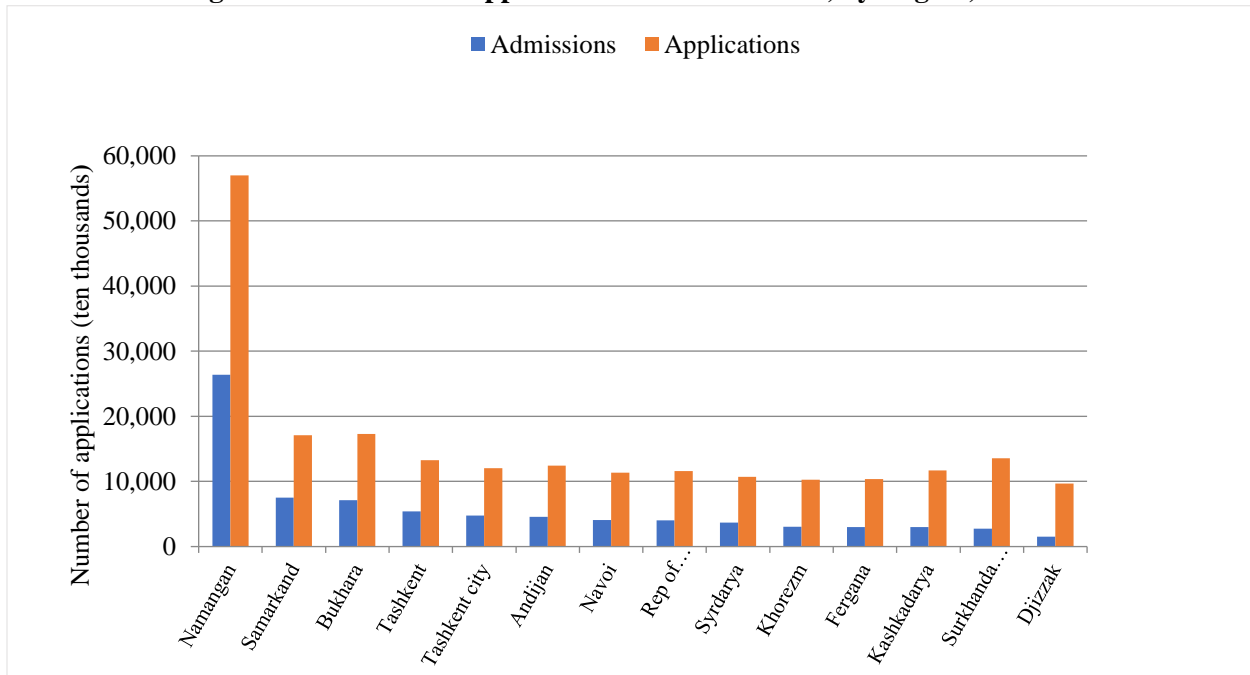
Source: NSC 2018.

Figure 21: Number of Applications Per 100 Seats, by Region, 2017/18



Source: NSC 2018.

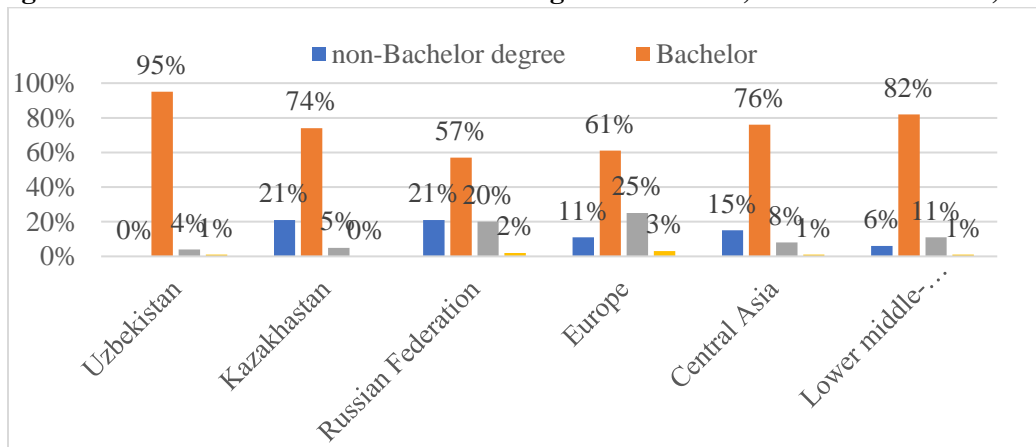
Figure 22: Number of Applications and Admissions, by Region, 2017/18



Source: NSC 2018.

97. **Almost all students currently enrolled in HEIs in Uzbekistan attend Bachelor’s degree programs.** This distribution is similar to that of neighboring Kazakhstan, for which data show that 95 percent of enrolled students are pursuing undergraduate courses. In Europe and Russia, enrollments in graduate courses are around one-quarter of the total enrollment. In Central Asia and in low-middle income countries, the average share of enrollment in postgraduate studies in total higher education enrollment is 9 percent and 12 percent respectively, as opposed to 5 percent in Uzbekistan (see Figure below). In 2017, only 4.5 percent of graduates from Bachelor’s programs in 2016 continued their studies to a Master’s degree in the country (NSC, 2018).

Figure 23: Distribution of Enrollments in Higher Education, Selected Countries, 2016

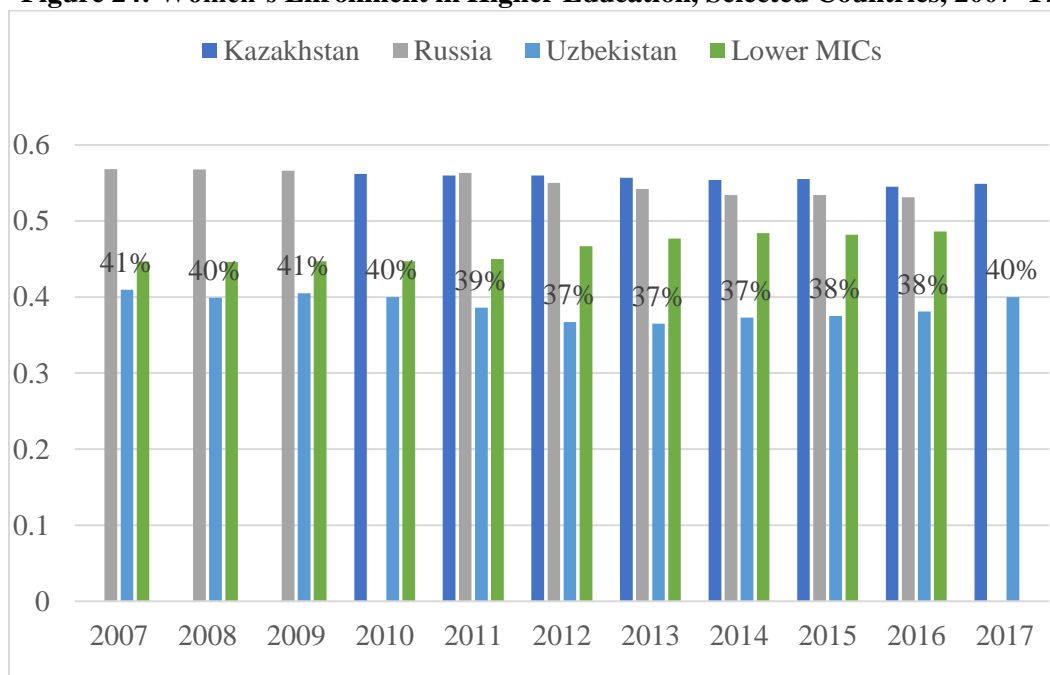


Source: Authors, based on UNESCO UIS.

98. **Entrance to HEIs is determined by applicants’ performance on the national exam conducted annually by the STC.** Admission by exam results means that students with stronger educational backgrounds are most likely to be admitted. The highest score in 2017 for entrance to Bachelor’s studies was 174.5, and was for a medical HEI, whereas the lowest score was 71.2, attributable to a small HEI branch with one of the highest intakes per applications– 65 percent of applicants were admitted in 2017. Further adding to the difficulty in accessing HE, the entry system allows applying to only one university and study field at a time. This means that prospective students who fail to obtain a place have to wait at least one year for the next round of exams.

99. **Another issue affecting access to higher education is the low number of women enrolled compared to men.** In the 2017/18 academic year, the GER for women is 6 percent, whereas for men it is almost double, at close to 11 percent. At present, only 37 percent (103,299) of students enrolled in Uzbek universities are women (UNESCO UIS 2018). In contrast, in the rest of the world women’s enrollment rates have reached parity with or surpassed those of male students. In high-income countries, on average 54 percent of students in higher education are women; even compared to countries of similar income, Uzbekistan is below the average of 49 percent of women participating in higher education in lower-middle-income countries today (UNESCO UIS 2018).⁶⁹ Furthermore, Uzbek women’s enrollment in higher education is below that in neighboring countries, including Tajikistan, which made significant progress in enrolling more women in universities over the last decade; in Uzbekistan the share of female students remained at around 40 percent over the same period (Figure 24).

Figure 24: Women’s Enrollment in Higher Education, Selected Countries, 2007–17



Source: UNESCO UIS and MHSSE for Uzbekistan.

Note: Data for Uzbekistan are labeled in each year.

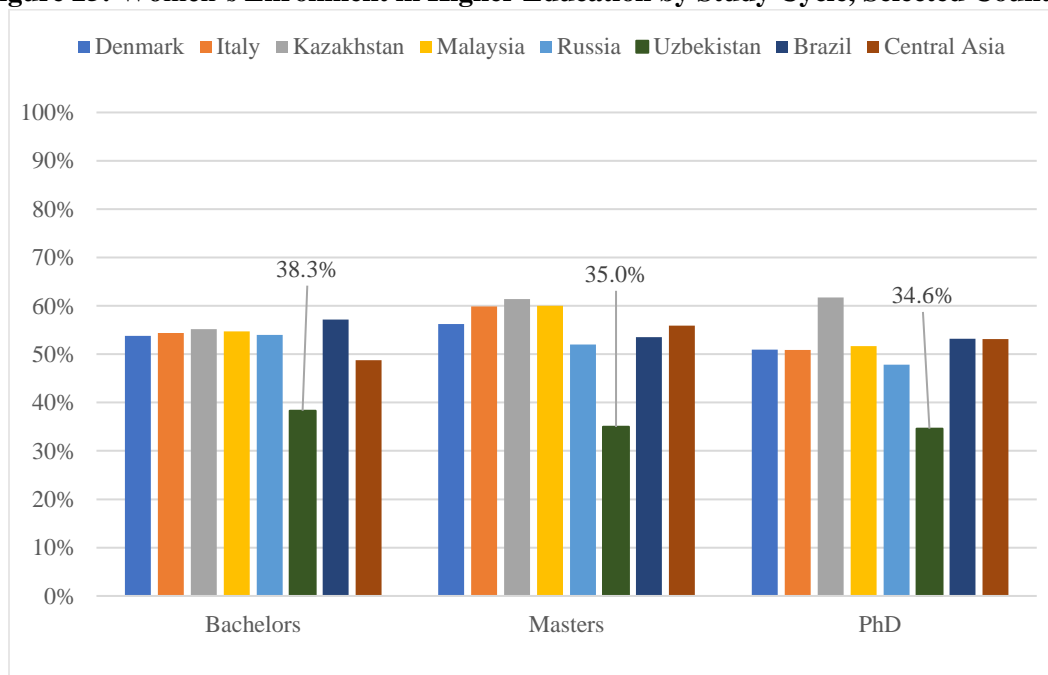
100. **Women’s participation in higher education is unevenly distributed across disciplines –it is especially high in education studies and significantly low in engineering.** In almost one-half of

⁶⁹ Latest UNESCO UIS data available are for 2016.

Uzbekistan’s HEIs, the share of women’s enrollment is at or below 30 percent. But in some universities women’s enrollment is particularly high, primarily in universities focused on education, arts, and languages. In two universities with these orientations, more than 85 percent of students enrolled are women. In contrast, women’s enrollment is below 10 percent in two universities that specialize in the field of engineering.⁷⁰ As shown in the section on relevance, the prevalence of women within education studies is not unique to Uzbekistan, but the low level of enrollment in other disciplines does appear to be.

101. **Furthermore, the share of women at postgraduate level is even lower than that for undergraduate studies.** While women account for 40 percent of those enrolled in higher education, according to national statistics, their participation at postgraduate level is 35 percent. In contrast, in Central Asia women’s participation in tertiary education is higher on average at postgraduate than at undergraduate level. The average participation of women in Bachelor’s studies is 49 percent in the region, but at Master’s and PhD levels this figure goes up to 56 percent and 53 percent, respectively. In Kazakhstan, women’s enrollment in Master’s studies and PhD level is 61 percent and 62 percent, respectively. In countries as diverse as Italy, Denmark, Russia, Brazil, and Malaysia, women’s participation is near or above 50 percent in each cycle of tertiary education (Figure 25) (UNESCO UIS 2018).

Figure 25: Women’s Enrollment in Higher Education by Study Cycle, Selected Countries



Source: Authors, based on UNESCO UIS 2018.

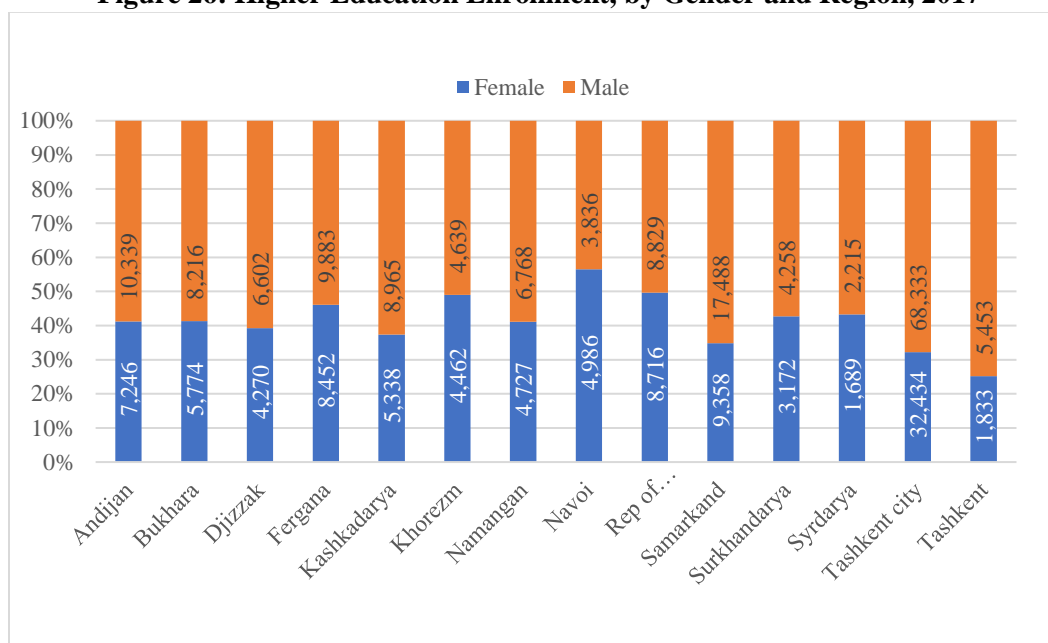
Note: Data for Uzbekistan are labeled for each cycle.

102. **Women’s enrollment is particularly low in the two regions with the highest concentration of enrollments in the country – Samarkand and Tashkent City.** In 10 out of the 14 regions of the country, women constitute more than 40 percent of the student population at tertiary level. Furthermore, in three of these regions, women comprise almost or more than one-half of the student body – in the Republic of Karakalpakstan (49.7 percent), Khorezm (49.0 percent), and Navoi (56.5 percent). Conversely, in Tashkent and Samarkand Regions, women’s enrollment in higher education is 32 percent and 35 percent,

⁷⁰ MHSSE data.

respectively. This is especially relevant because HEIs in Tashkent and Samarkand Regions concentrate 50 percent of the total enrollments in the country (NSC 2018).

Figure 26: Higher Education Enrollment, by Gender and Region, 2017



Source: MHSSE.

103. **An additional dimension that could be associated with low enrollment in higher education in the country is financial burden.** The final section of this ESA Report looks at financial issues and explores whether these could be behind the low number of university places assigned by the government and whether the fee levels could be hindering participation in higher education.

D. Students with Special Educational Needs

104. **Worldwide, 93–150 million children live with disabilities, almost 90 percent of whom live in developing countries and are out of school.** Existing evidence shows that this state of exclusion from education, and consequently from the labor market, translates into significant losses for societies over time. For example, the ILO estimates that low- and middle-income countries that do not adequately promote participation of persons with disabilities in the labor market with improved education opportunities lose 5–7 percent of their annual GDP (Buckup 2009). One study of the relationship between schooling, disability, and poverty conducted in 13 developing countries showed that “adults with disabilities typically live in poorer than average households, hence outlining the profound economic dimension of disability. Specifically, disability is associated with a 10-percentage point probability of falling in the two poorest quintiles” (Filmer 2008). Besides, each additional year of schooling is associated with a 2 to 5 percentage point reduction in the probability of being in the two poorest quintiles. Evidence also shows greater overall academic achievement (e.g., in mathematics, literacy, communication, and behavior) among children with disabilities studying in mainstream schools as compared to their non-mainstreamed peers (MacArthur 2009).

Investments in inclusive education yield significantly high economic, social, and political returns not only for individuals, but for the whole society.

105. **The literature shows significant variation in definitions and policy practices on special educational needs across countries.** Inclusive education can be defined as a constant process of change and improvement within schools and the wider education system to identify and remove barriers for educational participation and achievement, and to address the needs of all children, irrespective of abilities, social, economic, cultural, and minority backgrounds. It is crucial to promote the recognition of the intersection of disability with other forms of disadvantages, such as gender, ethnic background, and any other vulnerability and supporting practices that benefit all. Some definitions are more flexible and cover a wider range of needs, such as learning differences, while others are restricted to moderate and severe physical and mental impairments. Nonetheless, data on children with disabilities and/or diverse educational needs are still being collected according to national definitions. In Iceland, where data on children with special/diverse educational needs also cover children with reading difficulties receiving additional education support, a high percentage of children with special/diverse educational needs is observed (nearly 25 percent), compared to 1 percent in South Korea and 10 percent in the United States (OECD 2012).

106. **Current education models supporting participation of children with disabilities fall along three categories: (i) segregated special education, (ii) integrated education, and (iii) inclusive education, with positive progress being made toward inclusive education.** OECD data from 2010 indicate that most European countries already have a large proportion of children in totally inclusive settings. For example, Iceland, Ireland, Italy, Norway, Portugal, and Spain include more than 75 percent of children with disabilities and/or diverse educational needs in mainstream classes in mainstream schools. All European countries have special classes in mainstream schools, but only in Denmark and France is this the most common service provision for children with disabilities and/or diverse educational needs.

International Evidence

107. **International research and practice reveal several key elements for developing more inclusive school environments, for example teachers' pedagogical approaches, skills, and attitudes, infrastructure, curriculum, school culture, and leadership.** Findings of a recent World Bank (2017a) survey carried out in China's Guangdong Province outlined some of the key challenges in developing more inclusive education environments, including: (i) insufficient curriculum resources, relevant special education services, and support; (ii) insufficient individualized learning plans; (iii) insufficient accessible infrastructure particularly for children with physical disabilities; (iv) lack of parental involvement in schools; and (v) limited supply of resource rooms⁷¹ in regular schools, and in some cases lack of professional staff to manage these rooms and dedicated equipment.

108. **School infrastructure plays a key role in ensuring a sustainable inclusive education policy that goes beyond physical access to education buildings and facilities.** It entails designing learning environments in mainstream settings that are more conducive through flexible space usage and layout, adapted facilities, furniture, and assistive technologies. Globally, the setup of "resource rooms" in mainstream schools has emerged as a commonly used practice. This is a dedicated classroom in the main school building where students with special educational needs enrolled in mainstream classrooms can benefit from special instruction in an individualized and/or small group setting for a limited time during the school day, depending on students' immediate needs. However, developing these environments can be challenging in overcrowded schools or in schools functioning in multiple shifts.

109. **International findings show that teachers' skills and attitudes toward working with students with special educational needs are a strong determinant for successful inclusive education practices and have important implications for teacher training.** The 2013 OECD Teaching and Learning

⁷¹ Resource rooms tend to provide a quiet space that may include tutoring and computers, in the best scenario.

International Survey (TALIS) showed that over 20 percent of teachers in 34 education systems reported a need for more training related to teaching students with special needs. In Brazil, as many as 60 percent of teachers reported needing more training. In other countries (e.g., Cambodia and Finland), different school cooperation mechanisms were developed whereby teachers advocate for inclusive education in their own school among their peers and local community, offering peer support (Box 1).

Box 1: The Practice of “Co-Teaching for Inclusion”

In Finland, co-teaching practices were set up to promote cooperative learning and teamwork in planning, teaching, and evaluation. This practice combined a mainstream class and a special class of third grade students (aged 9). For four years, the classes were taught together, and teachers were jointly responsible for this group. Later, a similar partnership started between classes from the first and third grades, and this group was taught together for six years.

Review of the practice found that teachers’ motivation increased significantly. Teachers indicated that working together gave them the strength to manage and develop their work. For this approach to become effective, teachers required additional time for joint planning and collaboration. But the results showed benefits not only for teachers; when surveyed, students and their parents were also very pleased with the impact of the program.

Source: UNESCO 2017.

110. Inclusive school cultures are essential for implementing sustainable inclusive education systems. However, adequate tools and strong leadership are necessary to build such a culture. Research on school change indicates that progress toward inclusion is strongly influenced by cultural factors in schools (Ainscow and Booth 2011, Ainscow 2005). Building an inclusive culture at school level is no easy task, and requires adequate tools and mechanisms. One such tool is the *Index for Inclusion* developed by two British scientists⁷² over the period of three years with support from a team of teachers, governors, parents, researchers, and representatives of disability organizations. The *Index for Inclusion* provides schools with a self-assessment tool for all school aspects (e.g., activities in playgrounds, staff rooms, classrooms, communities, and the environment around the school), including review of values, beliefs, and teaching practices. At present, it is being used in almost 45 countries around the world, and has been translated into 21 languages.

111. In the past decade, Uzbekistan took several steps toward more inclusive education.

In 2009, GoU adopted the “National Concept of Inclusive Education,” which highlights the need to provide quality education to all children irrespective of their social, physical, and intellectual conditions and capabilities. Moreover, Uzbekistan’s ESP for 2013–2017 included a strategic direction to support the inclusion of children with special needs in mainstream education, as well as key measures such as: (i) improvement of education infrastructure to accommodate students with different needs; (ii) enhancement of capacity of teachers and school administrators to identify and respond to diverse needs of learners; (iii) development of a dedicated monitoring and evaluation strategy for special needs education; and (iv) awareness raising on the benefits of inclusive education.

Despite international commitments to inclusive education, segregation still prevails in the Uzbek education system.

112. While the GoU has committed to international conventions and taken initiatives to align its actions toward a more inclusive education system, segregation still prevails. UNICEF’s 2018 country review on inclusive education suggests that while legislative guarantees are broadly in line with child rights-

⁷² Mel Ainscow (University of Manchester, School of Education) and Tony Booth (University of Cambridge, Faculty of Education).

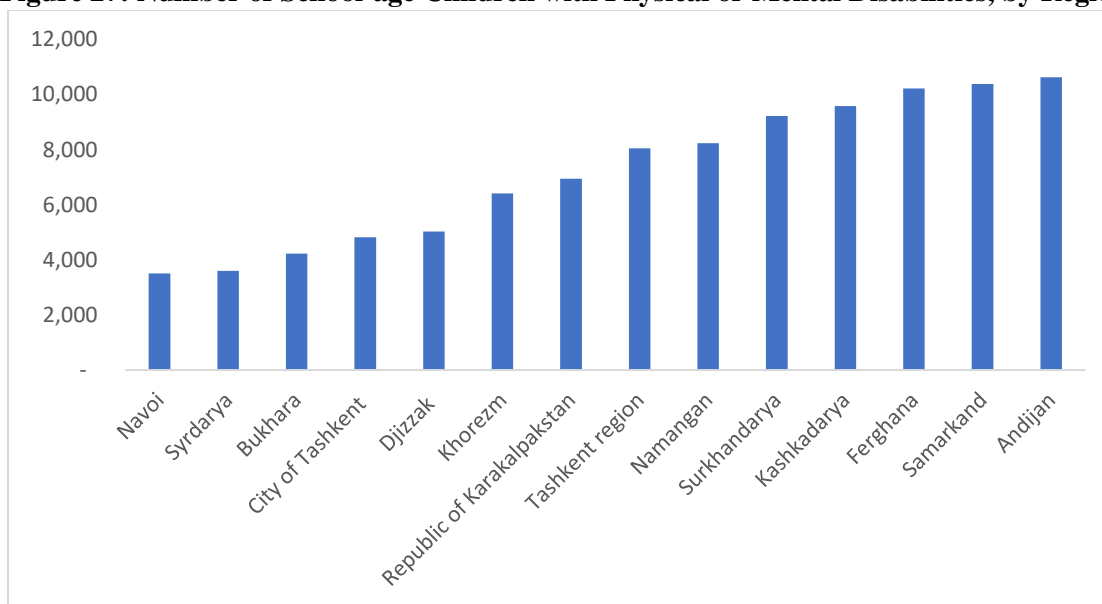
related international legislation, they rather reflect a medical approach to disability focused on physical or mental impairment rather than on a person’s actual needs. Uzbekistan’s existing legislation is unclear, which makes adoption of effective inclusive education measures and practices difficult. For example, current legislation makes no references to ways in which mainstream teachers and schools should adapt their teaching and learning methods to accommodate different needs of learners, especially students with disabilities.

113. Cultural norms may mask the number of children reported as having disabilities in Uzbekistan. According to official statistics, 110,000 children ⁷³ were legally recognized (certified⁷⁴) as having a disability in 2016, representing almost 1 percent of the school-age population. Larger numbers of children with disabilities were found in Andijan, Samarkand, and Ferghana Regions (Figure 27).

In Uzbekistan, almost 1 percent of the school-age population (around 110,000) represents children with disabilities, almost one-half of whom are studying in mainstream schools.

However, international estimates of children with severe or moderate disabilities vary between 4.5–5.0 percent of the school-age population. These findings suggest that the number of children with disabilities could be significantly underestimated in Uzbekistan (UNICEF 2018).

Figure 27: Number of School-age Children with Physical or Mental Disabilities, by Region



Source: NCS.

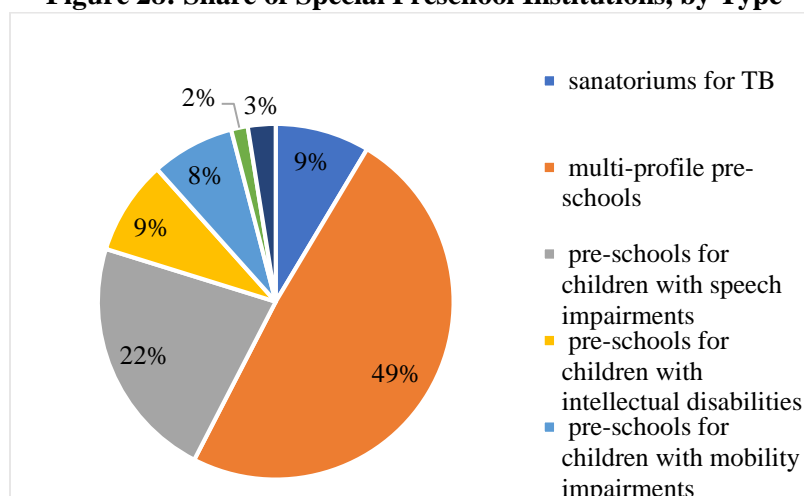
114. In Uzbekistan, official data indicate that more than one-half of all children with legal certified disabilities are studying in mainstream schools, while over 10 percent are out of school. According to official data from the Ministry of Health from 2015, 56 percent of all registered children with disabilities (aged 7–15) were studying in mainstream schools, 18 percent were studying at home, 12 percent were in special schools, while 14 percent were out of school. It is unclear how many of the children enrolled in mainstream schools are studying in mainstream classrooms.

⁷³ Data as of January 2017 provided by the State Committee of the Republic of Uzbekistan on Statistics.

⁷⁴ A person is officially registered as having a disability based on a medical certificate stating the type and degree of disability.

115. **Proportionally, there are more institutions for special educational needs in preschool than in GSE.** In the 2017/18 academic year, 198 specialized preschool institutions accommodated approximately 21,000 children, compared to 88 GSE schools that enrolled 18,000 students. Almost one-half of the special preschools are multi profile, while the rest serve children with different specific disabilities (Figure 28). In 2017, the number of students in special vocational colleges was approximately 4,000 (UNICEF 2018).

Figure 28: Share of Special Preschool Institutions, by Type



Source: MPSE.

Summary of Challenges

116. **Despite recent efforts to promote inclusive education, the GoU is still working to ensure more inclusive and equitable services for children with special or diverse educational needs.** The key issues hindering inclusive education include: (i) unclear legislation regarding ways to include children with special or diverse educational needs in mainstream education; (ii) the predominance of a medical approach in both legislation and policy discourse; (iii) insufficient or even lack of qualified staff to provide professional support to children with special or diverse educational needs in mainstream schools; (iv) insufficient supply of teaching and learning materials for children with special education needs; and (v) weak cross-sectoral collaboration between line ministries (e.g., Ministry of Health, MPSE, and MoPE).

117. **Additionally, existing data on children with special or diverse educational needs are limited.** Data collected and reported by the NSC and line ministries refer only to children studying in special schools and children with a legal disability certificate studying in special or mainstream schools (UNICEF 2018). Current data collection processes still follow the International Classification of Disease instead of the International Classification of Functioning, Disability, and Health⁷⁵ recommended by the World Health Organization. The latter goes beyond purely medical or biological conceptualization of dysfunction, considering other critical aspects of disability, such as environmental and contextual factors defined as all aspects of the physical, social, and attitudinal world.

⁷⁵ The International Classification of Functioning, Disability and Health is a classification of health and health-related domains developed by the World Health Organization. It is used for measuring health and disability at both individual and population levels.

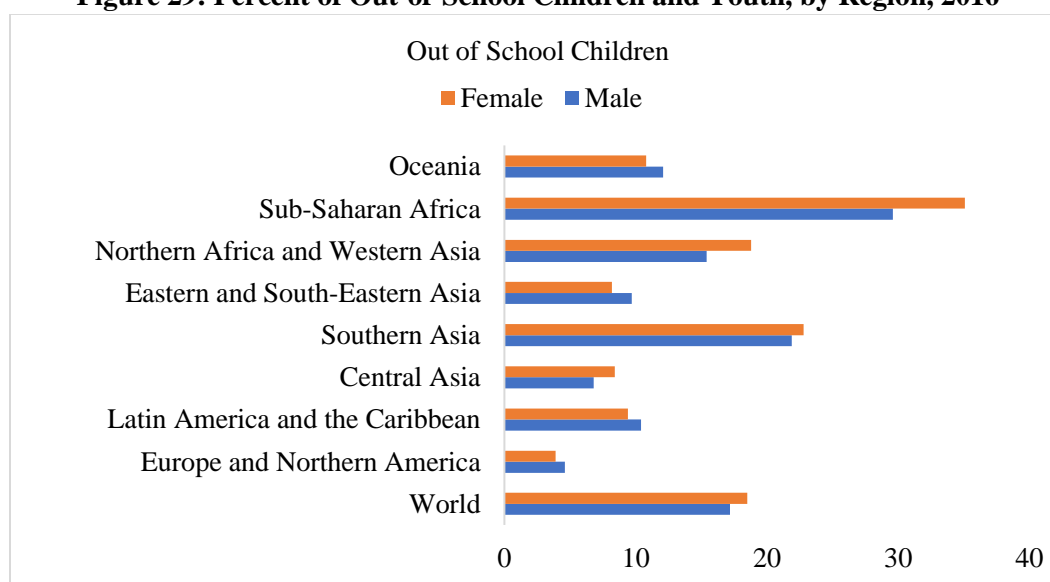
E. Out-of-School Children

118. Globally, out-of-school children are a matter of concern, with differences across levels, regions, and gender.

The last 15 years witnessed significant progress in expanding access to education worldwide, particularly at the primary level. Recent UIS data⁷⁶ indicate that in 2016, nearly one in five children and youth worldwide were not in education (263 million children and youth aged 6–17). By level of education, these are primarily youth of upper secondary school age (about 53 percent or 139 million), whereas 24 percent are primary school-age children (about 63 million), and 23 percent are of lower secondary age (about 61 million). Central Asia has the second lowest out-of-school rate after Europe and North America, which could be explained by free and compulsory education systems in many countries in this region.

In 2016, nearly 1 in 5 children and youth worldwide were out of school, with girls being at higher risk.

Figure 29: Percent of Out-of-School Children and Youth, by Region, 2016



Source: UNESCO UIS.

119. **Different reasons explain why so many children do not attend school, including disadvantaged socioeconomic conditions and gender-related obstacles.** Children who are not enrolled in school are often those from the most socially marginalized communities, including children with disabilities, children from ethnic minority communities, children excluded because of gender barriers, and children living in extreme poverty (UNICEF 2016). The *Global Initiative on Out of School Children*⁷⁷ launched jointly by UNICEF and UIS in 2010 presents a methodological framework for identifying and analyzing the characteristics of these groups of children and the barriers leading to their exclusion from education. This initiative can be of help to strengthen national data collection systems, policy analysis, and strategy development to support countries in identifying out-of-school children and youth, as well as children at risk of dropping out.

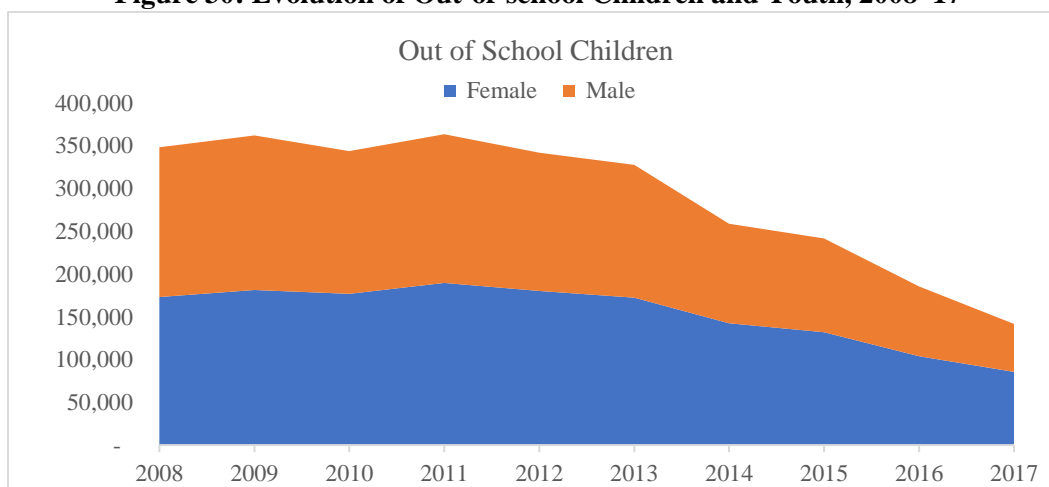
⁷⁶ <http://uis.unesco.org/en/topic/out-school-children-and-youth>.

⁷⁷ <http://allinschool.org/>.

120. **UIS data show that the number of out-of-school children and youth decreased significantly (by 60 percent) over the past decade.** The number of out-of-school children decreased from nearly 350,000 to almost 142,000 between 2008 and 2017.⁷⁸ A steady decrease occurred between 2008 and 2013, followed by a faster drop between 2013 and 2017 (Figure 30). This negative trend is consistent with the increasing enrollment trend in GSE over the last decade. However, during this time, the percentage of out-of-school girls remained higher than that of boys, and now reaches 60 percent of the total number of out-of-school children.

Uzbekistan has a low number of children out of school (less than 3 percent of the school-age population), with girls outnumbering boys.

Figure 30: Evolution of Out-of-school Children and Youth, 2008–17



Source: UNESCO UIS.

121. **Out-of-school rates in Uzbekistan show regional discrepancies, with the highest rate found in the Republic of Karakalpakstan.** Out-of-school Uzbek children and youth are more predominant in Karakalpakstan (7.5 percent), Syrdarya (4.5 percent), Samarkand (4.4 percent), Bukhara (4.3 percent), and Tashkent Regions (4.2 percent). Limited data do not allow for analysis by gender or urban–rural divide, which could shed more light on potential reasons for children and youth not participating in education, including early pregnancy and limited or lack of adequate school transportation alternatives.

Uzbek children and youth living in rural areas with reduced population density are more likely to be out of school than those living in more highly populated urban areas.

⁷⁸ <http://uis.unesco.org/country/UZ>.

F. Elements of Quality of Education

a. Lack of Quality Measurement

122. **At present, no system is in place to measure quality within the preschool system in Uzbekistan. Limited information and capacity to monitor quality hinders policy making regarding preschool education in the country.** The measurement of quality is important to assess whether preschool children are being adequately prepared to enter primary schools. Research suggests that the benefits of preschool education are largely contingent on quality. Preschool students are beginning to build their socioemotional, linguistic, and physical skills. The extent to which they develop these core capabilities influences their ability to learn effectively when they enter a formal education environment and so determines their readiness for school.

123. **Quality measurement is a challenge not only in preschool education but also in GSE, which covers grades 1 to 11 in Uzbekistan.** On the latter, while assessments of student outcomes do take place in the country, these are not done under a standardized and systematic approach, so their results cannot be compared over time. Thus, it is not possible to tell whether quality is improving based on the results of current national assessments. SISQE under the CoM is responsible for the measurement of quality in preschool and GSE in Uzbekistan. Its other tasks include the licensing of preschools and attestation of preschool teachers. Since May 2018, SISQE has been tasked with improving Uzbekistan’s student assessments, including their alignment with international best practices, the introduction of standardized national assessments, and the country’s participation in large-scale student assessments such as PISA. This agency’s capacity needs to be strengthened for these tasks to be performed.

b. Quality of Learning Environments

Key Challenges

Strong evidence from around the world show that learning environments deeply impact student outcomes. Factors such as air quality, temperature and light along with access to water and sanitation affect motivation levels of teachers and a student’s capacity to concentrate and stay alert in the classroom. Many reasons such as large enrollment sizes and dual-shift schooling can negatively affect learning environments as well. In Uzbekistan, suboptimal infrastructural conditions are currently posing a serious challenge to high quality service provision of both early childhood development and general secondary systems. Substantial investments are therefore required to improve education infrastructure in Uzbekistan. An in-depth analysis of learning environments at all levels of education, can be found below.

124. **Research from across the world shows that school infrastructure is a critical element of the learning environment and it has an impact on student learning outcomes.** Studies in fields including educational psychology, sociology, and economics point to the importance of education infrastructure quality as a critical element of learning environments in schools, colleges, and universities. At a minimum, learning environments should be safe for students and staff and conducive to student motivation and engagement. Environmental quality elements such as fresh air and natural light are important for keeping students healthy and alert (Wyon and Wargocki 2007; Figueiro and Rea 2010). Additionally, a recent study from the United Kingdom (Box 2) found that measurable

School infrastructure is a critical element of the learning environment and has an impact on student learning outcomes.

dimensions of environmental quality explained 16 percent of variation in pupils' learning progress (Barrett et al. 2015). Moreover, researchers are increasingly looking at quality as the extent to which facilities' design aligns with recognized learning principles. For example, high-quality learning environments: encourage active engagement in learning as well as group work; are sensitive to individual differences among learners; and promote "horizontal connectedness" across areas of knowledge and subjects, as well as to the community and wider world.

Box 2: Holistic Evidence and Design (HEAD) Project

The HEAD study was carried out in the United Kingdom in 2015. It focused on isolating the impact of physical school design features on pupils' learning rates. This study captured the results for 3,766 pupils in 153 classrooms across 27 UK primary schools. Using multilevel statistical modelling, the outcomes of this study were linked to measurements of variations in the physical features of individual classrooms. The results of these analyses show that 16 percent of the variation in pupils' learning progress can be explained by classrooms' physical attributes, such as air quality, temperature, light, and acoustics. As an example, existing evidence shows a negative impact of poor air quality on pupils' picture memory and word recognition, as well as reduced performance on mental tasks when CO₂ levels are high (greater than 500 parts per million).

The HEAD study was founded on a student-centric model, where the stimulation, individualization, and naturalness factors are driven to a great extent by children's human needs or the basic mental necessities of learning. Under "naturalness," this model covers the normal internal environmental aspects, such as heat, light, sound, and air quality, but also adds the following two dimensions: (i) individualization, which includes flexibility, ownership, and connection; and (ii) level of stimulation, which refers to the appropriate level of visual complexity and color. Aspects related to basic needs, such as decent lighting, are sure to be important to all students. Similarly, an appropriate level of ambient stimulation to support learning seems very likely to translate into better outcomes. Individualization is arguably also linked to an important human need, especially to promote a feeling of ownership of the classroom.

Although the HEAD model was initially developed for English schools, its underpinning framework is person-centric, and takes the perspective of a primary school pupil. The HEAD study confirmed that the academic progress of pupils is strongly influenced by school design features that: provide a good natural (healthy) environment; support individualization of the space; and provide an appropriate (mid-level) of ambient stimulation. These principles were successfully tested in the UK context and were further applied in countries like Norway and Romania.

The results of the HEAD Project were shared with more than 400 stakeholders in a conference in Tashkent City on November 19, 2018. This conference was organized by the MPSE, the World Bank, and UNICEF within the context of implementation of the national program aimed to increase access to preschool education in the country. This program includes the construction of thousands of new preschools in Uzbekistan and the GoU is interested in the concept of effective learning environments as it finances such infrastructure.

125. Poor-quality infrastructure has a negative effect on teachers' motivation and students' capacity to concentrate and remain alert. Studies from around the world show that teachers are more motivated and excited to come to school when the infrastructure is more welcoming. For example, studies of teacher absenteeism in Bangladesh, Ecuador, India, Indonesia, Peru, and Uganda found that teachers in schools with the best infrastructure have substantially lower absenteeism rates than teachers in schools with the worst infrastructure conditions (Chaudhury 2005). In particular, lack of toilets was correlated strongly with high rates of teacher absenteeism. In fact, infrastructure was found to have an even stronger impact on teacher absenteeism than teachers' salary level or administrative tolerance of absence. Additionally, clear

evidence exists in the literature of the direct negative impact of poor air quality on pupils' picture memory and word recognition, and more general evidence of reduced performance on mental tasks from CO₂ levels of 500 parts per million upward.

126. Improvements in access to water, sanitation, and hygiene (WASH) in Uzbek schools remain an important concern for learning environments regardless of level of education.

Schools in rural areas and in the Aral Sea region have particularly limited access to WASH, which seems to be partially explained by water scarcity. Water scarcity in Uzbekistan is comparable to many countries in the Middle East and North Africa, and overuse of water resources has resulted

in near-depletion of the inland Aral Sea. Thus, schools in these regions are more likely to suffer from seasonal water insecurity. Furthermore, rural schools tend to rely on multiple sources for water, including well water, surface water, and water transport. Due to the extensive cotton production and use of agrochemicals, groundwater and surface water are at high risk of contamination with agricultural runoff, meaning that students in rural schools face an elevated risk of drinking contaminated water (UNICEF 2011).

Water security is a matter of concern in Uzbekistan's schools, mainly in rural areas, in areas close to the Aral Sea, and in arable regions.

127. In Uzbekistan, the design of schools follows existing detailed and rigid standards and norms on health, safety, and educational elements.

In preschool education, institutions should have a standard design depending on the number of groups, with one or two floors, a garden/orchard, and a playground. Space per child is explicitly specified in regulations. Playgrounds must have 9 m² per preschool child and bedrooms must be equipped with stationary beds of 140cm x 60cm in size.⁷⁹ The highly regulated approach to school design is intended to ensure safety, compliance, and equality, but it also limits local communities' ability to adapt learning environments to their specific needs. Adaptability of learning environments is increasing viewed as an important element to facilitate learning (OECD 2013).

128. In addition to the quality of infrastructure, the utilization of learning environments impacts learning.

Good-quality infrastructure is a critical element of a learning environment, but the way that students and teachers interact and use those spaces also affects the extent to which learning is positively influenced. For example, insufficient supply of seats (school places) may result in overcrowding, with excessively large classes or the need to adopt multiple shifts throughout the day. Even in school buildings that have good-quality infrastructure, overutilization of that space can hinder learning.

129. Large school enrollment size and dual-shift schooling can negatively affect school learning environments.

Although larger schools tend to have greater capacity and more resources, research suggests that they may fail to cultivate the positive school climate often found in smaller schools, including strong interpersonal relationships and greater participation in extracurricular activities (Humlum and Smith 2015; Borland and Howsen 2003). Teacher satisfaction also tends to be lower in large schools, perhaps due to discipline problems among students or a loss of the cooperative and community-like environment that persists in smaller schools (Cotton 1996; Slate and Jones 2005). Although evidence is mixed, most educators and specialists agree that dual-shift schooling negatively affects the learning environment in relation to single-shift schooling (Bray 2008). Dual shifts can reduce teaching time and condense the school day, creating a hurried environment. Pupils and staff of different shifts may not easily identify with each other, creating the sense that the two shifts are actually two separate school communities. Dual-shift schooling also forces authorities to reduce or eliminate extracurricular activities, because the school day becomes too tight, and school facilities may be too congested to allow simultaneous activity by children of multiple shifts.

⁷⁹ SinPin requirements for PKs in UZ summary.docx.

Preschool Education

130. **In line with plans to expand access to preschool education, the GoU is renovating, expanding, and constructing new preschools on a large scale.** The GoU is planning to increase the number of public preschool institutions by over 3,000 in the next 10 years through construction of new facilities. Additionally, the GoU will equip existing preschool institutions to use all available space and ensure that vacant spaces are occupied, while complying with maximum group size norms of 20 students per group for children aged 3–6. It is important to note that preschool group sizes are smaller for children aged 2–3 and for children with special educational needs.⁸⁰

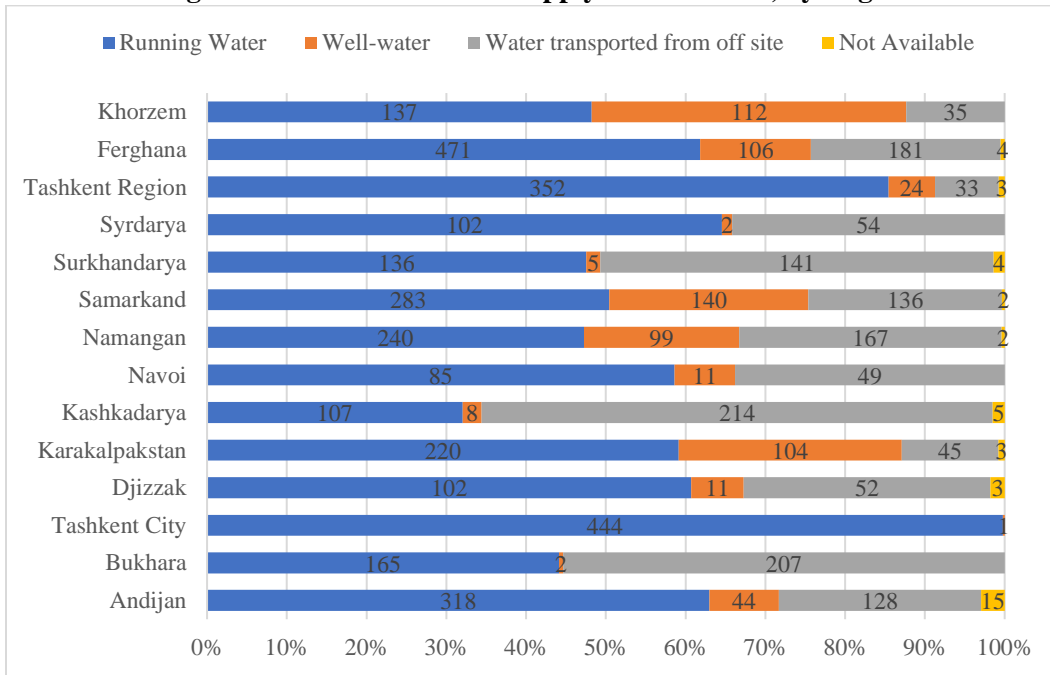
131. **Despite the plans to expand the preschool network, a large number of existing preschools in Uzbekistan require major repairs.** Over 2,400 preschool education institutions were classified by the NSC as in need of major repairs, which amounts to 47 percent of all preschools in Uzbekistan in 2016. Out of these, 134 preschools were classified as being in emergency condition, requiring major civil works to comply with health and safety standards for preschools.

132. **Suboptimal infrastructural conditions pose a serious challenge to service provision of quality early childhood development.** Existing data show that preschools often do not have functioning lighting, heating, as well as water and sewerage services during school hours, mainly in rural areas. Components such as these are imperative to creating a safe learning environment for young children. For instance, only around 30 percent of preschools have access to running water in Kashkadarya Region, according to MPSE data from 2017; in Bukhara Region, this figure is close to 45 percent. Although mechanical or motorized pumping of water is allowed where centralized water and sanitation is not possible, the health and sanitation norms for preschools require the provision of a minimum of 250 liters per child per day.⁸¹ Despite these norms, several preschools across the country have no access to water (Figure 31). In addition, the sewerage systems in various parts of the country are below optimal conditions. In regions such as Surkhandarya, over 100 preschools do not have access to any sewerage system. In Ferghana, this figure exceeds 300 schools. In comparison, all schools in urban areas like Tashkent City have access to either centralized sewerage systems or sewerage tanks. Insufficient or nonexistent heating systems pose another problem – over 1,400 preschools across the country have no access to stable heating.

⁸⁰ SinPin requirements for PKs in UZ summary.docx.

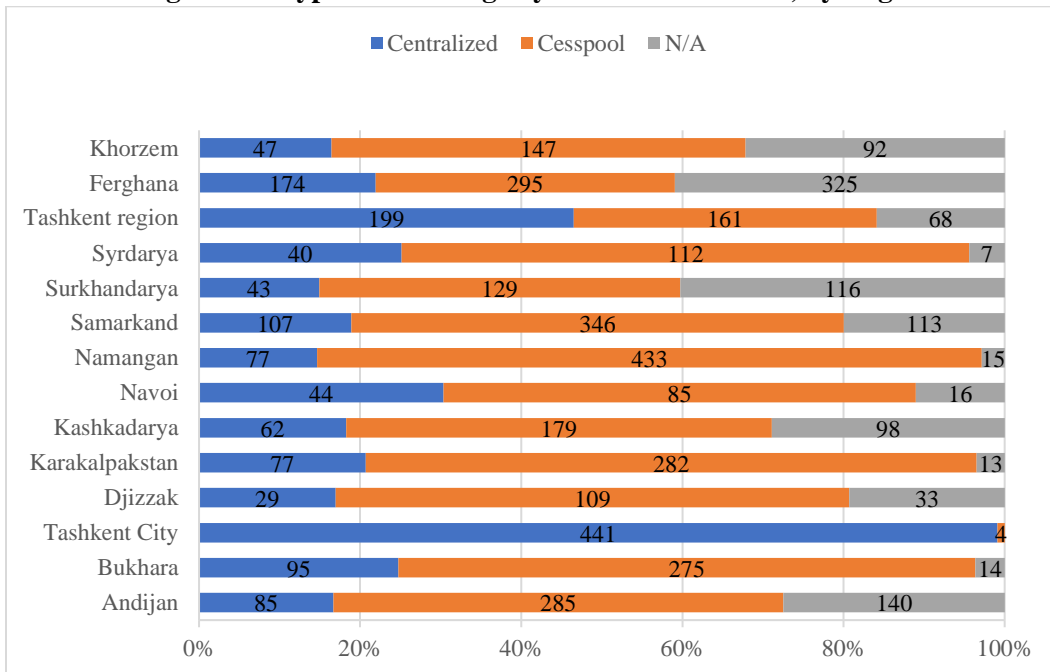
⁸¹ SinPin requirements for PKs in UZ summary.docx.

Figure 31: Source of Water Supply in Preschools, by Region



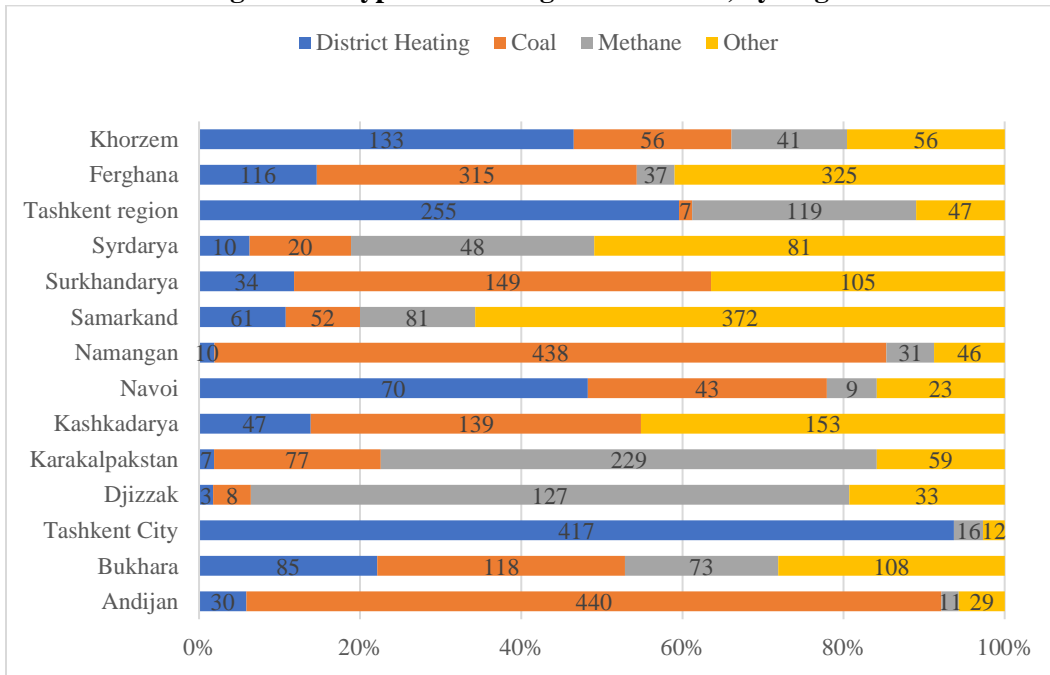
Source: MPSE 2017.

Figure 32: Types of Sewerage Systems in Preschools, by Region



Source: MPSE 2017.

Figure 33: Types of Heating in Preschools, by Region

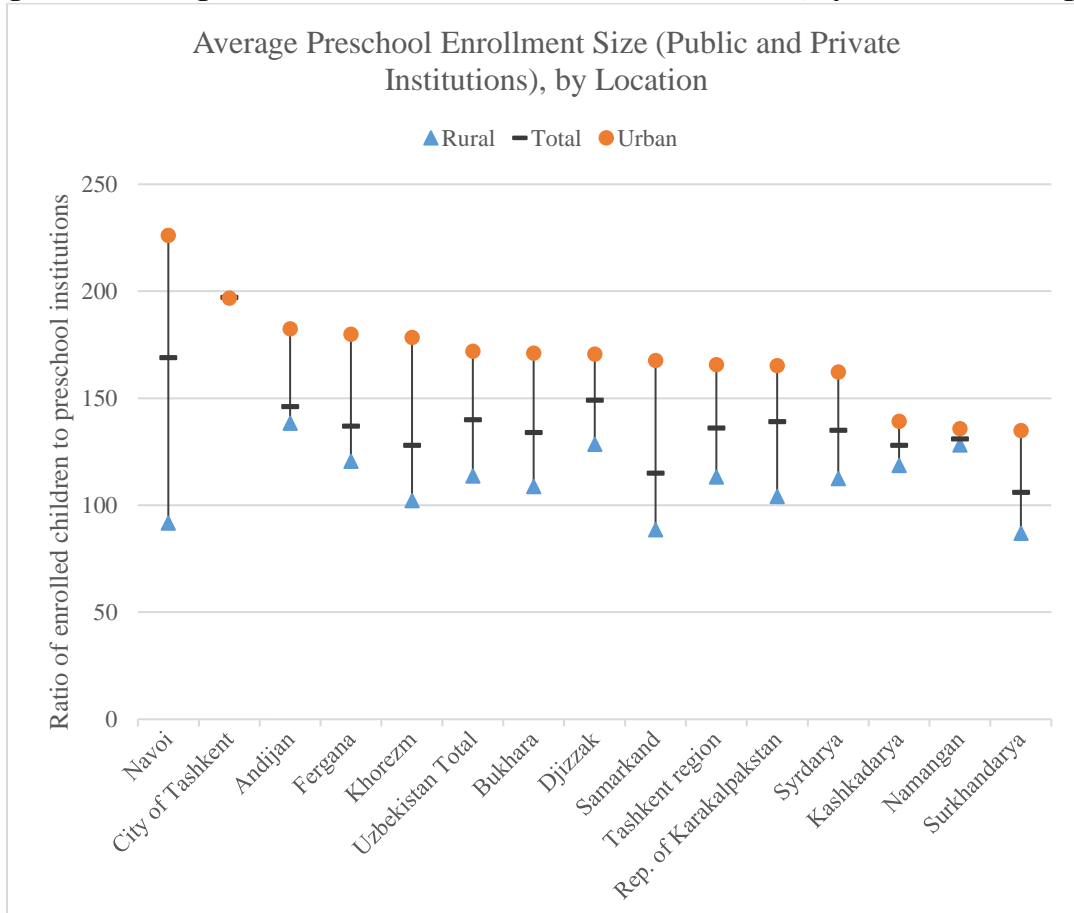


Source: MPSE 2017.

133. **Additional efforts are needed to ensure equal access and avoid overcrowding in preschool institutions in selected areas of the country.** On average, considering both public and private preschool education institutions, the number of enrolled children per institution is about 160 nationwide, according to MPSE data from the 2017/18 academic year. However, this ratio varies considerably between urban and rural areas and across regions. Average enrollment size is double the national average in the urban areas of three lagging regions of Karakalpakstan, Djizzak, and Navoi (Figure 34). These disparities indicate a need for specific and targeted investments in education infrastructure to ensure equitable access and to avoid overcrowding and overutilization of school infrastructure.

Preschools located in urban areas in lagging regions exceed the national average enrollment size, which calls for targeted interventions.

Figure 34: Average Public and Private Preschool Enrollment Size, by Location and Region



Source: MPSE 2018.

General Secondary Education

134. **About 15 percent of GSE institutions require significant capital repairs. This corresponded to over 1,400 GSE schools in the 2016/17 academic year.** About 1 percent of these institutions—just over 100 schools—are in need of major overhauls and are designated as being in emergency condition. Both groups of schools—those requiring capital repairs and those in emergency condition—have decreased since the 2015/16 academic year, indicating that the MoPE has taken concerted efforts to improve the physical conditions of GSE schools.

135. **Access to running water is fundamental to ensure hygiene in schools, but data show that this is a matter of concern in GSE in Uzbekistan.** The availability of running water in schools is important for waste management, sanitation, and the development of healthy practices around handwashing and hygiene, which can initiate good behavioral changes that last a lifetime (World Bank 2009; UNICEF 2013). However, about 30 percent of public GSE schools nationwide do not have access to running water. Furthermore, the sanitary standards for GSE schools stipulate that buildings should be equipped with centralized systems of drinking water supply, sewerage, and drains in accordance with requirements for public buildings and facilities. Data show significant regional variation in access to

Around 30 percent of GSE schools do not have access to running water in Uzbekistan, a situation that is uneven across regions.

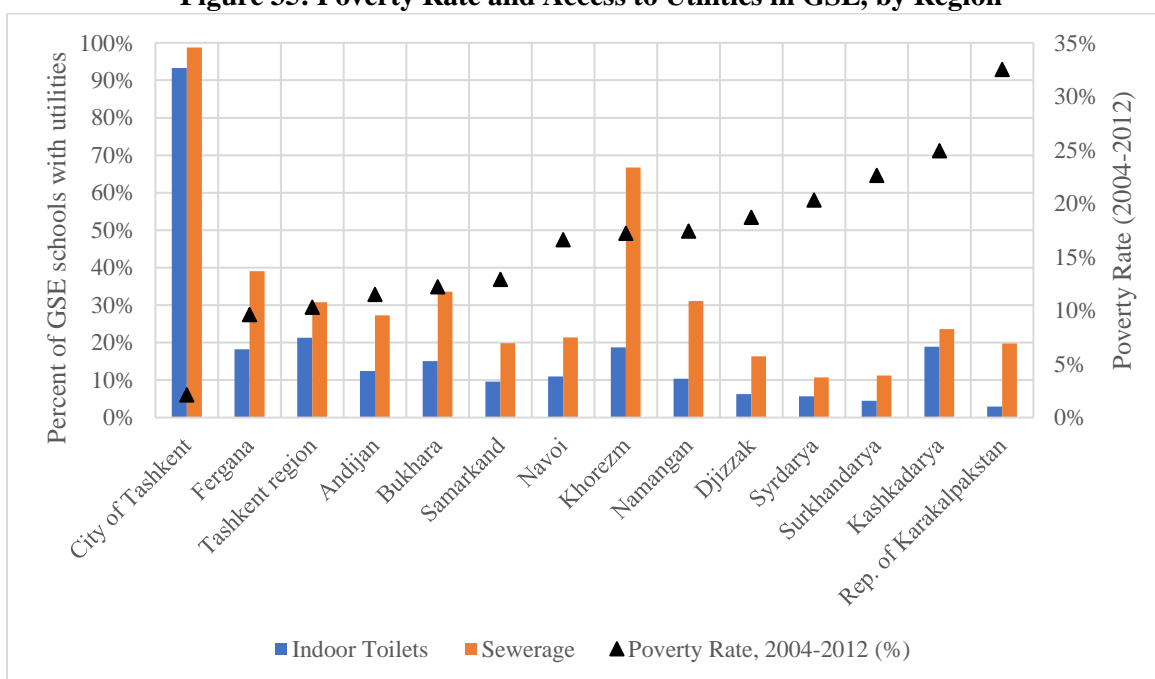
running water. While 90–100 percent of schools in some regions have access, the situation is considerably different in Bukhara (56 percent of schools have access), Samarkand (47 percent), and the Republic of Karakalpakstan (36 percent).⁸²

136. Access to sewerage systems and indoor toilets in GSE schools is even less common than access to running water: only 29 percent and 15 percent of schools have access to these two amenities, respectively.

Sewerage systems ensure that schools operate as modern, hygienic facilities for students as well as school staff. However, such systems are uncommon in Uzbekistan’s GSE schools, with the exception of Tashkent City, where nearly all schools have sewerage connections. In regions such as Surkhandarya, only 11 percent of public GSE schools have access to sewerage systems. The figures are even lower for indoor toilets, which facilitate student engagement and learning by avoiding the need for students to go outside under all weather conditions to use the toilet. A considerable amount of research indicates that indoor toilets are particularly important for the safety and privacy of adolescent girls. However, a 2011 study of WASH in nearly 200 Uzbek schools found that the majority of rural schools use pit latrines that are identical and adjacent for boys and girls. These are located 20–100 meters from the school building, and have no exterior doors or doors to separate squat holes (UNICEF 2011).

In Syrdarya, Djizzak, Surkhandarya, and Karakalpakstan Regions, no more than 10 percent of GSE schools have indoor toilets.

Figure 35: Poverty Rate and Access to Utilities in GSE, by Region



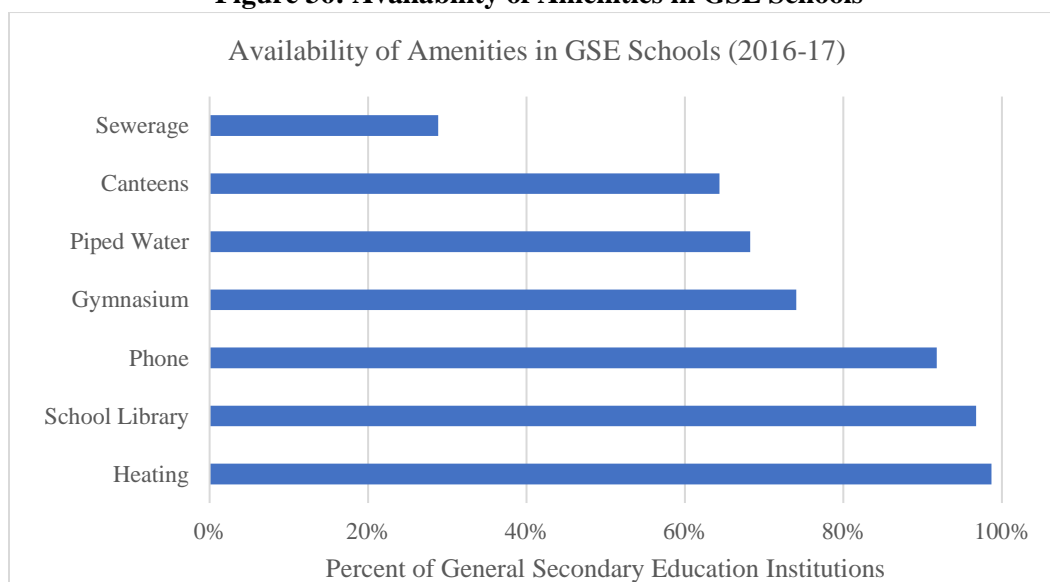
Source: Authors’ analysis of NSC data (2017/18 academic year)

137. On a positive note, many schools in Uzbekistan have access to additional amenities important to school climate and learning environments. As of the 2016/17 academic year, about two-thirds of GSE institutions have access to canteens, which are important for providing students with nutritional meals and promoting and reinforcing knowledge, skills, and behaviors about healthy eating and lifestyle choices

⁸² NSC data for 2017/18 academic year, provided through ESA data request.

taught in the classroom. However, over 30 percent of schools in Uzbekistan lack a hygienic area for food storage and preparation, a critical element of a child-friendly educational program (UNICEF 2009). In addition to canteens, nearly 75 percent of GSE schools have gymnasiums and over 90 percent have access to phone connectivity as well as school libraries. All three amenities contribute to a school’s learning environment and broader culture as a community of learners.

Figure 36: Availability of Amenities in GSE Schools

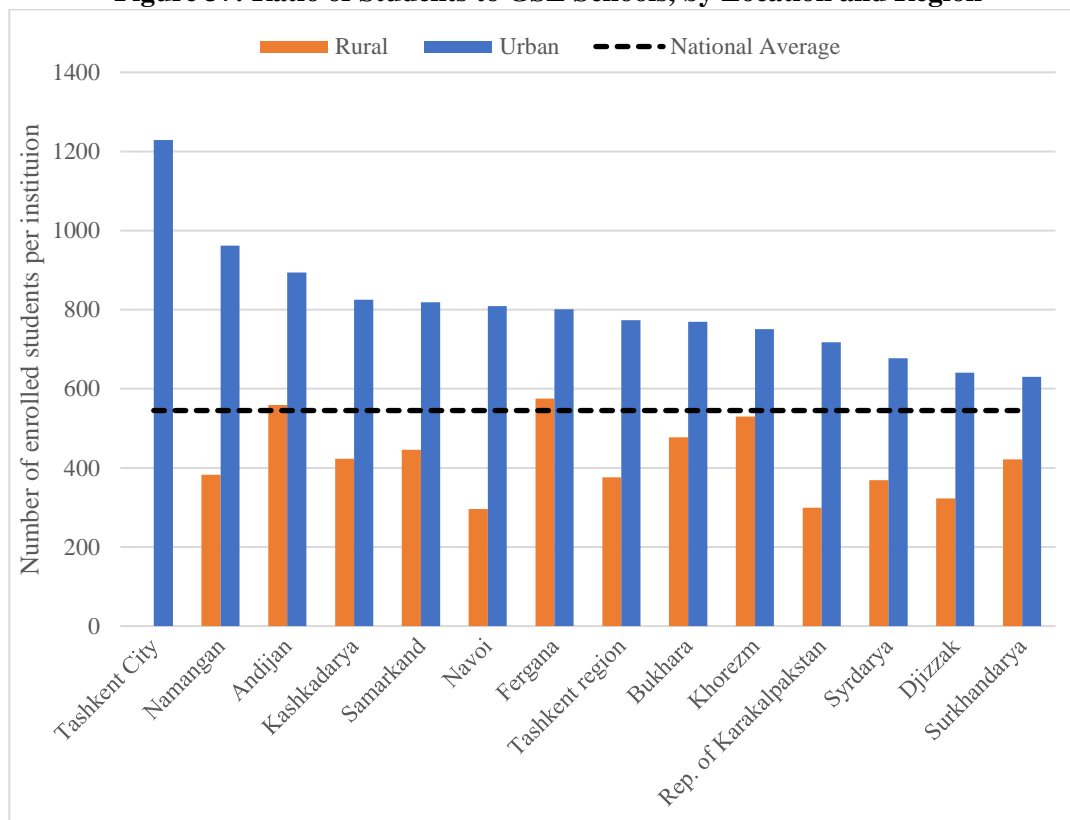


Source: Authors’ analysis of data from NSC Statistics Manual 2016

138. **In line with the growing trend for utilization of ICT in schools, Uzbekistan has taken concerted efforts to ensure widespread access to computers.** The share of GSE schools with computer laboratories increased from 78 percent in 2012/13 to 95 percent as of 2016/17, according to the NSC. Over the same period, the number of computers available in GSE schools increased by over 60 percent, resulting in a near doubling of the average number of computers per school. As of the 2016/17 academic year, the national average of computers per GSE school was 17.1, up from 10.5 in 2012/13. However, no such data are available by region and location (urban versus rural). Furthermore, the available information does not indicate the quality, age, or functionalities of these computers, or how these computers are used in the teaching and learning process. Therefore, more information is needed to understand how access to computers is impacting the learning environment in schools.

139. **Utilization of school learning environments in Uzbekistan varies considerably between urban and rural areas: urban GSE schools have approximately double the enrollment size of rural schools.** Without information on enrollment size at the school level, the ratio of enrolled students to the number of GSE schools in a given region, disaggregated by rural and urban areas, indicates how many students are enrolled in a given school on average. Unsurprisingly, urban schools are substantially larger than rural schools, enrolling over 800 students on average compared to rural schools (just over 400 students on average). However, important variation arises between regions (Figure 37). Tashkent City has a particularly high ratio of enrolled students to schools (1,229:1). On the other hand, the rural areas of smaller and less densely populated regions, such as Navoi and the Republic of Karakalpakstan, have a ratio of students to schools of around 300:1.

Figure 37: Ratio of Students to GSE Schools, by Location and Region



Source: MoPE data for 2017/18 academic year.

140. The considerably larger number of students relative to GSE schools in urban areas is addressed by wide-scale use of dual-shift schooling.

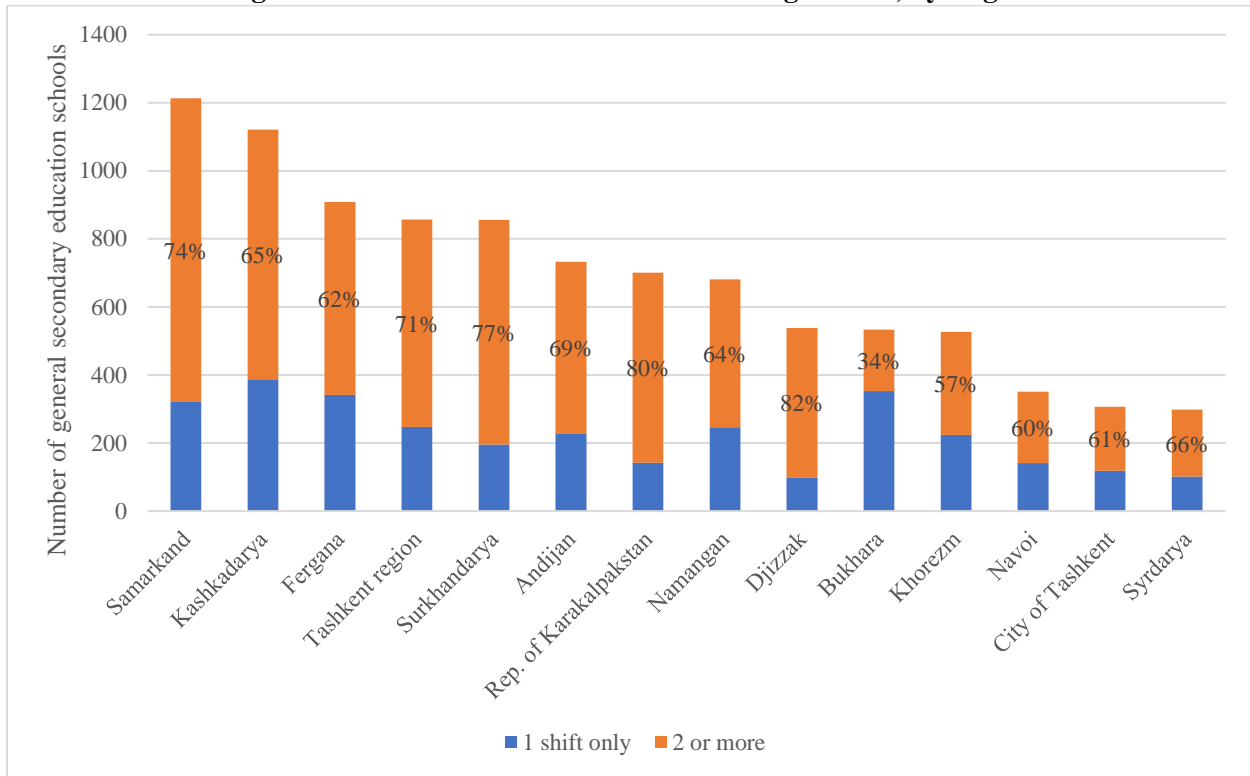
Dual-shift schooling is a common strategy to meet high demand for education in areas where school infrastructure is lacking or insufficient. However, intensive use of dual-shifting can also negatively affect a school’s learning environment. Data from the NSC show that the number of two-shift schools steadily increased over the last five years, while the number of one-shift schools declined.⁸³ As with other findings, the use of dual-shift schooling is more prevalent in some regions than others. In Bukhara, about one-third of GSE schools operate in multiple shifts, the lowest share of dual-shift schooling in all of Uzbekistan. In Samarkand, Surkhandarya, and the Republic of Karakalpakstan, however, between 75–80 percent of all GSE schools operate two or more shifts.⁸⁴ For vulnerable lagging regions, which also have higher population growth rates, this represents a major challenge. These students in vulnerable areas face a potentially lower-quality learning environment due to the intensive use of dual-shifting, but the growing population will further constrain learning environments as schools in already vulnerable areas struggle to meet the increasing demand.

Multiple shifting is a major issue in Uzbekistan’s GSE schools for two clear reasons. It affects the most vulnerable and is aggravated by demographic pressure.

⁸³ NSC Statistics Manual 2016-17 data for 2012/13 through 2016/17.

⁸⁴ Very few schools in Uzbekistan—less than 1 percent—operate in three shifts. About two-thirds operate in two shifts, while one-third operate with a single shift.

Figure 38: Prevalence of Dual-Shift Schooling in GSE, by Region



Source: MoPE data for academic year 2017/18.

141. The GoU’s plan to expand GSE to include grade 11 starting in the 2018/19 academic year could create additional strains on school infrastructure and learning environments, given that dual-shift schooling is already a widespread practice.

Assuming that the number and size of existing schools remain fixed, the establishment of grade 11 classes in GSE schools will create new pressures on many schools to find space to accommodate new students; yet many of these schools—about two-thirds of GSE institutions in the country—already operate in two or three daily shifts. Furthermore,

the student-age population in Uzbekistan continues to grow. For example, in the 2017/18 academic year, about 290,000 students are enrolled in grade 10, whereas over 630,000 children are enrolled in grade 1.⁸⁵ This means that the demand for schooling and the need for space to accommodate students, as well as teachers and other school staff, will continue to grow. Particularly with urban schools, education authorities will need to plan and manage space carefully to avoid extreme overcrowding and excessively large classes. New school facilities may be needed as well in selected regions of the country.

The expansion of the GSE system will create additional strains on school infrastructure and learning environments, particularly in areas already challenged in meeting demand. This issue calls for targeted interventions from the MoPE.

⁸⁵ According to MoPE data 2017/18, provided via ESA data request.

Secondary Specialized Vocational Education

142. **Overall, the physical conditions of buildings of Uzbekistan’s vocational colleges are satisfactory, but data show some clear needs to be addressed in the short and medium term.** Visits to colleges carried out to inform a rapid assessment of Uzbekistan’s VET system unveiled that the main infrastructure needs of vocational colleges include construction or renovation of sanitation facilities and renovation of workshops. One vocational college visited had one outdoor toilet for all 630 students and staff in the facility, while another college had one toilet for 370 students and staff. Additionally, information on learning environments in vocational colleges provided by the NSC and the CSSVE was analyzed for this review. These data show that all vocational colleges have at least one computer laboratory, along with a regular power supply (electricity) and Internet connectivity.⁸⁶ The average number of computers per vocational college increased steadily over the last five years, from 27 computers per college in 2012/13 to 33 as of 2016/17 (NSC Statistics Manual 2016-17). However, no information is available on the quality, age, or functionality of these computers, or how they are being used to support the teaching and learning process. Moreover, all vocational colleges have access to running water, and nearly all colleges have at least one library. Not all vocational colleges have workshops, but for those that do, about one-half of these workshops were equipped or added within the last five years. These data illustrate the GoU’s efforts to improve the physical conditions of schools and colleges in recent years.

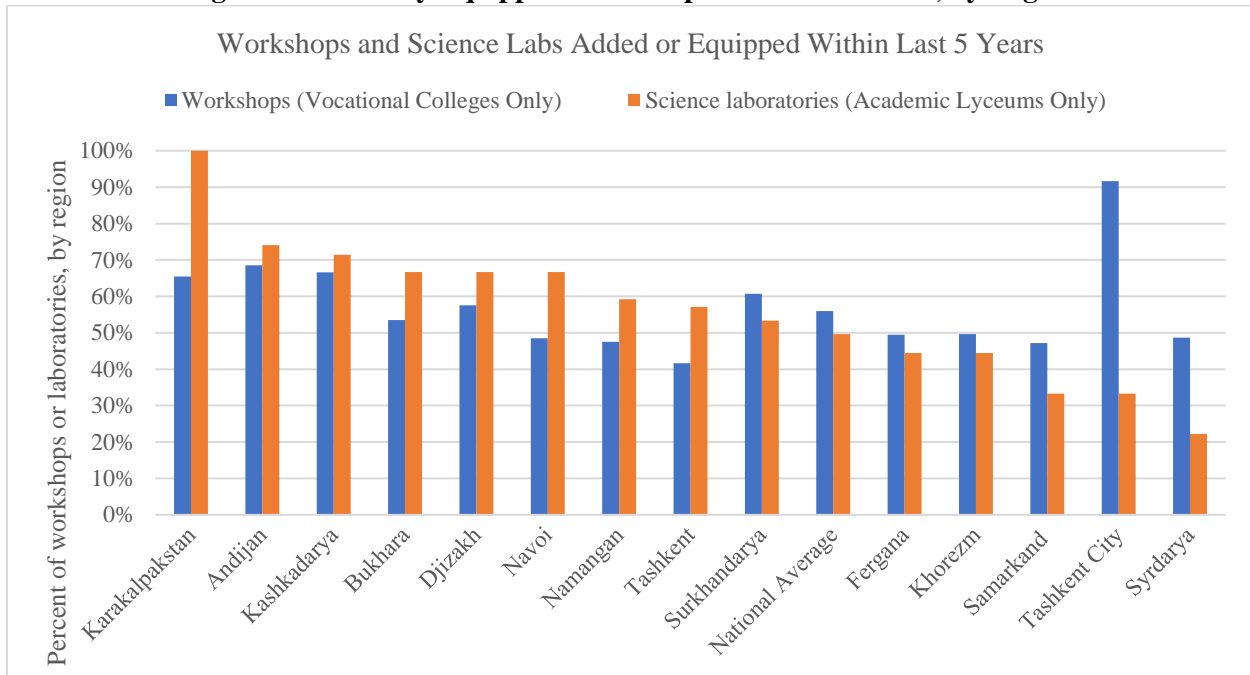
143. **Dormitory space does not appear to be a significant infrastructure need for vocational colleges in Uzbekistan.** According to the NSC, dormitories were available for 97,800 students enrolled in vocational colleges in the 2016/17 academic year, but only 53,400 of those spaces were occupied, reflecting an occupancy rate of about 55 percent (NSC Statistics Manual 2016-17). This means that only a small share (about 5 percent) of the total VET student population used these facilities. The most plausible explanation for the low number of students living in dormitories seems to be the dispersed network of over 1,400 vocational colleges, which means that students can commute to school rather than living in a dormitory (World Bank 2017b).

144. **As with vocational colleges, overall the physical conditions of existing academic lyceums appear satisfactory.**⁸⁷ All lyceums have running water, electricity, and adequate heating/cooling systems. All lyceums have a school library, as well as at least one computer laboratory. In 2016/17, 349 computer labs were distributed across 144 lyceums, which means that each lyceum has 2–3 computer labs on average. As with vocational colleges, the number of computers per institution has also increased over time, with an average of 40 computers per lyceum as of 2016/17 (NSC Statistics Manual 2016-17). Moreover, about 50 percent of academic lyceums were equipped with science laboratories over the past five years, compared with 56 percent of vocational colleges with workshops. However, significant regional discrepancies persist (Figure 39).

⁸⁶ Data for 2017/18, provided by CSSVE as part of ESA data request.

⁸⁷ In the 2017/18 academic year, Uzbekistan had 123 academic lyceums, down from 144 the previous year. For 2017/18 data, see <http://markaz.uz/en/orta-maxsus-kasb-hunar-talimi-markazi-faoliyatining-2015-2016-oquv-yilidagi-asosiy-korsatkichlari/>; for 2016/17 data, see NSC Statistics Manual.

Figure 39: Recently Equipped Workshops and Science Labs, by Region



Source: CSSVE data for 2017/18 academic year.

c. Quality of Higher Education

145. **Uzbekistan’s higher education quality assurance system does not currently conform to commonly accepted international standards.** External quality assurance is limited to a five-year attestation and state accreditation, and universities lack adequate internal quality assurance mechanisms. The higher education system is based mostly on inputs rather than outputs, although recent reforms have sought to incorporate more of the latter.

146. **Quality assurance responsibilities are shared by the CoM, the MHSSE, SISQE, the STC, and each HEI.** The CoM is responsible for establishing and reorganizing HEIs, defining licensing procedures, and approving the State Educational Standards as well as the quality assurance procedures and outcomes for HEIs and their programs. SISQE, which reports to the CoM, is responsible for implementing the state policy in the field of quality control of educational process.⁸⁸ The STC, which also reports to the CoM, is a single body responsible for organizing and conducting the state policy on higher education entrance exams.⁸⁹ The MHSSE is responsible for regulating student assessment at universities and each HEI is responsible for its own internal quality assurance. The key features of the quality assurance system in Uzbekistan are the State Education Standards, the student admissions and assessment system, the teaching quality assessments, the attestation and accreditation of HEIs, and the recent regulation on HEI ranking.

147. **The State Educational Standards are the core of the country’s current higher education quality assurance system.** The standards for higher education, legally set up by Decree of the CoM in 2001,⁹⁰ are updated and approved every year by the CoM. The State Educational Standards establish the

⁸⁸ Resolution of the Cabinet of Ministers No. 515 (July 18, 2017) <http://www.lex.uz/docs/3273612>

⁸⁹ Resolution of the Cabinet of Ministers No. 130 (February 20, 2018) <http://www.lex.uz/docs/3566142>

⁹⁰ Decree No. 343 (August, 2011), General Provisions, Annex 1.

basis for the quality of higher education for Bachelor's and Master's degree programs and each specific professional education field. At the same time, they define the requirements for the higher education degree in each field, including the structure and implementation of curricula, quality control of personnel training, learning outcomes, and descriptions of competencies.

148. Student admission tests are conducted by the STC once per year. While the regulation changed recently, it is still restrictive. Each student has the right to apply to only one public university and for only one discipline within that university. Additionally, each student can apply to nonpublic universities in parallel to that single targeted application for a public HEI. The test takes place in August of every year. There is no second choice or second chance in a given year. Thus, students who fail to gain admission to the chosen department have to wait for the next academic year to apply again. As a rule, students need to score more than 85 percent to study a traditionally lucrative field such as law, medicine, and business in HEIs specializing in these areas. Starting from the 2018/19 academic year, entrance exams to HEIs will be carried out from August 1–15,⁹¹ whereas past exams were administered on August 1). Other recent changes include the announcement of test results the next day after test application (before, it took about 15 days), as well as visual monitoring of the test-taking process. All of these measures are believed to increase efficiency and transparency in the admission test process.

149. Intermediate and annual assessments of higher education students are based on a five-point scale⁹² and evaluate knowledge, skills, and abilities as defined in a recent Presidential Decree. An MHSSE Order⁹³ established the methodology for these assessments. Students who receive a failing score are given an opportunity to improve their performance and may not progress to the next phase of their degree until they obtain a satisfactory score.

150. The teaching quality assessment is based on a report of each staff member's implementation of individual plans, designed every year to reflect State Educational Standard priorities, and on a normatively established workload distribution. This is complemented by a number of continuous monitoring activities conducted within each HEI and an anonymous survey of students on the quality of teaching received. Prior to the start of the academic year, all staff teaching in HEIs are required to develop an individual work plan that indicates activities to be performed and outcomes to be achieved in that year. These plans define how the total normative annual workload of 1,540 hours will be distributed among teaching, development of teaching materials, scientific research, management activities, and the moral upbringing of students. The main part of the workload is to be devoted to teaching. These plans are reported to the Department of Monitoring under the Office of the Rector in each HEI, and by the end of the academic year, each faculty member is required to prepare a report on the implementation of that plan. In these assessments a main indicator of teacher quality is the scores obtained by students in their annual assessment. The results of the implementation of the annual plans are accumulated in a Teacher Rating System to produce a score for each faculty member. These scores are used to determine if faculty members are recommended for promotion and a salary supplement or if their contract is terminated (World Bank 2014a). In addition to these reports, the quality of lectures is monitored and assessed through peer reviews over the academic year. Peer reviewers assess lectures in terms of their content, methodology, assessment, student performance, and compliance with the State Educational Standards.

151. The attestation of HEIs is based on existing State Educational Standards. SISQE is responsible for carrying out the HEI attestation as well as the accreditation of each education establishment in the country, regardless of its form of ownership and type. Attestation and accreditation of HEIs and of all other education establishments are regulated by the Resolution of the CoM

⁹¹ Presidential Decree No. 3389 (November 16, 2017) <http://lex.uz/docs/3413551>.

⁹² Presidential Decree No. 3775 (June 5, 2018) <http://www.lex.uz/ru/docs/3765586>.

⁹³ MHSSE Order No. 3069 (September 26, 2018) <http://www.lex.uz/ru/docs/3916793>.

from February 2006, which was recently revised.⁹⁴ Each HEI undergoes attestation every five years and its performance over the previous three years is taken into account. The attestation is based on various parameters such as: implementation of state standards into the education process, student performance, research-pedagogical capabilities of teaching staff, equipment available to students, integration of education with the production sector and research, partnership with professional colleges and lyceums, and cooperation with international entities. An attestation panel of SISQE makes a decision and grants the status of accreditation to those HEIs that meet the standards. If less than 67 percent of specialties of a certain HEI manage to attain attestation, the institution is not accredited. If 67–75 percent of all specialties attain attestation, then the university is conditionally accredited. An HEI is accredited if at least 75 percent of its specialties successfully attain attestation (World Bank 201b).

152. Uzbekistan’s universities are classified according to a ranking whose requirements were established in 2012 and recently updated. CoM Resolution No. 371, “On Introduction of Ranking System for the Higher Educational Institutions of the Republic of Uzbekistan” from 2012, established the creation of university rankings. Its primary objective was to measure the quality of scientific and teaching activities according to criteria aligned with international practices. This resolution is still valid, but a revised resolution was drafted and made available for public discussion until October 13, 2018⁹⁵; discussions closed on October 13, 2018. Resolution No. 371 will be cancelled upon approval of this new resolution.

153. According to a Joint Resolution issued by SISQE and the MHSSE dated March 7, 2018, on “Regulation for Identifying University Ranking,”⁹⁶ HEIs should be ranked according to four criteria and their subcomponents. The results of the classification of state-funded HEIs were announced in July 2018. The National University of Uzbekistan featured first in the ranking and only one university not based in Tashkent City is ranked in the top 10 (Samarkand State University, in fifth position). Most of the highly rated institutions specialize in medical and technological fields. It is worth noting that nonpublic or branches of international universities were not included in this exercise. The ranking is based on 23 indicators clustered in four major areas, as described below:

- First cluster: This cluster accounts for 65 out of 190 points and assesses teachers’ scientific activity through the:
 - Percentage of teachers with scientific degrees who hold a PhD or DSc title from the world’s top 1,000 universities;
 - Percentage of teachers who participated with lectures (seminars, practical works, trainings) in the world’s top 1,000 universities in the year of assessment;
 - Scientific potential of teachers (percentage of teachers with a DSc or PhD degree);
 - Efficiency of defending doctoral dissertations by teachers;
 - Citations to the scientific publications of HEI teachers according to international indicators;
 - Number of published scientific articles and monographs in international and local journals and publications;
 - Obtained financial resources by submitting scientific research works and introducing the research works into practice;
 - Effectiveness of scientific research works;
 - Share of teachers awarded in international and republican competitions;
 - Assessment of teaching quality of teachers and their knowledge of foreign languages and ICT.

- Second cluster: Accounting for 57 points, this cluster reflects the assessment of teaching methodological works and quality of education, as measured by:

⁹⁴ Resolution of the Cabinet of Ministers No. 21 (February, 10, 2006) <http://lex.uz/docs/973499>.

⁹⁵ See <https://regulation.gov.uz/ru/document/735>

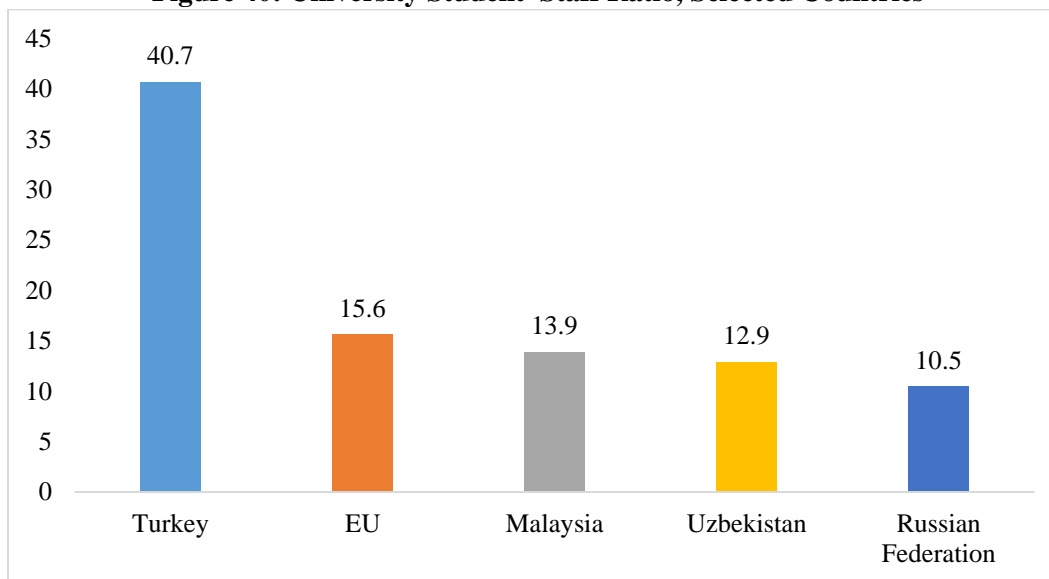
⁹⁶ <http://reyting.tdi.uz/upload/method.pdf>.

- Teaching quality level (teaching environment, quality of classes, student assessment);
 - Publication of textbooks and study guides by teachers of HEIs;
 - Share of foreign students and teachers;
 - Participation of teachers and students in exchange programs with foreign HEIs;
 - Number of disciplines instructed in foreign languages (in % out of total number of disciplines).
- Third cluster: Accounting for 53 points, this cluster assesses a university's students and graduates on the basis of:
 - Assessment of graduates on major subjects;
 - Share of graduates employed after graduation;
 - Number of international and national prizes won by students;
 - Rate of admission to HEIs of university academic lyceum graduates;
 - Impermanence of young specialists in university (% of dismissed young professionals, up to age 35, for last three years).
- Fourth cluster: Accounting for 15 points, this cluster assesses the material technical base of the HEI through:
 - Availability of modern ICT and presentation devices for the teaching process;
 - Availability of appropriate lab equipment and tools for laboratory exercises required in study programs;
 - Quality of the university's website.

154. **The introduction of the ranking system shows that Uzbekistan's quality assurance system is in transition.** The aims and types of indicators included in the rankings signal a shift in the assessment of quality, moving away from a system focused on measurement of inputs to a more output-based system focused on student assessment of teacher quality, the rate of graduate employment, and employer surveys. This change marks a step toward making higher education in Uzbekistan more relevant, but granting universities more autonomy to act on these results to tailor their programs could be also crucial to address the demands of higher education graduates in a rapidly changing economy.

155. **The ratio of university students to academic staff in Uzbekistan is low, but enrollment in HEIs is equally low, as mentioned in the section on access.** The average ratio of students to academic staff in Uzbekistan was around 13:1 in 2017. It is usually considered that ratios above 20 students per academic staff may affect the quality of learning. However, a low ratio may also indicate inefficient use of resources. In Uzbekistan, Samarkand Region has the lowest ratio, with almost 10 students per academic staff; Surkhandarya Region has the highest ratio, with 15 students per teacher. The EU average was 15.6 in 2015, with the highest student–staff ratio recorded in Croatia (74.5). Ratios of more than 20 students per staff member were also recorded in Greece, the Czech Republic, Belgium, and Italy (Figure 40).

Figure 40: University Student–Staff Ratio, Selected Countries

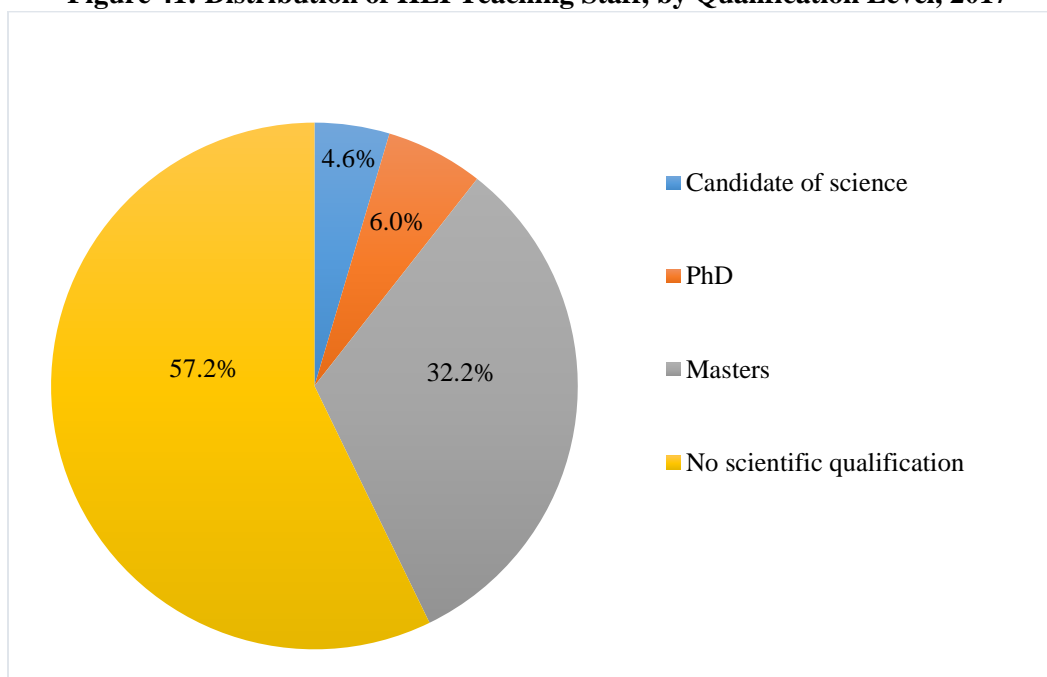


Source: Authors, based on NSC 2018 and UNESCO UIS 2018.

Note: Data for Uzbekistan are as of December 2017; data for Turkey, the Russian Federation, and the EU are for 2015; and data for Malaysia are for 2016.

156. **More than 50 percent of all academic staff on Uzbek universities do not have scientific qualifications.** This can be measured by looking at the share of teachers with a postgraduate degree. According to NCS data, only one in ten teaching staff in Uzbekistan’s universities had a PhD or Candidate of Science degree in 2017. Twenty-five percent of the teaching staff in 2017 were either professors or associate professors, which suggests that a number of these had no scientific qualifications. Furthermore, teaching staff with scientific qualifications are concentrated in Tashkent City, where 3,524 members of HEI staff hold either a PhD or a Candidate of Science title. This represents 14 percent of the entire numbers of HEI staff at national level. Samarkand Region is next – only 873 staff in its HEIs have these scientific titles, representing 3.5 percent of the total population of HEI teachers. At the bottom are Surkhandarya and Syrdarya Regions, with 132 and 90 staff with these qualifications, respectively, or just 0.5 percent and 0.3 percent of the national total of HEI staff (NSC 2018).

Figure 41: Distribution of HEI Teaching Staff, by Qualification Level, 2017



Source: MHSSE data.

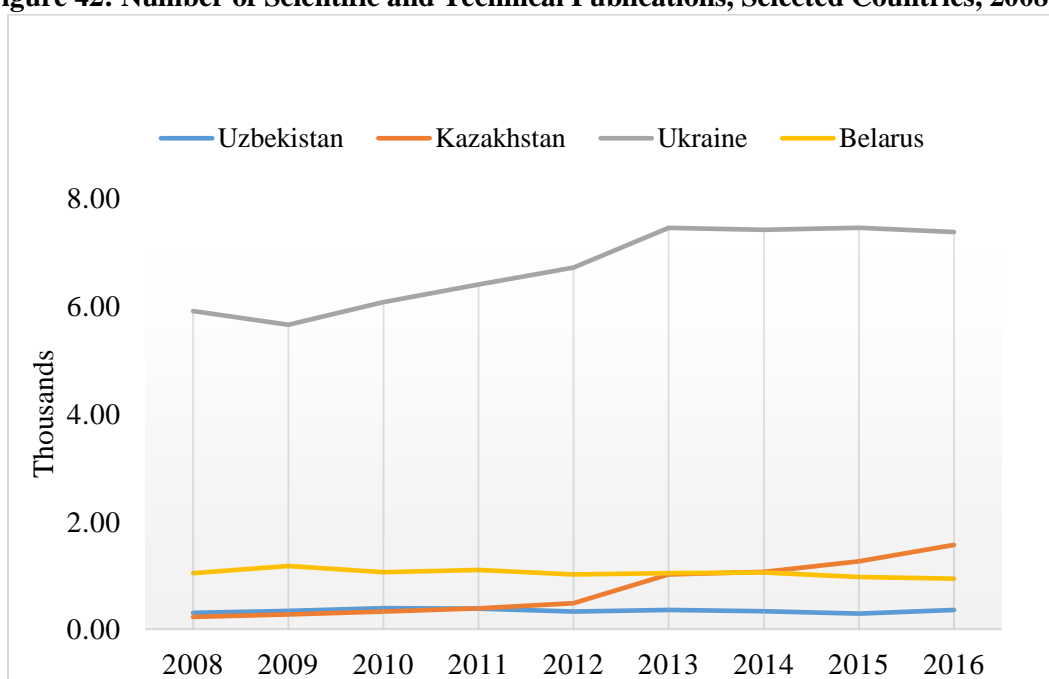
157. **The scope of innovation in teaching is limited in Uzbekistan. The State Educational Standards centrally define the curriculum; HEIs and their staff have little flexibility to adjust it.** HEIs may introduce only a 5 percent change in the standard curriculum. This may lead to a prevalence of outdated curricula, disconnected from the needs of a changing society. The State Educational Standards also have essentially no provision for optional subjects, further limiting the breadth of topics and skills that can be studied in higher education courses (World Bank 2014b).

158. **Low levels of internationalization also affect higher education quality, as having few linkages with international academia reduces the chance of learning exchanges.** It is worth mentioning that Uzbekistan's HEIs do offer courses in a variety of foreign languages including Russian, English, and Kazakh. In fact, in the 2017/18 academic year, 77.7 percent of students studied in Uzbek language, 14.9 percent in Russian, 2.9 percent in English, and 2 percent in Kazakh (NSC 2018, 184). Moreover, the absolute number of international students in Uzbekistan HEIs increased by almost 40 percent in the past five years. However, only 0.2 percent of those enrolled in higher education were international students in the 2017/18 academic year. In countries such as the United States and the Russian Federation, international students in tertiary education account for 5 percent and 4 percent of the student population, respectively. Other countries with higher rates include Turkey (1.2 percent of international higher education students), South Korea (1.7 percent), and Kazakhstan (2.2 percent).⁹⁷ Higher education systems can also benefit from internationalization achieved via links developed through academic staff members' exchanges and publications in foreign languages, as well as through the development of partnerships with foreign HEIs. Uzbekistan has seven branches of foreign HEIs, and according to national statistics, nearly one-third of higher education staff publications are international. The existing information is scarce regarding partnerships between domestic and international HEIs, and data on international publications are not internationally comparable.

⁹⁷ Authors, based on UNESCO UIS data.

159. **No Uzbek university places in the two most well-known university rankings.⁹⁸ Moreover, the number of scientific publications produced by Uzbek higher education staff every year has remained low over time, and is lower than that of other CIS countries.** Uzbekistan made little progress in increasing its research outputs in the past years. International databases show that in 2008, 300 scientific and technical journal articles were published by Uzbek higher education staff, a figure that rose to only 357 articles in 2016.⁹⁹ Taking into account population growth, this means that in 2016, the number of scientific and technical articles published in Uzbekistan was around 11 per million inhabitants, a similar figure as in 2008. Meanwhile in Kazakhstan, research publication numbers grew in absolute terms from 227 to 1,564. Relative to its population, Kazakhstan published eight times more articles in 2016 than Uzbekistan did – that is, 88 articles per million people. In the region, Belarus’s publication levels remained similar for the past decade; in 2016, 99 articles per million inhabitants were produced. In Ukraine and Turkey, not only are publication numbers at much higher levels but their publication outputs also increased in the past decade. By 2016, 164 and 426 articles per million inhabitants were published in those countries, respectively.¹⁰⁰

Figure 42: Number of Scientific and Technical Publications, Selected Countries, 2008–16



Source: World Development Indicators.

160. **The GoU recently adopted measures to increase the number of PhD students and ultimately the quality of HE.** By the end of the 2016/17 academic year, the number of PhD students increased by more than six times compared to 2010 (from 217 to 1,370 students). The number of HEIs offering doctoral studies in 2016 amounted to 128, an increase of 1.6 times compared to 2000. However, the share of higher education students enrolled in PhD programs decreased from 1.0 percent in 2011 to 0.5 percent in 2016. In countries like Russia and the United States, around 2 percent of the higher education student body is pursuing doctoral studies. In Malaysia this figure is 2.2 percent, while in China it is 0.8.

⁹⁸ The *Times Higher Education World University Rankings* and the *Academic Ranking of World Universities* (or the Shanghai Ranking).

⁹⁹ MHSSE data.

¹⁰⁰ World Development Indicators (WDI) and authors’ calculations based on WDI.

161. **The number of patents registered in Uzbekistan is small, revealing another dimension of higher education quality.** In Uzbekistan, only 353 patents were filed in 2016, again only around 11 per million inhabitants. This marks a sharp drop from the 2,136 patent applications made in 1994. Countries like Brazil (which at 2,429 had a similar number of applications per year as Uzbekistan in 1993) and Turkey (which at 151 in 1994 was far behind Uzbekistan) have grown exponentially since then. Improving the innovation environment of Uzbekistan can be crucial to meet the needs of a rapidly changing economy, hence the importance of enhancing the research capacity of Uzbekistan’s HEIs.

162. **Available data of HEI infrastructure show various needs to be addressed in the short term.** While all universities have at least eight hours of Internet connection per day, the ratio of higher education students to computers is 15:1. Currently in Uzbek HEIs, 1,377 classrooms (laboratories) are equipped with computers. The GoU is committed to improving the infrastructure conditions of Uzbek HEIs. Decree No. 1533 on the “Modernization of Material and Technical Base of the Higher Educational Institutions” aims to develop universities’ human and technical resources to address the needs of priority economic sectors. Moreover, a Credit from the World Bank was approved in 2016 to support improvement of HEIs’ science and research laboratories (World Bank 2016).

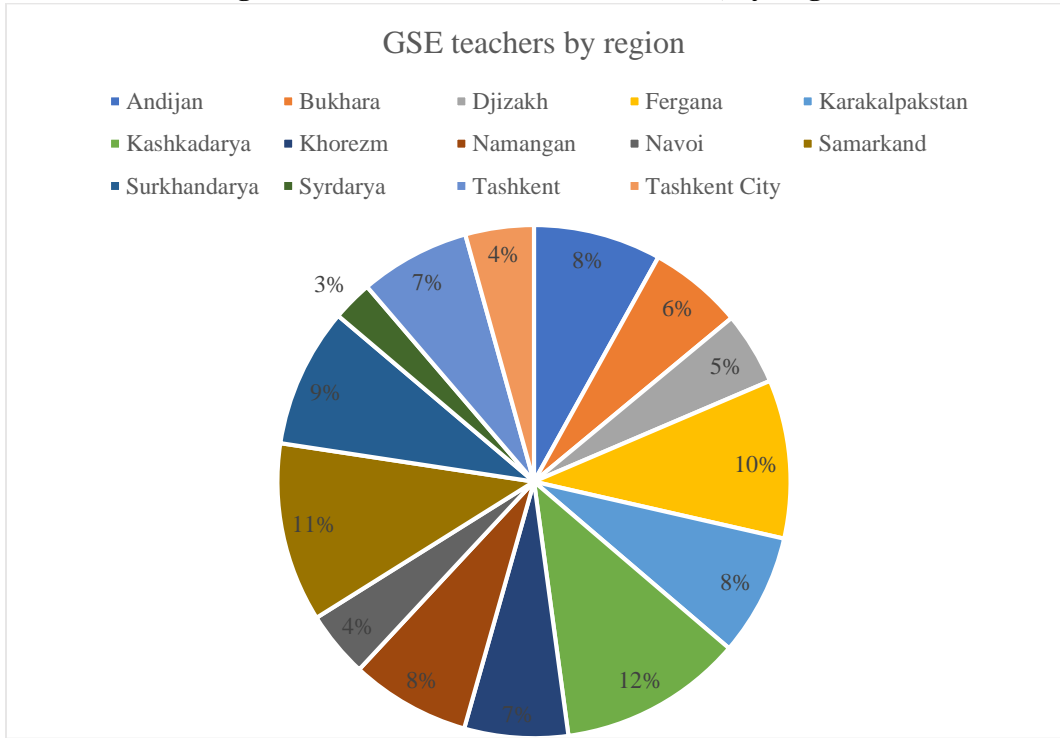
c. Teacher Quality and Service Delivery

163. **One of the biggest challenges being faced in Uzbekistan’s education system is about teachers. This is especially challenging as it relates to the ambitious goals of the ongoing reforms in preschool, general secondary and vocational education, the required number of teachers needed for the implementation of these reforms, as well as their qualifications and prestige.** As mentioned in previous sections of this report, the country’s growing population and expanding education system call for more teachers in the short- and medium-terms. The massive expansion of preschool education and the introduction of grades 10 and 11 in general secondary education are clear evidence on such need. Diverse alternatives to help address this challenge are being considered by the GoU and these include the revision of existing pre- and in-service teachers training programs. Moving forward with the development and implementation of these programs, it is advisable to pay close attention not only to the number/quantity of teachers to be attracted to the system, but also to their qualification and prestige. An analysis of data on teachers that was made available for the preparation of this report as well as of key existing teachers policies is presented in this section.

Teachers’ Workforce in Uzbekistan

164. **Around 400,000 teachers for grades 1–9 are deployed in GSE schools in Uzbekistan, with a relatively even regional distribution.** The regions with the highest concentrations of teachers are Kashkadarya, Samarkand, and Ferghana, with 12 percent, 11 percent, and 10 percent of the teacher workforce, respectively (Figure 43). These three regions together account for one-third of the teacher workforce. Regions with the lowest concentrations include Syrdarya (3 percent) and Tashkent City and Navoi Region (both with 4 percent).

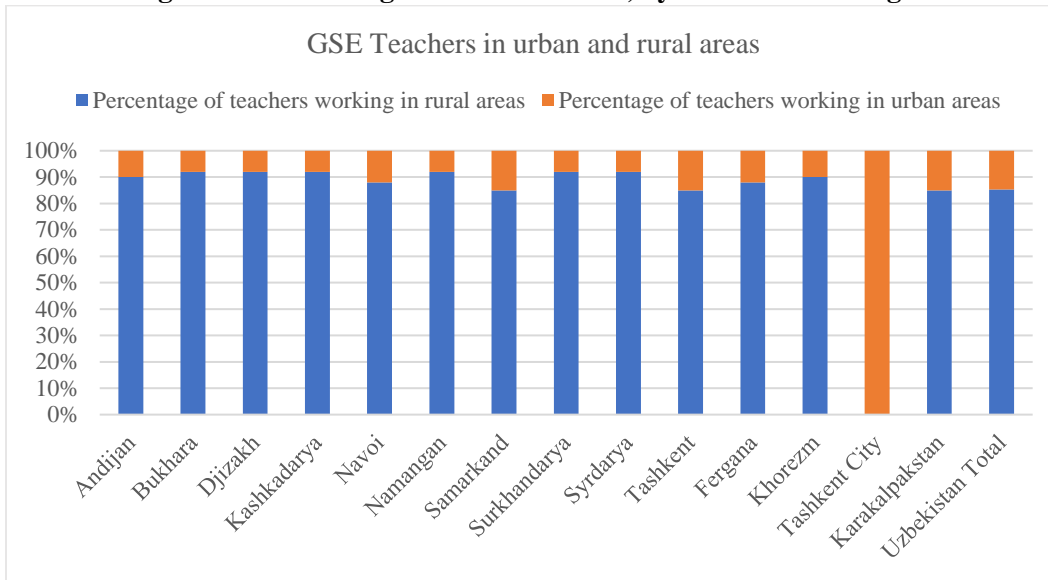
Figure 43: Distribution of GSE Teachers, by Region



Source: MoPE 2018.

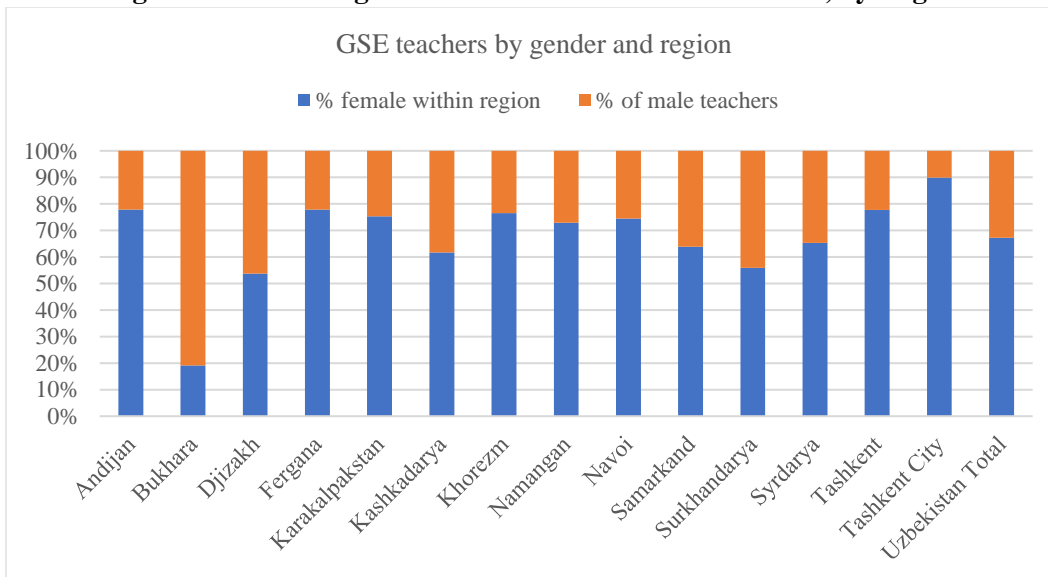
165. **However, teachers’ distribution reveals urban–rural differences (85 percent of GSE teachers work in schools located in rural areas), as well as gender dynamics (a higher concentration of female teachers).** Bukhara, Djizak, Kashkadarya, Namangan, Surkhondaryo, and Syrdarya Regions have the highest concentration of rural teachers – as much as 92 percent (Figure 44). This high proportion of teachers in rural areas can pose several challenges for the MoPE to provide those teachers with materials, professional development opportunities, and support mechanisms. A high percentage of GSE teachers are women and most regions have a higher concentration of female teachers than of male teachers. The only exception is Bukhara Region, where only 19 percent of teachers are women. In the rest of the country, the concentration of female teachers ranges from 54 percent to 90 percent (e.g., in Tashkent City) (Figure 45).

Figure 44: Percentage of GSE Teachers, by Location and Region



Source: MoPE 2018.

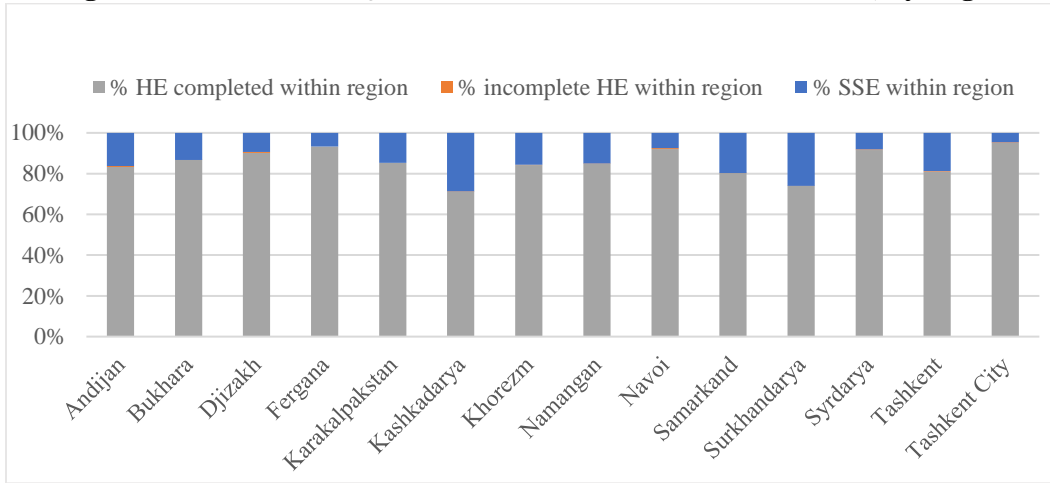
Figure 45: Percentage of Female and Male GSE Teachers, by Region



Source: MoPE 2018.

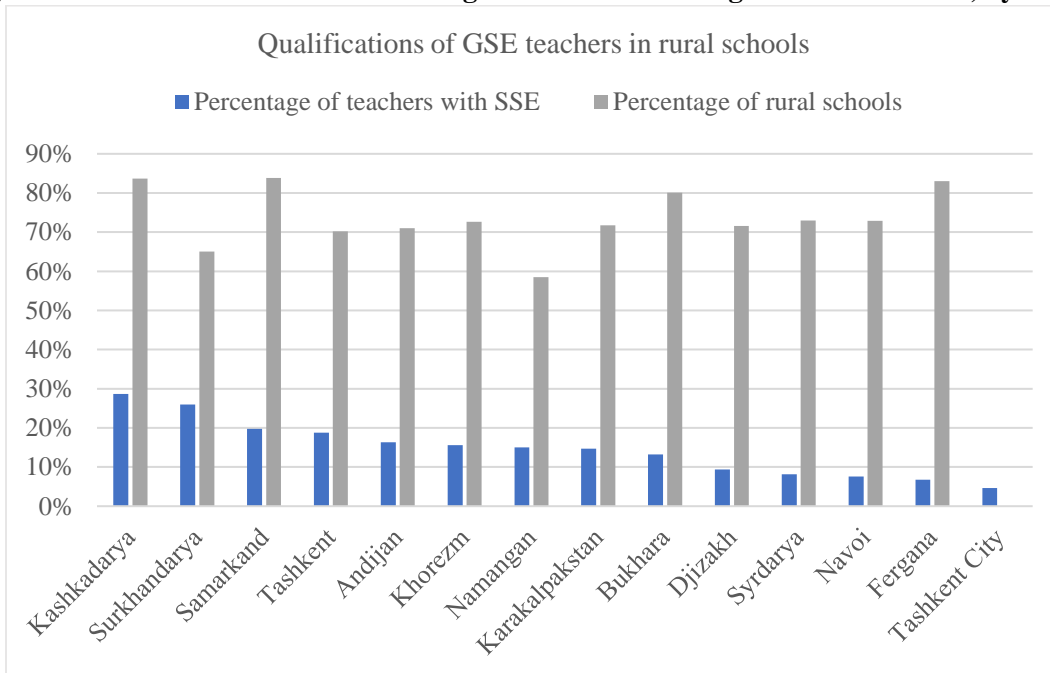
166. Data available for the preparation of this report show that although overall the average share of teachers with a higher education degree is high nationwide, in some regions more than 25 percent of GSE teachers do not have such a degree. In most regions, over 80 percent of teachers are qualified (have a higher education degree), but 16.3 percent of teachers hold only an SSVE diploma. The Republic of Karakalpakstan and Surkhandarya Region have the least qualified teachers: 28.7 percent and 25.9 percent of their teachers, respectively, do not hold a higher education degree. In this sense, unqualified teachers are not necessarily located in regions with primarily rural schools (Figure 46).

Figure 46: Educational Qualification of GSE Education Teachers, by Region



Source: MoPE 2018.

Figure 47: GSE Teachers with SSVE Degree Versus Percentage of Rural Schools, by Region



Source: MoPE 2018.

167. **In SSVE, one out of every three teachers does not hold a higher education degree, indicating that quality is a concern in this subsector.** According to the MHSSE, in the 2017/18 academic year, 106,279 teaching staff were working in SSVE in Uzbekistan, including 16,456 Master’s degree holders (practical training teachers), with more than one-third holding higher education degrees (31 percent). Almost 90 percent of teaching staff are employed full time, and almost one-half are women. Of Master’s degree holders (practical training teachers), the share of female teachers is considerably larger at almost 70 percent. Uzbekistan’s SSVE teaching workforce is young – over 50 percent are less than 45 years old, while the average years of teaching experience is 12, and overall average work experience is 15 years. Almost 80 percent of teachers teach in Uzbek, while only 3 percent teach in Russian.

Analysis of Teacher Policies

168. Policies to attract, retain, and develop the best teachers into the teaching profession are important for student learning. Teachers are the most important factor determining student learning outcomes (Hanushek, 2011; Hanushek & Rivkin, 2010; Hanushek & Rivkin, 2012). International evidence suggests that exposure to high-quality teachers (i) affects children’s ability to control their thoughts, actions, and emotions, which are key for learning, (Araujo et al.) and (ii) is associated with their students’ opportunities to access higher education and even higher future earnings (Chetty, Friedman, & Rockoff, 2014; Chetty, Friedman, & Rockoff, 2012). Since teachers are key for student learning, education systems across the globe have made efforts to design and implement policies to increase the effectiveness of the teaching force, including: (i) rigorous teacher selection processes; (ii) useful pre-service training and professional development; (iii) teacher assessments aligned with standards and curriculum; (iv) attractive career development opportunities; and (v) adequate salaries and incentives linked to performance (Vegas, et al., 2013). An analysis of teacher policies follows.

169. Uzbekistan’s selection process for preschool and GSE teachers is not rigorous enough to attract the best candidates. In high-performing education systems, teaching positions are widely advertised and rigorous selection processes ensure that the most qualified and effective candidates are designated. These requirements may include multiple conditions¹⁰¹ and in successful education systems teachers need to comply with various stringent requirements. Selection processes should also be transparent and comprehensive. In Uzbekistan, the minimum academic requirement to become a GSE teacher for grades 1–4 is an SSVE degree in teaching, composed of a three-year diploma (until the 2017/18 academic year) in which students learn about subject-knowledge and pedagogical skills. To teach grades higher than 4, a Bachelor’s degree in Education is mandatory. The GoU recently raised the requirements to become a preschool teacher and a Bachelor’s degree is now required. In addition, at all levels, principals are directly responsible for hiring teachers. Oftentimes, potential candidates learn about new openings by word of mouth. Once applicants have submitted their application materials, principals review their profiles and conduct interviews. This selection process, without stringent requirements and clear and comprehensive guidelines for teacher hiring, may be affecting Uzbekistan’s capacity to attract the most qualified candidates to the teaching profession.

170. Moreover, the requirements to enter initial teacher education programs are fundamental to ensure that good candidates are admitted into the workforce. In addition to stringent selection processes to enter the teaching profession, high-performing education systems establish high requirements for teacher education programs’ candidates and put in place incentives to attract the best high school graduates to enroll. These requirements may include: a minimum high school grade, high scores on entrance examinations, and outstanding performance in interviews, among others. In Finland, for instance, only 10 percent of applicants are admitted into teaching programs (Box 3). However, no data on entrance examinations were made available for the preparation of this ESA Report, so it is not possible to identify the profile of candidates who apply for teacher education programs and compare it with other progressions.

¹⁰¹ Including (i) a tertiary education diploma – at least a Bachelor’s program, but often a Master’s degree is also required; (ii) an assessment of teachers’ knowledge, in particular of the subject that they will teach; (iii) specific amounts of practical experience in the classroom; and (iv) an assessment of a teaching portfolio with lesson planning samples, and practical experience, among others.

Box 3: Teacher Selection and Pre-Service Training in Finland

In 1970, Finland undertook a reform that strengthened teacher education and made the selection process highly selective. The teaching profession was raised to the university level. At present, primary school teachers are required to have a Master's degree to enter the profession, while preprimary and vocational teachers are required to have at least a higher education degree.

Only about 10 percent of candidates who apply to study teaching are selected to enter the education career. The student selection process is stringent and includes: (i) an evaluation to assess applicants' learning skills; and (ii) tests to assess applicants' skills, motivation, and commitment to student learning.

Teacher pre-service training is research-based and includes strong theoretical and practical training with an emphasis on the practicum, through which teacher candidates practice their teaching skills in front of peers and a group of students. In addition, teachers are trained to tailor their teaching skills to different learning needs and styles.

Source: OECD 2013.

171. Teacher education programs in Uzbekistan include training in both pedagogical practices and content-knowledge. The Bachelor of Education degree program consists of four years, with 204 weeks in total during which students receive both theoretical and practical training, the latter for approximately 16 weeks. In addition, teaching students participate in 20–25 classes of 45 minutes each as observers to learn from more experienced teachers. Induction programs exist, but the focus is on how to follow administrative procedures, rather than on teaching and learning.

172. Although professional development opportunities are in fact mandatory in Uzbekistan, these seem limited compared with high-performing countries. High-performing education systems mandate teachers to devote time to professional development. For example, Singapore invests 12 days per year of teachers' time to professional development, while Shanghai dedicates 33 days, Japan 10, and Norway 6 (World Bank and UNESCO, 2015). In Uzbekistan, every five years teachers are obliged to participate in 144 hours of professional development carried out over 36 hours per week for four weeks. The content of training includes both subject-knowledge and pedagogical skills.

173. Collaborative professional development practices, such as mentoring and coaching, are not included in any professional development opportunities provided to teachers in Uzbekistan. International evidence shows that collaborative professional development, including mentoring, coaching, best practice sharing, and participation in professional networks, can improve student learning outcomes (see the experience in Singapore in Box 4). While initiatives exist for teachers to meet their peers teaching the same subject in the same school or district with some regularity, these practices are not compulsory in Uzbekistan, and their implementation has not been assessed (Barber and Mourshed 2007).

Box 4: Useful Training Experiences in Singapore

In Singapore, teaching students undergo a four-year education program, while graduates from other professions can undergo the two-year Diploma in Education Program, or the one- to two-year postgraduate Diploma in Education.

Students of the four-year program spend nearly 240 hours in pedagogical theory, 480 hours in teaching methods, and 96 hours in language, mathematics, and/or sciences training. In addition to theoretical training, they undergo 20 weeks in total of practicum, which they undertake at regular intervals. Similarly, education students in the one-year graduate program undertake a ten-week practicum.

All teaching candidates from all programs are expected to keep a reflective portfolio to document their journey as an education professional, from initial teacher preparation to the more advanced stages of their careers. This provides a platform for discussion with their supervisors and coordinating mentors from the schools in which they undertake practicum training.

Several initiatives in recent years have emphasized professional development, including:

- *The TEACH framework*: Created in 2011, this framework presents the Ministry's commitment toward supporting teachers as they grow their careers in the education service. The framework includes engagement with dedicated human resources partners for school leaders and multiple engagement points for teachers.
- *The Academy of Singapore Teachers*: This academy, with its dedicated Subject Chapters and Professional Learning Communities, works to foster a teacher-led culture of professional collaboration and excellence.
- *The Teacher Growth Model*: Created in 2012, this model focuses on continuous learning.

In Singapore, collaborative learning is an important element of professional development. In 1998 the Teachers' Network, now the Academy of Singapore Teachers, developed an initiative to collectively upgrade the professional expertise of teachers by way of a ground-up initiative whereby best practices and innovative pedagogies are exchanged and developed.

Moreover, various types of professional development methodologies are made available to suit teachers with diverse learning needs. This is actively recognized under the Teacher Growth Model, which encourages teachers to pursue their own personal development through a self-developed balance of training, mentoring, research-based practice, and networked and experiential learning.

Source: World Bank and UNESCO 2015b.

174. Teacher evaluations are carried out to inform teacher promotions and permanence in the profession in Uzbekistan. International evidence shows that adequate systems to monitor teacher performance improve teacher effectiveness (Duflo, Hanna, and Ryan 2008; Taylor and Tyler 2011), and are key to guiding improvement efforts. Attestations (teacher evaluations in Uzbekistan)¹⁰² are mandatory for all teachers of all levels. They are carried out every five years for preschool and GSE teachers, and every three years for SSVE teachers, although new teachers participate in attestation processes within a year of their hiring by the school principal.

175. Teacher attestations incorporate both knowledge evaluations and assessments of teachers' pedagogical skills. The attestation consists of two steps: (i) subject-knowledge testing in which expert groups assess the teacher's knowledge of the subject s/he teaches; (ii) assessment of the teacher's skills, social and political knowledge, and ICT skills. For the second phase, evaluation instruments include: (i) an interview; (ii) class analysis; (iii) classroom observations; (iv) results of student performance evaluations; (v) assessment of the use of tools and teaching learning materials; and (vi) assessment of pedagogical skills

¹⁰² According to Cabinet of Ministers Resolution No. 107, approved in April 2016.

(e.g., use of interactive teaching methods, practical games, etc.). In this sense, attestations in Uzbekistan are aligned with international evidence that suggests using several sources of information, including results of student learning assessments.

176. **However, while teacher assessments are undertaken in Uzbekistan, a long time can elapse before action is taken to correct deficient performance.** Teacher evaluations in high-performing education systems have consequences for teachers who excel and for those who underperform. In these systems, outstanding teachers are promoted and can continue to ascend in the teaching profession to earn higher salaries, while underperforming teachers receive tailored professional development to help them improve. In fact, chronically underperforming teachers can even be fired to avoid students’ exposure to ineffective professionals. In Uzbekistan, teachers can be downgraded to a lower level category within the teaching career when they underperform in attestations, and once they reach the lowest level, they can ultimately be fired from the profession.¹⁰³ However, since attestations take place every five years, ineffective teachers can remain in the classroom affecting their students’ learning for several years before concrete action is taken.

177. **Teacher promotions are based on attestation results, but few levels exist within the teaching career.** The teaching career in Uzbekistan consists of four levels¹⁰⁴: (i) Regular or Specialist teacher; (ii) Second category or Senior teacher; (iii) First category or Leading teacher; and (iv) Highly qualified teacher. Horizontal promotions from one level to the next within the teaching profession occur in Uzbekistan, and depend on teachers’ performance in attestations. Only teachers with a score of 75 percent or higher in the attestation can be promoted to the next teaching level.

Table 5. Consequences of Performance in Attestations

Teacher level	Score	Consequence
Highly qualified teacher	75% or above	Remain in this level
First category / Leading teacher	Above 75% 65–75 % Below 65%	Promoted to the next level Remain in this level Downgraded to Second category teacher
Second category / Senior teacher	Above 75% 65–75% Below 65%	Promoted to the First category teacher Remain in this level Downgraded to Specialist teacher
Regular / Specialist teacher	Above 75% 65–75% Below 65%	Promoted to Second category teacher Remain in this level A teacher who scores below 65% in two consecutive attestations can be fired

Source: Cabinet of Ministers Resolution No. 107, approved in April 2016.

178. **It is important to note that school principals are expected to take on both administrative tasks and an instructional leadership role in Uzbekistan.** Principals are expected to carry out instructional leadership tasks, including supporting teachers in their pedagogical work, ensuring that teaching–learning processes are taking place adequately, organizing the school, providing support in improving teachers’ quality, using the latest technology in teaching–learning processes, developing school programs, selecting

¹⁰³ According to MoPE data 2017/18, provided via ESA data request

¹⁰⁴ According to MoPE data 2017/18, provided via ESA data request

adequate teachers, and identifying teachers and school needs, among other activities. Uzbek principals are also expected to follow rules of procedure and regulations, lead school financial and economic activities, and manage the budget.

179. The lack of a requirement to take on adequate training may be affecting the capacity of Uzbekistan’s school principals to fulfill their role adequately. Although Uzbek principals are required to perform as both instructional leaders and school administrators, no specific training requirement exists to ensure that aspiring principals have the adequate skillset to successfully take on their new job. On-the-job professional development opportunities are not mandatory either. Requirements to become a school principal include having: (i) at least a Bachelor of Arts in Education; (ii) at least five years of experience in pedagogy; (iii) second degree of qualifications according to the teaching career framework; and (iv) the necessary abilities to exercise the principal role.

180. By policy, teacher compensation is based on teaching hours, which creates an incentive for teachers to take on more classes at the expense of other preparatory and follow-up tasks. Uzbekistan’s teachers’ compensation mechanism is based on the *Stavka* system. Widely used in Central and Eastern Europe and Central Asia, *Stavka* defines the base salary in terms of the teaching hours per week or the statutory teaching load, and other activities, including administrative and pedagogical, are regulated and compensated separately. This fails to create the necessary incentives for teachers to be more effective and focus on student learning, devote time to students, or engage with parents. On the contrary, the *Stavka* system creates incentives for teachers to teach excessively, take on additional jobs, and look for alternative sources of income. This can also affect teachers’ level of stress and motivation. As a result, not enough incentives exist to effectively motivate teachers to excel, especially for those who serve in schools with difficult student populations in isolated and rural areas. In high-performing education systems, teachers’ compensation is based on the actual workload, and the following nonteaching hours are considered part of teachers’ working time: lesson planning, engagement with parents, supporting other teachers, and research, among others (Vegas, et al., 2013).

181. Some incentive payments reward teachers who take on extracurricular activities, but the rewards for these incentives are not linked to improved teacher performance. Between 2005–09, the “Director’s Fund” was established by Presidential Decree. This extra-budgetary fund provides an additional 15–25 percent of a school’s personnel budget for teacher incentive payments. These payments are granted discretionarily by an internal commission within the school, presided by the school principal, to teachers who take on extracurricular activities and have “pedagogical mastery.” In 2006, 43 percent of all teachers in Uzbekistan received incentive payments. This scheme may help to make the teaching profession more attractive but the rules that govern it are not fully clear, and not linked to improved teacher performance. Accountability of these funds is also limited, since the selection commission is composed of the principal, teachers themselves, and only a few parent representatives.

182. Other incentives could be offered for teachers who teach critical shortage subjects in hard-to-staff schools, but their use is not observed in Uzbekistan. International evidence shows that without adequate incentives to teach in hard-to-staff schools, and in the absence of a clear teacher assignment policy, the best teachers will tend to seek jobs in schools located in urban areas. This lack of incentives can affect the quality of teachers who teach in hard-to-staff schools, especially those located in rural and isolated areas or who serve vulnerable populations.

183. It is worth noting that some incentives to attract talented candidates to preschool teaching were recently put into place in Uzbekistan. The GoU recently raised the salary of preschool teachers by 30 percent to attract talented candidates to enter the teaching profession at this education level. In addition, to make the preschool teaching profession more appealing for qualified candidates, retraining programs for

teachers of other levels are being offered. The training consists of 476 hours (four months) and aims at developing the necessary skills in experienced teachers, so that they can in turn instill foundational skills in the youngest children. Attracting talented candidates to teach the youngest children is aligned with international evidence that shows the importance of having high-quality teaching in the early years, when children's brains are in their greatest period of development (El-Kogali and Kraft 2015).

d. Standards, Curriculum, and Assessment

184. Detailed standards exist for all subjects and grades of GSE as well as for preschool education. According to Resolution No. 187, state standards entail four components: (i) study plan; (ii) study program or curriculum based on competencies; (iii) requirements of skills and competencies to be acquired by students after finalizing each academic year from grades 1–9; and (iv) an evaluation system. The study plan clearly specifies the number of hours that schools and teachers should spend on every subject. The study program, based on competencies, outlines the skills that each student should acquire after completing each subject in each grade from 1–9. Skills requirements stipulate different proficiency levels of competencies. The existence of standards in Uzbekistan, adequately aligned with the curriculum, is in keeping with international best practices. Having clear expectations of what each student should know and be able to do after completing each academic year aligned with a curriculum is key in guiding efforts to improve relevant student learning (Barber, et al., 2007).

185. However, no systematic and standardized assessment of student learning outcomes occurs in Uzbekistan, although Resolution No. 187 acknowledges the importance of having in place an assessment system with indicators to monitor standards' achievement. The assessment framework consists of evaluations applied by teachers, who conduct ongoing, intermediate, and final examinations to assess students. In addition, the State Exam Commission of the MoPE conducts regular exams in grades 4 and 9, but these are not standardized and cannot be compared across institutions or over time. As a result, existing tests cannot be used to measure GSE quality. International best practices show the importance of applying national, standardized learning assessments as a source of comparable and reliable data on student achievement and as a means of constantly tracking progress toward compliance with standards (WDR 2018).

186. Mechanisms are in place to categorize schools based on their performance on a specific set of indicators, but these mechanisms can be improved. The MoPE assigns ratings to schools by taking into account: (i) schools' performance in Olympiads; (ii) students' achievement results as measured by teachers' examinations; (iii) results of teachers' attestation; and (iv) availability of technical material for schools, among others. Two limitations of this system are that: (i) the indicator of student achievement does not allow for comparisons over time and across schools; and (ii) since teachers and schools apply the examinations, no mechanisms are in place to control adequate implementation. High-performing education systems have mechanisms in place to categorize schools and identify those that underperform. These mechanisms usually include indicators that use results of standardized student learning assessments and other teacher evaluations, and factor in students' socioeconomic status, gender, and geographic origin (Jaimovich 2014).

187. Most stakeholders share the opinion that the SSVE curriculum has an adequate balance across its different components, including theory and practical training. The curriculum of Uzbekistan's SSVE institutions follows a framework defined in the State Educational Standards for this level. Until the 2016/17 academic year, the curriculum of colleges and lyceums for the first year of SSVE was the same, with differences between colleges and lyceums observed in years 2 and 3. The first year was dedicated to general education subjects. Vocational colleges enjoyed a certain degree of autonomy to adjust

their curriculum for some specializations, for up to 10 percent of the number of hours, to meet the needs of the local market (World Bank 2017b).

G. Major Education Outcomes

a. Educational Attainment

General Secondary Education

188. **Uzbekistan has achieved universal rates of attainment in grades 1–4, and nearly universal rates of attainment for grades 5–9.** According to the UNESCO Global Monitoring Report, 99 percent of grade 1–4 students in Uzbekistan complete primary school and successfully transition into grade 5. This seems to be quite consistent over time as well: 100 percent of Uzbeks over the age of 25 (as of 2015) completed grades 1–4. Moreover, 95 percent of boys and 94 percent of girls make it to grade 9, and the overall gross graduation ratio from grades 5–9 in Uzbekistan was 91.2 percent as of 2016.¹⁰⁵ Gross graduation ratios are calculated as the number of graduates regardless of age in a certain level, expressed as a percentage of the population at the theoretical graduation age for that level.

189. **Dropout is not monitored in Uzbekistan given a wrong assumption that this is not an issue in the country because GSE is compulsory.** However, the gross graduation ratio for grades 5–9 reported above (90 percent in 2016) may reflect some dropouts or noncaptured migration. Without a systematic procedure/practice to monitor dropouts, decision makers are limited in terms of diagnosing the scale of the problem and designing interventions to address it.

190. **Data for a granular analysis of disparities in school completion or educational attainment in Uzbekistan are missing.**

Despite the very high rates of educational attainment at the GSE level, about 33,000 children and 108,000 adolescents were out of school as of 2017, according to UIS. While this represents a small share of children and adolescents in Uzbekistan, it is still a large number of individuals who are at risk of failing to complete GSE. Moreover, 60 percent of these out-of-school children and adolescents are girls, although unfortunately no detailed data are available to better assess their location or specific needs.¹⁰⁶ Furthermore, very little information exists on disparities in school completion or educational attainment. For example, household survey data could allow for in-depth analysis of school completion and educational attainment patterns by region, urban versus rural areas, family background, and language of instruction. A systematic approach to monitoring and supporting out-of-school youth, as well as disparities in educational attainment, is needed to meet Uzbekistan’s objective of inclusive education for all and universal educational attainment in GSE.

In 2017, about 141,000 children and adolescents were out of GSE schools in Uzbekistan, of whom 60 percent were girls.

b. Learning Outcomes

191. **Representative and comparable data on student learning outcomes in Uzbekistan are limited, posing a challenge for assessing education quality.** At the preschool education level, the MPSE does not

¹⁰⁵ UIS database.

¹⁰⁶ Ibid.

assess children’s development or their readiness for primary education. In GSE, there are no early literacy assessments in Uzbekistan, such as the Early Grade Reading Assessment (EGRA), to indicate how well the education system supports literacy in the first years of education. While the MoPE regularly conducts national examinations in grades 4 and 9, the results are not comparable across schools and over time, because these assessments are not standardized. In fact, the MoPE does not conduct any sample-based standardized assessments under a systematic approach. Additional exams are organized by the STC and SISQE, but results are not used to inform instruction or policy making. Furthermore, Uzbekistan has not participated in any large-scale international assessments such as PISA, the Progress in International Reading Literacy Study (PIRLS), or the Trends in International Mathematics and Science Study (TIMSS), which makes it impossible to compare the performance of its students with those in other countries.

192. However, Uzbekistan just signed an agreement on the country’s participation in PISA 2021 as well as in the Teaching and Learning International Survey (TALIS). The former decision represents a strong commitment on the part of the GoU to assessing student learning outcomes and using that information to inform policy. TALIS asks teachers and school leaders about working conditions and learning environments in their schools. Although not a direct measurement of learning outcomes, TALIS will provide critical information to the MoPE on important determinants of learning.

193. The lack of reliable data on student learning outcomes makes measurement of human capital development in Uzbekistan challenging. Investments in human capital are increasingly important as the nature of work evolves in response to rapid technological change. Existing evidence shows that in Vietnam, for example, workers able to perform nonroutine analytical tasks earn nearly 25 percent more than those who cannot. By improving their skills, health, knowledge, and resilience—their human capital—people can be more productive, flexible, and innovative. The changing nature of work makes firms demand workers with higher levels of human capital, especially advanced cognitive and socioemotional skills. The GoU has shown its commitment to investing in people by joining the World Bank’s Human Capital Project as one of its early adopters. However, the first measurement of the Human Capital Index, which is a component of the Human Capital Project, does not include Uzbekistan, given the absence of data on student learning outcomes.

194. Youth (aged 15–24) literacy rates—a common cross-country metric of learning outcomes—have reached 100 percent in Uzbekistan according to the UNESCO Global Monitoring Report 2018. This is consistent with information from the NSC, which also indicates a 100 percent literacy rate in both urban and rural areas in all regions. The achievement of 100 percent youth literacy is comparable to most other countries in Central Asia and Eastern Europe, and is also expected given the high rate of upper secondary school completion in Uzbekistan. However, literacy is acquired through both in-school and out-of-school activities, and for this reason, literacy rates should not be fully attributable to the education system. Other information on student learning outcomes linked to the goals of the education system is needed to assess the system’s performance in producing learning outcomes.

195. The limited data that are currently available suggest that the quality of GSE and learning outcomes of students at this level remain highly variable and inequitable. Although enrollment levels in GSE are high in Uzbekistan, roughly on par with OECD countries, and gender parity has mostly been achieved, measurement of the quality of learning outcomes at this level remains a major challenge. The best available measure of learning outcomes in GSE in Uzbekistan is the National Assessment of Learning Outcomes of Primary School Graduates (NALOPSG), which was applied to grade 4 students in 2013. This sample-based assessment was financed by the World Bank-supported Basic Education Project Phase II and covered mathematics, reading, and native language. As one of its objectives, the study sought to assess the level of students’ competencies in key subject areas with regard to the education standards and national

priorities at the time of the assessment.¹⁰⁷ Sampled education institutions included schools covered by the mentioned project, control schools from regions covered by the project, and schools from nonproject regions. In total, 11,136 students in 300 schools participated in the study. Given this sampling strategy, the results of this assessment are representative of grade 4 learning outcomes as of 2013.

196. **NALOPSG results showed that on average, grade 4 students were not able to correctly respond to at least 50 percent of the tested content in native language and reading.** This signals a potentially significant shortcoming of the education system as well as a barrier to acquisition of higher-order skills that require proficiency in reading and language. More in-depth analysis is needed based on current data to understand the nature and causes of this learning deficiency. In mathematics, on the other hand, students were able to respond correctly to at least 50 percent of the content tested on average.

197. **In the same assessment, urban students consistently outperformed their peers from rural schools in all subjects tested.** For mathematics, reading, and native language, students in urban areas scored higher than the average, whereas students in rural areas scored lower than the average. This is consistent with findings elsewhere in Uzbekistan and other countries showing a consistent learning disadvantage for students in rural areas.

Urban–rural divide: Students from urban schools outperformed their peers from rural schools in an assessment of learning outcomes in grade 4 in 2013.

The gap was particularly pronounced for reading, where urban students received an average score of 511.8 compared to 495.5 for rural students – a difference of 16 points (equivalent to 0.16 standard deviations [SD]). However, as mentioned above, both urban and rural students failed to demonstrate proficiency in at least 50 percent of the content tested for reading. For native language, urban students did demonstrate proficiency in at least 50 percent of content tested, whereas rural students did not.

198. **Boys slightly outperformed girls in mathematics, whereas girls outperformed boys in both reading and especially native language.** In mathematics, both boys and girls scored very close to the average, with only a small gender gap. Both boys and girls exceeded the threshold of proficiency in at least 50 percent of content tested. However, girls outperformed boys by 11 points in reading and by 14 points in native language. In reading, both boys and girls failed to demonstrate proficiency in at least 50 percent of content. In native language, girls exceeded the threshold, whereas boys failed to meet it.

199. **Students appear to be more proficient with reading fictional texts compared with informational texts.** The reading comprehension portion of the NALOPSG-2013 was aimed at establishing the level of comprehension, ability to find required information in the text enabling them to answer questions, ability to extract information hidden in the text, and ability to summarize the text. The reading tests were based on materials obtained from literature, nonfiction texts, and instructional texts. Reading scores—regardless of gender or school location—were 12–13 points higher for fictional texts compared to nonfiction and instructional texts.

200. **Learning outcomes are correlated with preschool attendance and the availability of resources in both the home and the school environment.** The NALOPSG-2013 survey found that student performance in native language is significantly higher for students who have attended at least one year of preschool. Students who attended preschool for two years scored almost 20 points higher in native language than students who had not. Availability of educational and economic resources in the home, which can be interpreted as the student’s socioeconomic status, also has a positive correlation with learning outcomes.

¹⁰⁷ Main results of the study “National Assessment of learning achievements of the graduates of general secondary schools – 2013.”

Finally, the availability of learning resources in classrooms, such as demonstration materials and visual aids, is correlated with student outcomes. These findings cannot be considered as causal given the nature of the survey, but these correlations are consistent with other robust international evidence on the determinants of learning.

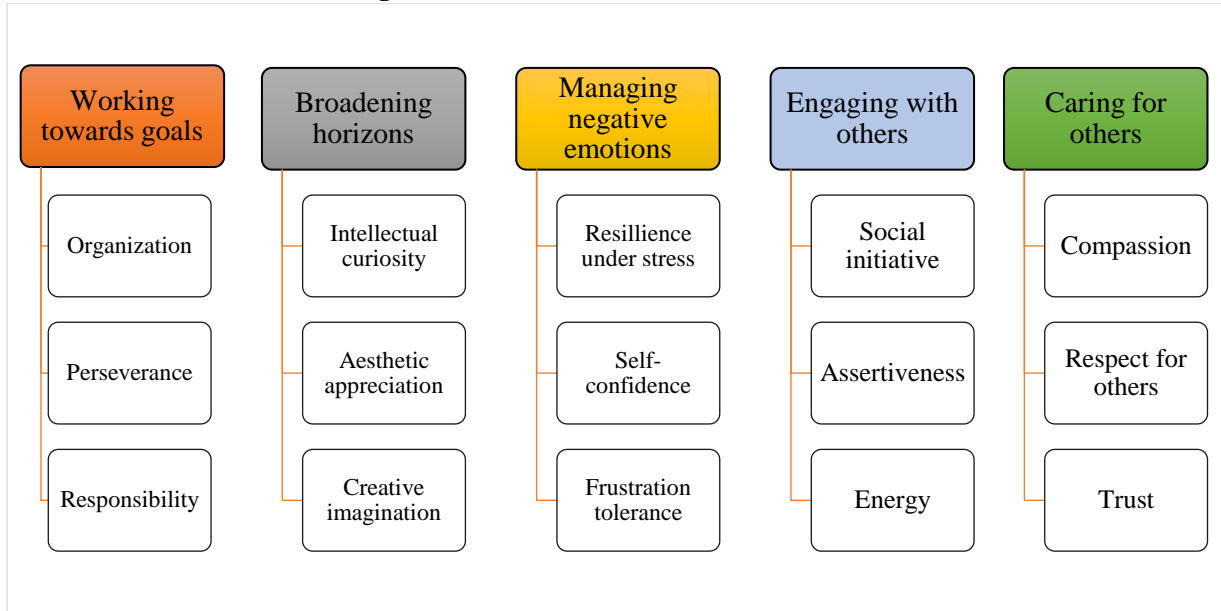
201. **In addition to these grade 4 assessment results, a skills analysis survey in 2013/14 found no correlation between educational attainment and either cognitive or socioemotional skills, which raises further questions about the quality of GSE (World Bank 2014a).** This finding is somewhat counterintuitive, since one would expect higher levels of educational attainment (i.e., the completion of higher levels of education) to be correlated with higher cognitive skills. The lack of a relationship between educational attainment and cognitive skill level could indicate that students are not learning enough while in school. The survey also found considerable variation in skills within a given level of educational attainment, meaning that individuals with the same level of education demonstrated very different levels of skills. Again, this could indicate high variability in the quality of education across the country.

c. Socioemotional Skills

202. **Cognitive and socioemotional skills drive children’s lifetime success. A balanced set of cognitive and socioemotional skills empowers children to flourish in education, society, and the labor market.** Cognitive and academic skills have traditionally been emphasized in education policies and school practices. However, evidence from intervention and longitudinal studies suggests that socioemotional skills such as perseverance, self-confidence, and compassion are as important as cognitive skills in explaining educational attainment, employability, health conditions, civic engagement, and well-being (Kautz et.al. 2014; OECD 2015b). Moreover, other studies suggest that socioemotional skills can benefit even cognitive development (Cunha, Heckman, and Schennach 2010; OECD 2015). This means that investments in socioemotional skills can contribute to efforts to raise academic achievement.

203. **Socioemotional skills – also known as noncognitive, soft, or character skills – are foundational human capabilities involved in achieving life goals, interacting with others, and managing emotions.** As such, they manifest themselves in countless everyday life situations. While a variety of conceptual frameworks exist to characterize socioemotional skills, many of them either directly or indirectly cover the following five domains: (i) working toward goals, (ii) broadening horizons, (iii) managing negative emotions, (iv) engaging with others, and (v) caring for others (Figure 48). These five domains mirror the well-known Big Five factors, which have been extensively studied in the psychological literature (John and Srivastava 1999). The Big Five factors are associated with a large pool of evidence within diverse countries and cultures and are known to represent distinct individual socioemotional capabilities as well as their development and outcomes. Figure 48 shows the five overarching domains, as well as the three important lower-order facets (specific skills) that represent each domain.

Figure 48: Socioemotional Skills Framework

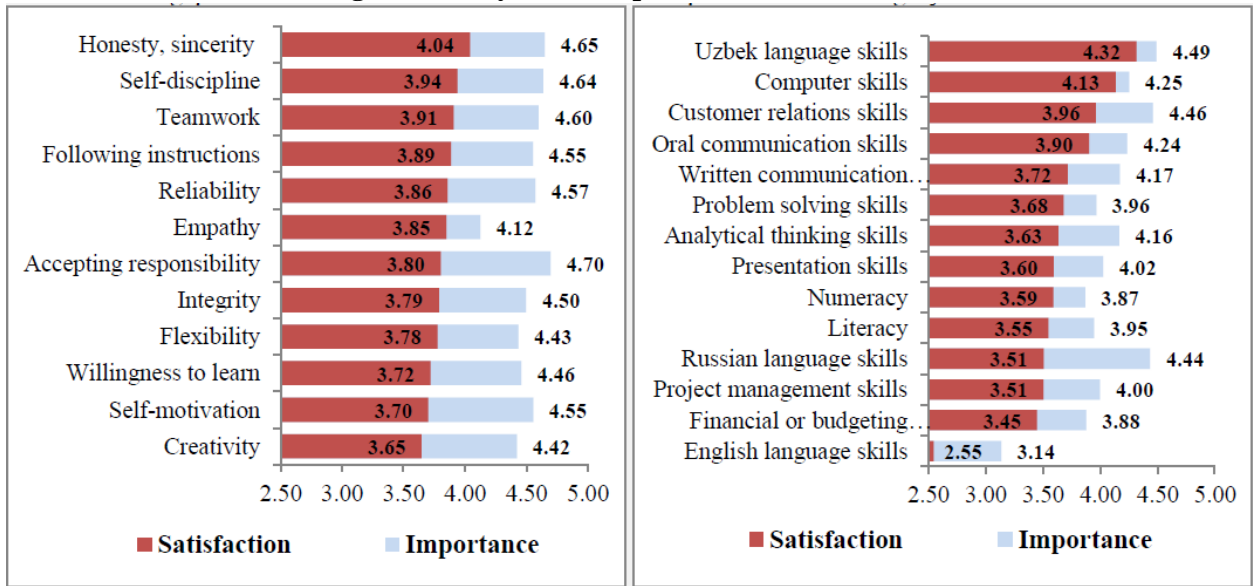


Source: John and de Fruyt 2015.

204. **Multiple skills can be differentiated in each of the five broad domains. The multiplicity of lower-order facets suggests that each of the five domains represents a family of related but distinct socioemotional capabilities.** For example, social initiative, assertiveness, and energy all belong to the family of skills that facilitate *engaging with others*. Yet each does so in a different way: social initiative involves learning how to make connections with new people (e.g., a new teacher or new classmates); assertiveness involves students learning how to ask for what they need and stand up for their own rights and the rights of others; and energy involves learning to become enthusiastic and excited about activities and projects at school. Each of these skills can be taught, practiced, and developed in the school context.

205. **A 2014 survey of 232 enterprises in Uzbekistan revealed gaps between socioemotional skills such as self-discipline, empathy, and creativity desired by employers and those possessed by recent university graduates.** The Survey of Employers in Uzbekistan (World Bank 2014b) found the largest skill deficits (measured as the difference between “importance” and “satisfaction” scores on a five-point scale) in socioemotional skills such as “accepting responsibility for one’s actions,” “self-motivation,” and “creativity” (Figure 49). Given that all these socioemotional skills can be progressively developed from childhood through adolescence, it is likely that the foundation of these skills had not been fully developed for surveyed children before they reach higher education. It is important to note that many of the skills that Uzbekistan’s enterprises are concerned about mirror the specific skills listed in Figure 48, although the enterprise survey used slightly different labels. For example, employers’ concerns with accepting responsibility and self-discipline/self-motivation all belong in the broader *working towards goals* domain, and they are included there in the skills labeled responsibility and perseverance, respectively. Similarly, in the *broadening horizons* domain, creativity corresponds to creative imagination, and willingness to learn corresponds to intellectual curiosity. Finally, some of the employers’ concerns are about hybrid skills. Team work, for example, is not one single skill but a complex hybrid involving multiple skills from multiple domains.

Figure 49: Key Skills Gaps in Uzbekistan



Source: World Bank 2014d.

Note: The two panels report the satisfaction and importance levels of various general/soft skills (left) and specific skills (right) reported by surveyed employers about university graduates hired between 2009 and 2012. The importance and satisfaction of each skill is assessed on a five-point Likert scale, where 1 = “not at all” and 5 = “extremely.” The size of the gap between the two bars is the skill deficit in a particular skill category.

206. **An assessment of socioemotional skills of a sample of grade 9 students was carried out in May 2018 to inform this ESA.** The results of this assessment are presented in this section of the report. Box 5 summarizes the methodology and key features of this assessment.

Box 5: Assessment of Socioemotional Skills in Uzbekistan

The World Bank’s Survey of Socioemotional Skills in Uzbekistan asked grade 9 students to self-rate their levels of socioemotional skills over a diverse set of socioemotional facets. This survey was administered to a representative sample of 2,140 students covering 30 schools in Tashkent City and 30 schools in Tashkent Region, with the probability of a particular school being selected proportional to student body size.

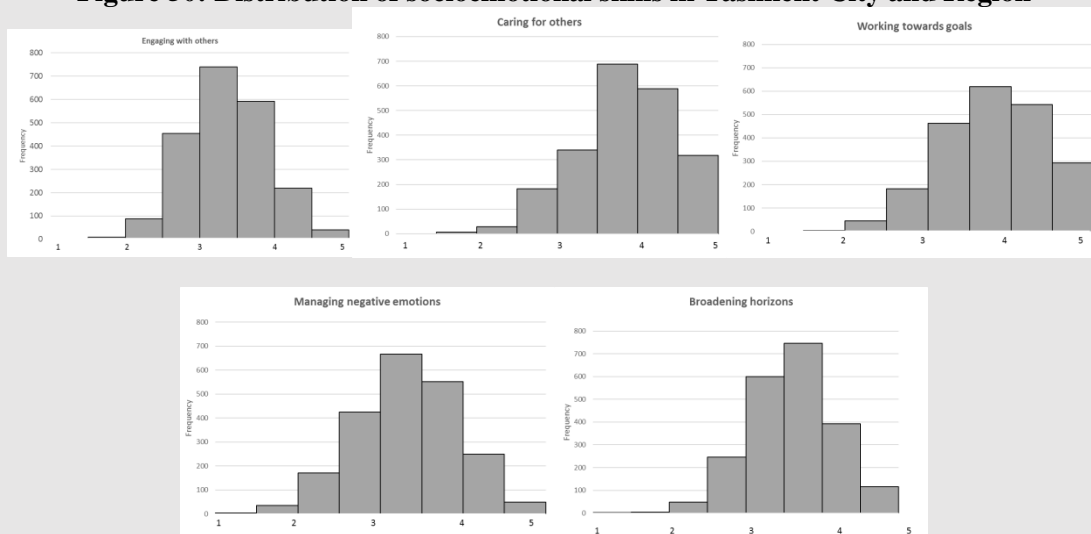
Data collection took place in urban and rural areas during the week of May 14, 2018. More than one-half (53 percent) of sampled students were girls. Average age was 15.5 years (SD=.62), with more than 95 percent of students either 15 or 16 years old. All data analyses were initially conducted separately for 15- and 16-year-olds. However, given the very similar findings across these two age groups, age was not considered here further.

To examine the 15 socioemotional skills presented in the framework presented above, the 60-item Big Five Inventory (BFI-2; Soto and John 2017) was adapted to the Uzbekistan language context. The BFI-2 was chosen because it strikes a balance between two opposing goals: (i) to survey many distinct socioemotional skills; and (ii) to keep the survey short enough to be administered in schools within a single class period, even including a demographic background questionnaire. The 60 BFI-2 items are short, easy to understand, and have an average fifth grade reading level. For example, two items from

the perseverance scale are “Is persistent, works until the task is finished” and “Is efficient, gets things done.” Students report where they fall on each skill item, using a standard five-point Likert scale. The scale has good psychometric properties, and external validity evidence is strong; for example, skills related to *engaging with others* predict whether students take on leadership positions and attain social status in their groups (Anderson et al. 2001; skills related to *working towards goals* and *broadening horizons* predict better learning outcomes in reading, writing, and math (John et al. 1994; Poropat 2009). As part of an international collaboration, the BFI-2 has been adapted to more than 30 languages, including Russian and Turkish. The Uzbekistan adaptation used here was completed specifically for this ESA.

The distributions of the five broad domain scores are shown in Figure 50. As seen in many other schoolwide surveys, scores for *engaging with others*, *managing emotions*, and *broadening horizons* were fairly normally distributed, whereas *caring for others* and *working towards goals* had the highest mean scores and were somewhat negatively skewed (i.e., more students scored on the higher end of the scale).

Figure 50: Distribution of socioemotional skills in Tashkent City and Region



Source: World Bank 2018a.

Note: Horizontal scales are standard Likert scales from 1 to 5. Scores are calculated based on a simple mean of three facet-level scores per each of the five factors.

207. The socioemotional skills assessment carried out to inform this ESA shows that a large proportion of grade 9 students self-evaluated their skills below the midpoint, especially in the domains of *engaging with others*, *managing emotions*, and *broadening horizons*. The World Bank’s *Skills Assessment in Uzbekistan* showed more than 20 percent of the students reporting various difficulties in *engaging with others*, suggesting issues with withdrawal, loneliness, and possibly social exclusion at school and future difficulties with team work in the labor market (Nigg et al. 2002). Moreover, about 15 percent reported problems with skills related to *broadening horizons*, such as creative imagination and intellectual curiosity—critical skills for achievement in school (John et al., 1994) as well as for flexible and innovative jobs later (George, Helson, and John 2011). As the results from the 2013 Survey of Employers in Uzbekistan suggested a considerable skills gap in creativity, this is one domain of socioemotional skills that may require more attention in the future. Skills in the *managing negative emotions* domain showed the lowest mean across all domains. More than 40 percent of grade 9 students indicated that they worry a lot and do not manage stress well.

208. **While students reported high organization skills, they self-rated their sense of responsibility and perseverance as low.** Within the *working towards goals* domain, students scored substantially higher on organizational skills (e.g., keeping things in order, neat, and tidy), with a mean of 4.12, than on responsibility (mean = 3.58) and perseverance (mean = 3.77), both of which were top employer concerns, whereas organization

was not. It could be useful to discuss the relative emphasis on valuing order and following explicit rules in the school context versus other priorities, such as developing a personal sense of responsibility or developing perseverance skills like self-discipline and self-motivation, which have been shown to predict achieving more difficult or ambitious goals at school and later in life. Data from the World Bank's *Assessment of Socioemotional Skills in Uzbekistan* and the 2013 Survey of Employers in Uzbekistan show that developing these skills can help address labor market challenges associated with skills shortages.

Uzbek students report low levels of development of skills such as perseverance and responsibility, which are highly valued by employers in the country.

209. **The survey showed gender differences in the domains of *managing negative emotions*, with girls systematically reporting lower levels of self-confidence, resilience under stress management, and frustration tolerance.** Decades of research have shown that boys and girls face different challenges at school. When things go badly, girls tend to internalize—that is, they blame themselves for their troubles, and they worry and ruminate about the stresses, hurts, or insults they have experienced (Soto et al. 2011). The survey demonstrated that these gender differences begin to occur in early adolescence (after age 10) and then get magnified throughout adolescence, as girls get teased or even bullied for their appearance, body weight, etc. Grade 9 girls in Uzbekistan scored systematically lower on all three facets of *managing negative emotions* than boys (Figure 51). For self-confidence and resilience under stress, the difference was quite substantial in size (i.e., about one-half of an SD).

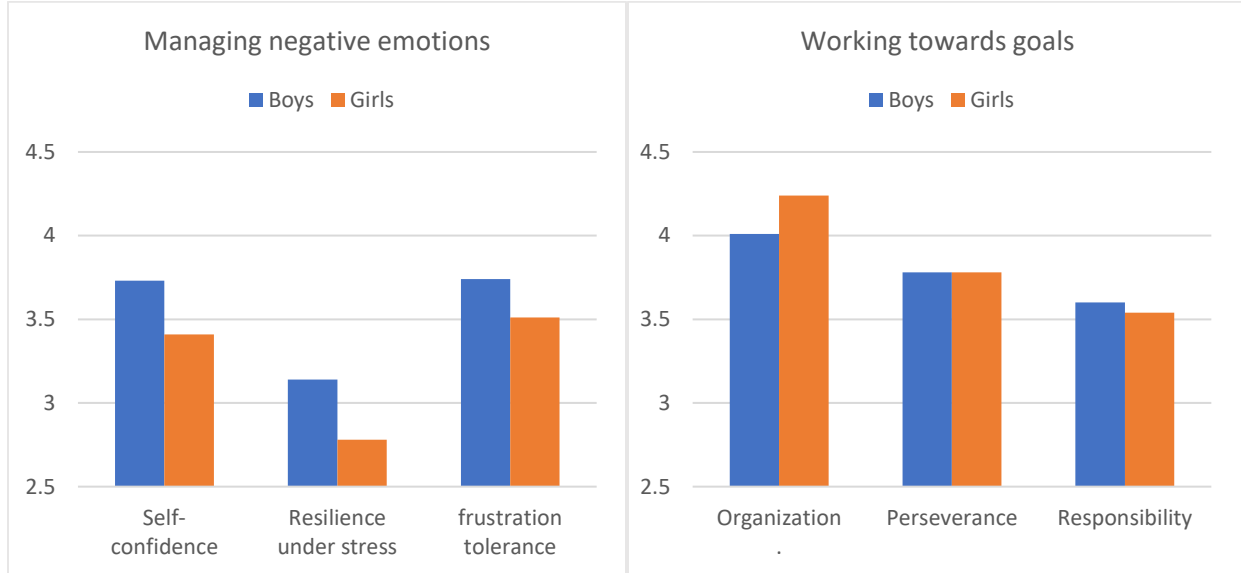
210. **Addressing resilience under stress is one of the most important areas of socioemotional development among grade 9 students, particularly girls, which could help reduce the incidence of depression and anxiety disorders.** Grade 9 girls and boys both reported that their greatest challenge among all 15 socioemotional skills assessed was resilience under stress (i.e., just below the midpoint of 2.95), which represents learning ways to stay calm and resilient when faced with stress and anxiety.

Lacking skills in this domain during adolescence can have negative consequences, such as depression and anxiety disorders, which are far more prevalent in women than in men. In school settings where such gender differences are observed, it is therefore important to provide early and focused teaching or interventions that help students (and especially girls) learn constructive ways to manage negative emotions.

Uzbek female students report low levels of development of resilience, which can lead to negative consequences such as anxiety disorders later in life, according to research.

211. **Whereas girls tend to internalize emotions, boys tend to externalize them and show lower levels of organizational skills, especially in paying attention to details (right panel of Figure 51).** In line with earlier studies, boys scored lower on organization than girls. No gender differences were found for the other two facets. In general, however, organization scores were exceptionally high for both girls and boys. This is an unexpected deviation from the international evidence and may reflect the impact of disciplinary norms on this group of grade 9 students, a result of the Soviet-era legacy.

Figure 51: Mean Scores for Grade 9 Boys and Girls on *Managing Negative Emotions* and *Working Towards Goals*



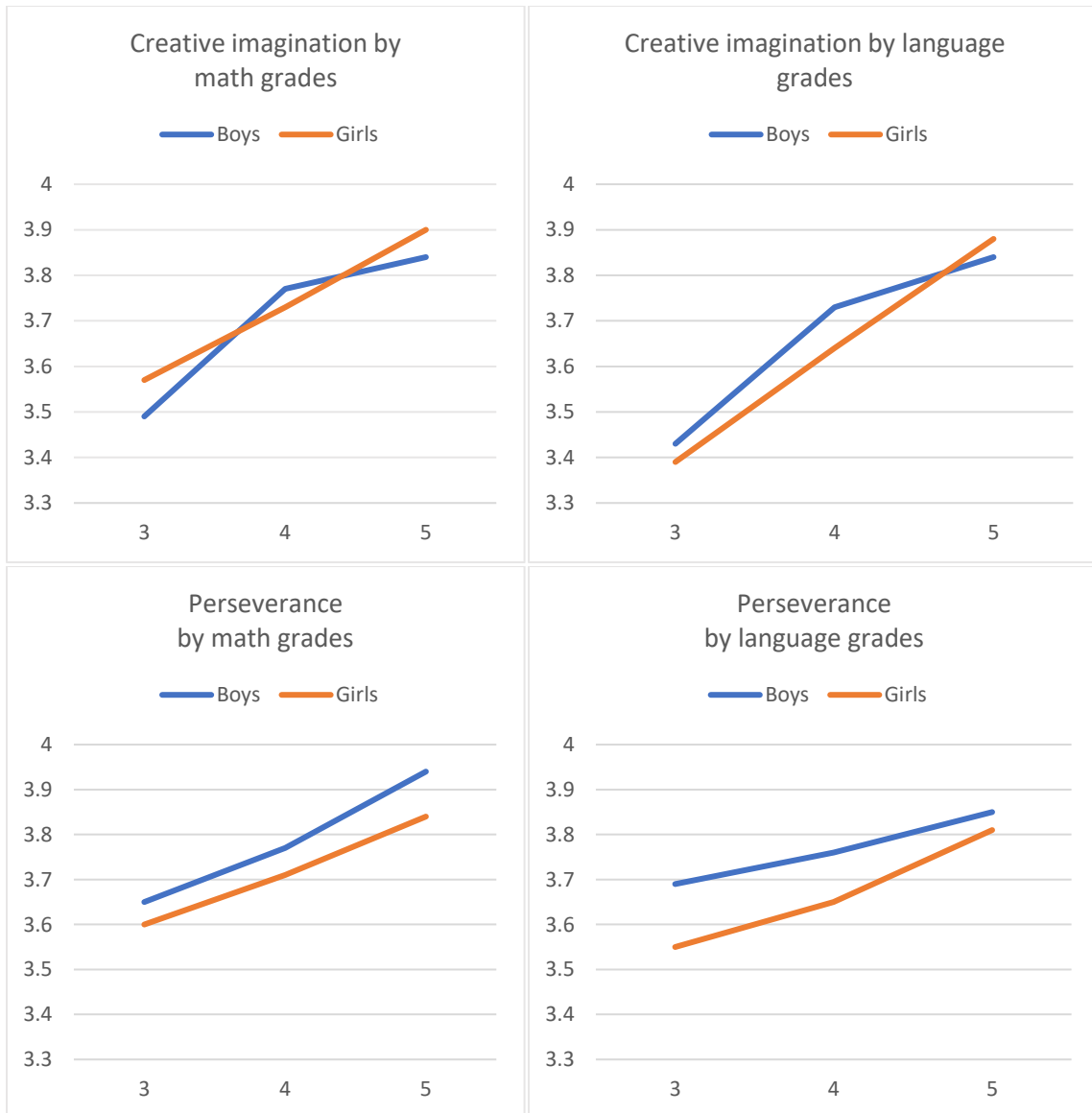
Source: World Bank 2018a.

Note: Vertical scales are standard Likert scales from 1 to 5.

212. **Students’ scores on all three *broadening horizons* skills and all three *working towards goals* skills were substantially related to their self-reported grades in math and language.** One of the most replicated findings on the importance of socioemotional skills is that these skills predict school achievement (both test scores and course grades), and these effects hold even when accounting for individual differences in cognitive factors such as intelligence (Poropat 2009). In prior studies, two of the five domains have consistently proven to be most impactful. They include *broadening horizons*, which captures the passion for understanding and learning (intellectual curiosity) as well as generating new viewpoints and innovative solutions (creative imagination); these skills help to make learning a self-motivating, intrinsically pleasurable activity. Separately and independently, *working towards goals* includes skills that are important for “getting things done,” including learning tasks at school: organizing work, acting responsibly, and persevering even when the tasks are challenging or not immediately rewarding. In the survey in reference, students self-reported their current grades in math and language. Almost all reported grades were either a 3, 4, or 5 (2 is a failing grade); as expected, math grades were a little lower (mean=4.06, SD=.71) than language grades (mean=4.33, SD=.68). Although self-reported grades need to be treated with some caution, the expected pattern was replicated for grade 9 students: all three skills in both of the two expected domains were positively and significantly related to course grades. The Figure below illustrates these relationships for the creative imagination scale from *broadening horizons* (on the left) and the perseverance scale from *working towards goals* (on the right).

213. **The strong relationship between socioemotional skills and school grades holds for both girls and boys.** All four panels in Figure 52 show the same consistent patterns for both boys and for girls: higher grades were linked with substantially higher socioemotional skills. For example, for creative imagination, the mean score for the highest grade (5) was one-half of an SD higher than the score for a passing grade (3). These findings provide validation for the survey in reference and suggest that the functional relations between these socioemotional skills domains and school performance also hold in the school context in Tashkent City and Tashkent Region.

Figure 52: Relationship between Grades and Socioemotional Skills for Grade 9 Students



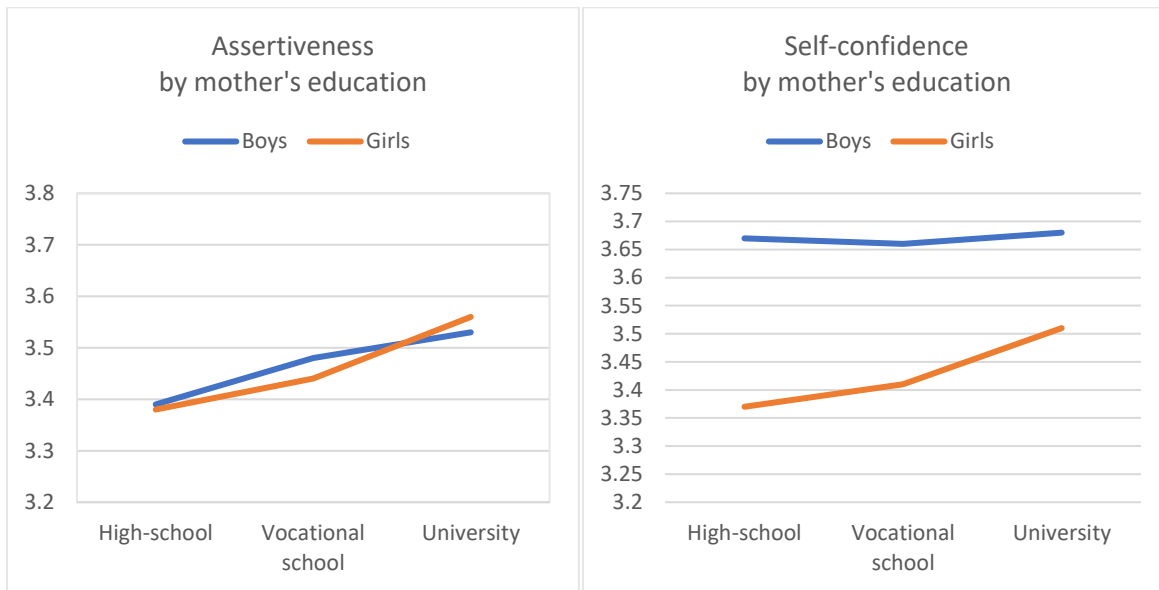
Source: World Bank 2018a.

Note: Vertical scales are standard Likert scales from 1 to 5. Horizontal scales are mean grades of math and languages from 1 to 5.

214. **Children who have mothers with higher educational attainment tend to score higher on assertiveness and girls with more educated mothers score higher on self-confidence.** Better-educated parents tend to have better cognitive skills (e.g., in math, language, and memory), which gives them greater access to information and resources (e.g., about healthy nutrition and behaviors), and they are likely to share these resources with their children. For example, better-educated mothers talk more with their children and do so with more advanced and complex vocabularies, and their children tend to attain higher levels of education. Parents also model appropriate or desirable behaviors and can encourage children to

express their needs and wishes, so one would expect greater parental education to influence the development of socioemotional skills as well. In the survey in reference, students self-reported their mother’s educational attainment. Grade 9 students with more educated mothers tended to self-report significantly greater assertiveness skills, and this relationship held across all education categories and for both boys and girls (Figure 53). Boys and girls did not differ from each other in their assertiveness skills, which is noteworthy because traditional gender roles expect boys to be more assertive than girls in exerting power and influence over others and attaining greater social status and leadership positions. Somewhat surprisingly, there was no evidence suggesting that more parental education helped adolescents develop the skills relevant for *working towards goals* or for *broadening horizons*.

Figure 53: Mean Scores for Grade 9 Boys and Girls on Assertiveness and Self-Confidence, by Mother’s Education



Source: World Bank 2018a.

Note: Vertical scales are standard Likert scales from 1 to 5.

215. **The socioemotional skills assessment carried out in Uzbekistan shows that mothers can play a role in reducing gender gaps in self-confidence. Self-confidence helps children develop and maintain optimistic expectations for themselves, even in challenging situations.** Not only did girls rate substantially lower than boys in self-confidence, but this gender disparity became narrower the higher the parental educational attainment (Figure 53). Mothers who had completed at least a university education were significantly more likely to have daughters who had developed higher levels of self-confidence. In contrast, mothers who had completed only basic secondary education (i.e., high school) had daughters with the lowest level of self-confidence. Mothers who themselves have achieved a greater level of education may be more capable of helping buffer their daughters from the drop in self-confidence that many girls (but not boys) experience during the early teenage years (Soto et al. 2011). These results are important because children with greater self-confidence will likely pursue more challenging goals and be less discouraged when things do not work out as they had envisioned. These findings suggest that girls with less educated parents are at risk of falling behind their classmates.

216. **The relationship between parental education and socioemotional skills appears to be less pronounced than typically seen in the cognitive domain.** Factors other than parental education play a role in shaping socioemotional skills, and the school context is clearly a prime candidate. The skills

assessment in reference points to the importance of taking into account students' socioemotional development in education policies and practices. This survey, together with the World Bank survey of 232 enterprises, indicates a gap between the socioemotional skills demanded in the labor market and those self-reported by students. Tackling socioemotional skills can help not only to foster children's labor market and social success, but also to improve children's academic outcomes and quality of life. Both parents and schools can play important roles in providing children with foundational cognitive and socioemotional skills for their lifetime success.

d. Labor Market Outcomes

217. **With the drivers of the old growth model exhausted and the need for jobs given the large demographic bulge in the working-age population, Uzbekistan launched a process of market-oriented reforms with remarkable features in their breadth, depth, and speed.** When the new government took power in December 2016, the country embarked upon an ambitious economic modernization program to reinvigorate equitable growth for all of Uzbekistan's citizens. In early 2017, the GoU announced a broad market-oriented reform program that included five priority policy areas: (i) improving public administration and state-building; (ii) safeguarding supremacy of the law; (iii) maintaining economic growth and liberalizing the economy; (iv) enhancing social safety nets; and (v) ensuring security. The program also restated the authorities' commitment to macroeconomic stability and to improving the business climate.

218. **The transition of Uzbekistan to a market economy requires important economic and social changes: from a state- to a private sector-driven model; from inward- to outward-looking growth and jobs drivers; and from use of general government subsidies to use of modern targeted social protection.** These changes represent major steps toward Uzbekistan's strategy of stimulating equitable growth and jobs. At the same time, the transformation toward a market economy may create transitional dislocations and possible adverse impacts for some vulnerable parts of the population—adverse impacts that this operation aims to mitigate.

219. **Within this context, it is important to analyze the contributions of Uzbekistan's education system to the achievement of the country's development goals. Undoubtedly, investments in human capital should be fundamental for Uzbekistan's economic transformation and growth.** New global evidence based on data from over 1,500 household surveys shows that human capital is the most important component of wealth globally. In high-income economies, such as the OECD member countries, human capital reaches 70 percent of wealth (World Bank 2018c).

Labor Market Outcomes for Higher Education Graduates

220. **In Uzbekistan, higher education graduates record higher employment rates than their peers who attend SSVE or GSE alone.** A 2013 World Bank survey¹⁰⁸ revealed an employment rate of 77 percent for higher education graduates, compared to 57 percent for those with only an SSVE degree. Moreover, according to MHSSE data from 2018, 94 percent of all higher education graduates in the 2017/18 academic year were employed six months after graduation. The employment returns of higher education appear to be particularly relevant for women: while 68 percent of women with higher education are in employment, this is the case for only 35 percent of those graduating from GSE. This gap is remarkably smaller for men, at only 3 percentage points (84 percent for male higher education graduates and 81 percent for those with GSE). The economic returns to higher education also materialize in workers' salaries, as higher education

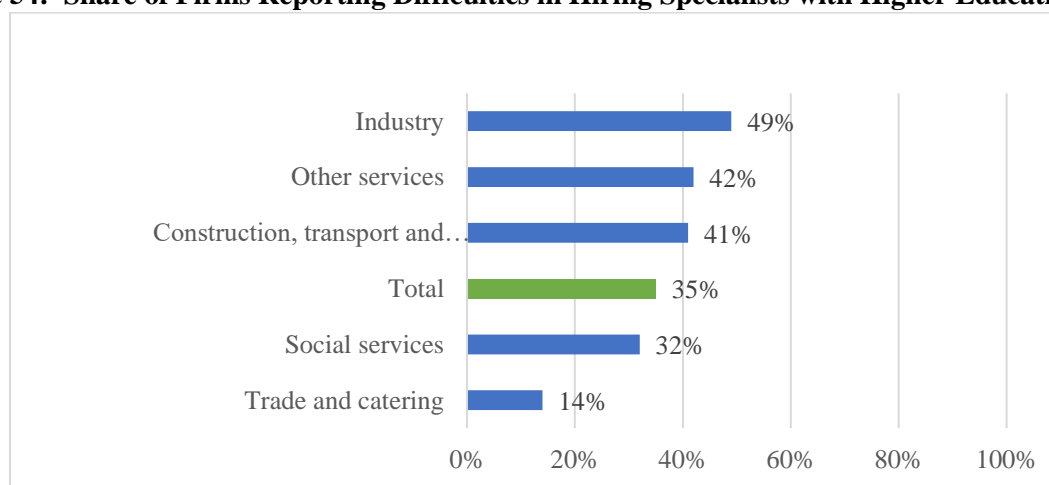
¹⁰⁸ Ajwad et. al. (2014), based on World Bank/GIZ (2013).

graduates earn wages 55 percent higher on average than similar workers with a secondary education degree (Ajwad et. al. 2014).

221. **Generally, higher education is complementary to transitions to post-commodities-based economies, like that experienced by Uzbekistan.** As the economy decreases its reliance on agriculture, less routine skills jobs are needed. Higher education systems can provide the labor market with high-skilled workers, while contributing to entrepreneurship and innovation. Higher education systems can also contribute to decreasing informality in the labor market. In Uzbekistan, according to the abovementioned 2013 survey, only 16 percent of those with a higher education degree were found to be in informal employment.¹⁰⁹

222. **Uzbekistan’s economic expansion has encountered a shortage of higher education graduates, however.** By 2011 the demand for employees with higher education degrees was higher than that for SSVE graduates (around 22 percent versus 20 percent of jobs, respectively).¹¹⁰ In the 2013 skills survey, over one-third of interviewed employers reported difficulties in hiring higher education graduates (Figure 54). The industry sector had the most salient problem: around one-half of interviewees from this sector reported difficulties hiring sufficient numbers of qualified specialists with a higher education degree. Also, 42 percent of employers in the services sector experienced similar difficulties (Ajwad et. al. 2014).

Figure 54: Share of Firms Reporting Difficulties in Hiring Specialists with Higher Education, 2013



Source: World Bank 2014.

223. **This shortage of higher education graduates is unsurprising, as only 16 percent of those aged 25 and above complete a Bachelor’s degree or higher.** In comparison, in neighboring Kazakhstan 23 percent of those in the same age group complete at least undergraduate studies.¹¹¹ More broadly, the rate is also low in comparison to other countries. In the United States, 32 percent in that age group hold at least a Bachelor’s degree,¹¹² and 27 percent of those older than 25 in the EU hold a higher education degree.¹¹³ In

¹⁰⁹ Ibid.

¹¹⁰ CER/UNDP 2011, cited in World Bank (2014, 30-33).

¹¹¹ These UNESCO-UIS data are from 2009.

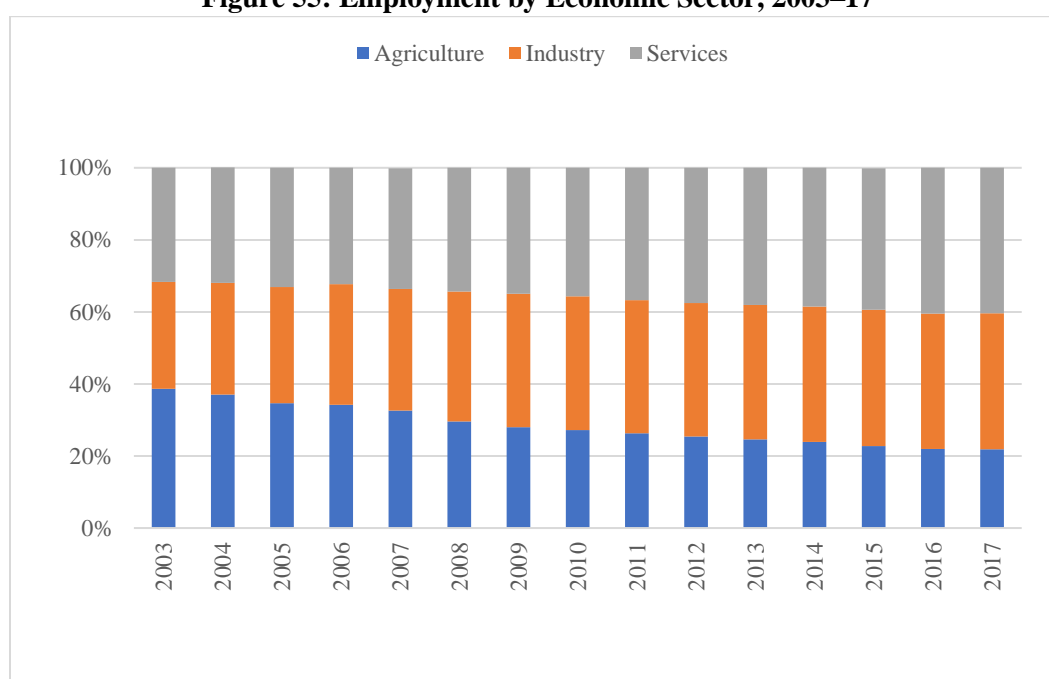
¹¹² Data for Uzbekistan and the United States are from UNESO UIS. In both cases latest available data are from 2015.

¹¹³ Eurostat: (edat_lfs_9903) accessed from: http://ec.europa.eu/eurostat/statistics-explained/index.php?title=Educational_attainment_statistics. Data are for 2016.

Europe, only Italy and Romania have similar figures as Uzbekistan: 15 percent and 14 percent, respectively.¹¹⁴

224. **On the demand side, employment is growing in sectors such as services and industry, in alignment with their contribution to GDP, whereas jobs in agriculture have decreased.** Employment in agriculture almost halved in the past 15 years (it employed 17 percentage points less in 2017 than it did in 2003). Employment in the industry and services sectors grew by almost one-third (27 percent) over the same period: the former comprised 29.6 percent of employment in 2003 and 37.7 percent in 2017; the latter 31.7 percent and 40.4 percent in the same years. Thus, the services sector is playing a key role in leading the Uzbek economy and generating employment as reliance on agriculture continues to shrink (Figure 55).

Figure 55: Employment by Economic Sector, 2003–17

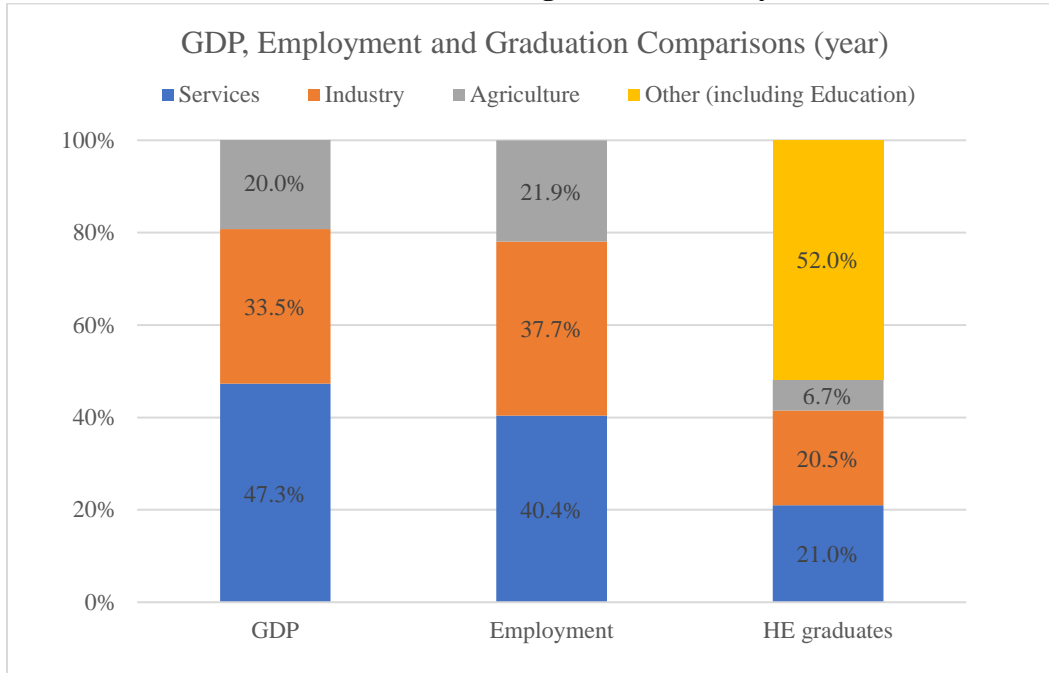


Source: WDI (modeled ILO estimates).

225. **On the supply side, Uzbekistan’s higher education system has produced graduates misaligned with the needs of the labor market and relevance of economic sectors. The distribution of graduates’ specializations was primarily driven by government priorities and state quotas, rather than by a changing economy.** Admission quotas have been determined without a clear connection to economic changes and preferences of applicants. Figure 56 compares the level of employment in relevant economic sectors, the contributions of these sectors to GDP, and the share of higher education graduates in related fields. This comparison unveils a clear disconnect between Uzbekistan’s higher education system and the labor market. Although the GoU intends to revise the quota system, it has been in place since the country’s independency. This long period of state quotas disconnected from the needs of the economy explain the protracted challenges with labor market linkages and the shortage of skilled workers in selected sectors.

¹¹⁴ Ibid.

Figure 56: Disconnect between Uzbekistan’s Higher Education System and the Labor Market

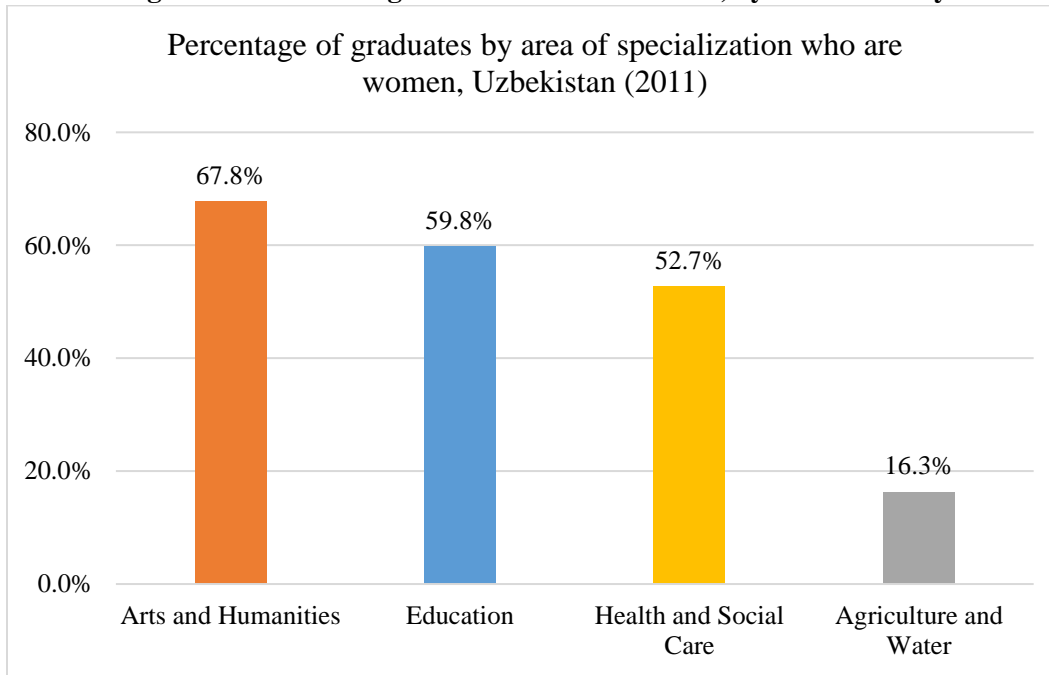


Source: WDI (modeled ILO estimates).

226. **Further alignment of Uzbekistan’s higher education system with the country’s labor market could be achieved by expanding women’s participation in higher education studies, including diversification of the fields of study in which they usually graduate.** While more women than men in the labor force hold higher education degrees (87.0 percent compared to 83.8 percent of men¹¹⁵), women tend to specialize in disciplines that are less critical as Uzbekistan moves toward a more modern economy, and in disciplines that lead to jobs with low wages. For example, the majority of graduates in the fields of arts and humanities as well as education are women, but the relevance (as contributions to GDP) and demand for jobs in related sectors are low. At the same time, no significant numbers of women are graduating in fields such as social sciences, economics, and law. All of these specializations are possibly conducive to employment in services, the sector leading Uzbekistan’s economic transition. Additionally, average wages for jobs in the education, health, and social care sectors were among the three lowest ones in 2017. In other words, they were below the national average wage and more than one-half smaller than the highest average wages paid in the country (in the finance and ICT sectors) (NSC 2018, 159–160).

¹¹⁵ WDI (Labor force with advanced education, including short tertiary cycle completed and above).

Figure 57: Female Higher Education Graduates, by Field of Study

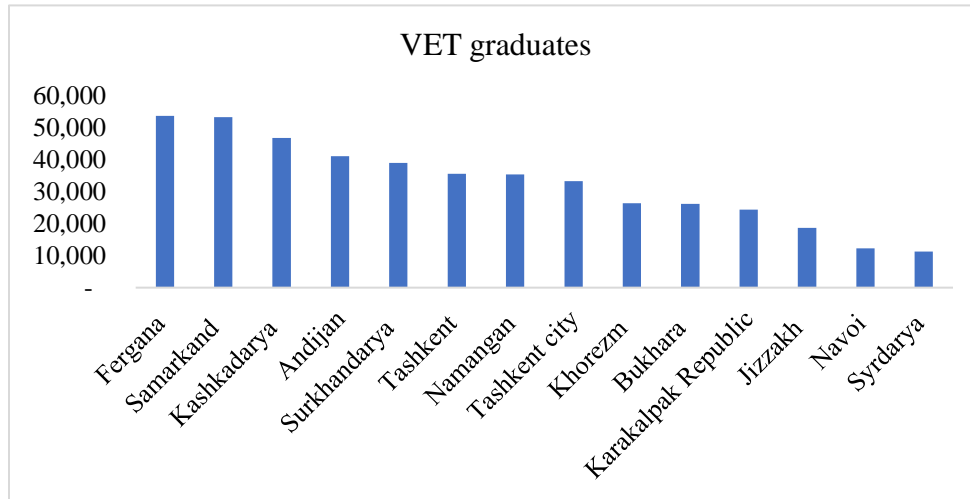


Source: UNESCO UIS.

Labor Market Outcomes for SSVE Graduates

227. **Given the current low enrollment in universities, vocational education can play a key role in preparing Uzbekistan’s workforce.** Until the 2017/18 academic year, around 500,000 students graduated from SSVE in Uzbekistan every year. According to the MHSSE, 456,794 students graduated from vocational colleges in 2017/18, most of them from institutions located in Ferghana, Samarkand, and Kashkadarya Regions (Figure 58). Almost 90 percent found employment upon graduation, considerably higher than the EU average of 77.2 percent (CEDEFOP 2017). However, only 30 percent of Uzbek SSVE graduates found a job in their field of specialization, with the largest shares in construction, agriculture, production technology, economics, and pedagogy.

Figure 58: Number of VET Graduates, by Region



Source: MHSSE.

228. **Although available official information indicates high employment rates among SSVE graduates, existing mechanisms to track new labor market entrants could be significantly improved.** Initiatives exist to trace VET graduates’ employment status, but these seem not to be systematic or commonly used across vocational colleges. In some vocational colleges visited for a rapid assessment of Uzbekistan VET’s system, quasi-tracer studies were in place; these consisted of having colleges’ representatives visit companies that hire their graduates to collect feedback from supervisors on graduates’ job performance. Such feedback was reported to be used for improving teaching and training programs. Other colleges track their graduates for one year after their graduation. At that time, if students are still employed in the areas that match their trained specialization, colleges’ administrators receive cash bonuses as an incentive. Teachers may also receive cash bonuses if their students win academic Olympiads or other similar competitions (World Bank 2017b).

229. **While nearly 90 percent of SSVE graduates find jobs upon graduation, Uzbek employers are not satisfied with their skills level.** Existing evidence from recent surveys with employers in Uzbekistan shows that SSVE graduates do not possess the skills required by their firms to succeed (World Bank 2017b). Moreover, employers report that inadequate skills of the current workforce hinder firms’ growth (World Bank 2014a). For example, 73 percent of the Uzbek firms surveyed in 2008 indicated that the skills and education of workers pose an obstacle to doing business, including 36 percent of firms that said that employee skills pose a “major” or “very severe” obstacle to growth (World Bank 2016). The 2013 skills survey found that industrial enterprises also faced severe challenges in finding the right skills among the available workforce (World Bank 2014b).

230. **A recent study suggests that although vocational colleges enter into a mandatory agreement with employers and local authorities, often colleges and firms do not sufficiently interact to address important issues, such as skills development, curriculum revisions, and practical training (World Bank 2017b).** A dual VET model may be an option for stronger and more systematic engagement between vocational schools, employers, and society as a whole. It could also allow for an increased level of ownership from both public and private stakeholders to harmonize their different and sometimes divergent interests (economic, social, and individual).

e. Social Outcomes

231. **Holistic investments in young children and students, including through immunization, nutrition, stimulation, and education interventions, are highly effective means to develop the human capital that is needed to drive economic development in the country.** The GoU seems to be taking this into account in its ongoing wide reforms.

232. **Existing evidence on early childhood development clearly demonstrates that high-quality interventions have significant and long-lasting social and economic benefits for children, their families, and society at large (Heckman 2012).** A substantial body of evidence from around the world shows that early childhood is a critical period in individuals' physical, cognitive, linguistic, and socioemotional development, and that what children experience in these early years shapes and defines their futures. Investments that nurture learning at these early stages are foundational to a virtuous cycle of lifelong learning, positive behavior, and good health outcomes. Holistic early childhood development interventions have been shown to benefit children in three broad categories of interrelated outcomes: (i) enhancing school readiness and education outcomes; (ii) improving physical and mental health outcomes; and (iii) reducing engagement in high-risk behavior. These types of interventions, which were recently considered by the MPSE for financing under a World Bank-supported project (under preparation), can have an especially powerful effect on children from disadvantaged households, helping to reduce inequalities.

233. **Over the longer term, early childhood development interventions such the ones selected by the MPSE for World Bank financing are also linked with significant outcomes for individual beneficiaries, including higher student achievement, educational attainment, post-school productivity, and income.** For example, analysis of Europe and Central Asia countries that participated in PISA 2015 indicates that even after controlling for students' socioeconomic background, those who attended preschool education performed significantly better in science than those who did not (Heckman 2012).

234. **Moreover, the mentioned interventions combining good nutritional support with early stimulation are essential in the first 1,000 days of life to ensure that children aged 0–3 thrive.** Evidence shows that good nutrition is especially important fuel for early brain development. Throughout early childhood, it is important to monitor children's nutrient intake, since without proper nutrition, children can face significant delays in growth and development. Undernourished children get sick more often and therefore are more likely to miss school and potentially drop out of the education system. Thus, nutritional deficiencies limit children's intellectual and physical development and growth, which may ultimately lead to negative long-term impacts for physical and mental health. However, nutritional support alone is insufficient to ensure that the human brain realizes its potential. Research from around the world shows that integrated early nutrition and stimulation interventions produce better emotional, social, physical, and cognitive development outcomes compared with children who do not receive such interventions. Combining early stimulation and nutrition programs with other interventions (e.g., parental/caregiver support and other health care services) can be particularly effective for supporting children aged 0–3. Home visiting programs, caregiver support, and other group-based early learning interventions are all possible models for such integrated early childhood development interventions. These interventions will be piloted by the MPSE starting in 2019 (Naudeau 2009; UNICEF and World Health Organization 2012; Richter et al. 2017; Woodhead 2016).

235. **Another social outcome is women's employment. The evidence shows that early childhood development is linked with broader benefits for families and society, such as increased participation of women in the labor force, lower rates of participation in government assistance or welfare programs, reduced criminality, and greater civic participation.** Greater access to early childhood

development services means that mothers can spend some of their time pursuing gainful activities in the local labor market. One study carried out in Brazil found that access to free, publicly provided child care services led to a large parental uptake of child care services (from 51 percent to 94 percent), as well as an increase in mothers' overall employment (from 36 percent to 46 percent) and in the employment of mothers who were not working before free child care services were available (from 9 percent to 17 percent). These findings demonstrated that providing access to child care not only encourages parents to participate in child care, but also gives mothers an opportunity to participate in the labor force (Attanasio et al. 2017).

III. Education System Monitoring

a. Roles and Responsibilities

236. **The overall education system monitoring approach is fragmented, which is likely to contribute to inefficiencies and to challenge decision-making processes.** Four institutions have clear mandates to monitor the education system. Each Ministry of Education is responsible for monitoring its own subsector (preschool, general secondary, and higher and secondary specialized education), while the recently restructured SISQE plays a key role in monitoring the whole system. Duplication of effort and inefficiencies are currently observed, given this approach. Additionally, evidence-based decision-making processes become difficult in a context with multiple responsibilities for system monitoring, including data collection and analysis.

237. **While the education ministries and SISQE are supposed to coordinate efforts in education system monitoring, the reality is different, given the multiple challenges posed by a rapidly changing context.** As an example, all relevant stakeholders are aware of the need to improve the existing information systems used for monitoring, which do not communicate with each other. Yet no plan currently exists to change this situation, apart from some discussions since June 2018 about the potential adoption of a single open source software platform. No concrete progress has occurred in this area, despite acknowledgment that the current situation is problematic.

b. Data Collection and Utilization

238. **Uzbekistan's education system lacks a data culture, explained by the legacy of heavily controlled managerial practices, which also led to challenges with evidence-based decision-making processes.** Since independence, the country has made progress with data collection and utilization in different sectors of public administration including education, but activities need to be expedited in these areas to keep up with the relevant reforms being promoted by the GoU. Additionally, the pre-independence legacy (of central planning and control) contributed to poor data quality production and subsequent utilization to a high extent. As a result, decisions are not usually made based on quality data or on any data at all. This issue is observed across sectors including education, but again, noticeable progress has occurred since independence, mainly after 2016.

239. **The collection of education data and system monitoring in Uzbekistan appear to lack comprehensiveness and coordination across institutions. In total, seven institutions collect education data at different times over the year.** The NSC collects data in various sectors including education. In addition, each education ministry – MPSE, MoPE, and MHSSE – is responsible for data collection in its specific subsector. The MoF collects data on teachers'

Data collection responsibility is shared by several institutions, which poses risks to data quality and reliability.

salaries and other education expenditures, as do the MoE and the Ministry of Employment and Labor Relations on demographics and labor matters.

240. In Uzbekistan’s education system, not only the collection but also the utilization of data is suboptimal. The three education ministries and the NSC focus mainly on the production of descriptive statistics and reports on numbers of institutions, teachers, nonteaching staff, and enrolled students, with some level of disaggregation. Again, data discrepancies are often found in reports prepared by these institutions, given the aforementioned issues with multiple and uncoordinated data collection exercises. Key education indicators, such as age–grade distortion, dropout rate, and completion rate, which are widely used internationally to measure aspects of education efficiency and attainment, are not being calculated in Uzbekistan on a regular basis or at all. Simple comparisons between institutions and levels of education are difficult to make, because data are collected separately, at different times of the year and using different methodologies.

241. Beyond descriptive statistics, there is limited utilization of data to monitor any progress with education quality or relevance in Uzbekistan. Thus, monitoring of the education system is currently based on basic indicators and done by verifying institutions’ compliance with existing standards and regulations. As mentioned in other sections of this report, no reliable data exist to measure the quality of preschool education and GSE in Uzbekistan. Moreover, as also mentioned in other parts of this report, there are very few and sporadic initiatives to measure some aspects of relevance of higher and secondary specialized education, often done by development partners as part of their analytical work.

242. Exacerbating this situation, Uzbekistan lacks an education management information system (EMIS) to store key data and produce reliable and timely information for policy and decision making. While the Education Sector Plan 2013–2017 highlighted the importance of a unified monitoring system for all education levels, including quantitative and qualitative elements, information collected for the preparation of this report shows no progress in this area, with the exception of an initiative of the MPSE to adopt OpenEMIS. This is an open source software platform for preschool education data collection, processing, and monitoring.

243. The large number of relevant education reforms in Uzbekistan gives data and statistics a prominent role in the transition from the focus on education coverage to quality. In such context, an EMIS can be fundamental for monitoring progress and fostering accountability. Information can be used as an input into management decisions and for accountability, aiming to change the relationships among various education system actors to change behaviors and so improve outcomes. For education policy makers, information is a fundamental building block likely to be at the heart of any reform that tries to improve education quality. Strengthening data systems, mainly data on outcomes, can lay the foundation for a range of reform initiatives (Bruns, Filmer, and Patrinos 2011).

244. The MPSE took an important step with the decision to adapt, test, and roll out its own EMIS, though this seems to be an isolated initiative for the time being. With the decision taken for the utilization of OpenEMIS to collect and monitor data on students, teachers, nonteaching staff, and preschools, with data disaggregated at the level of students, staff, and institutions, the MPSE is undoubtedly a step ahead of the other two education ministries. However, unless the other two ministries also adopt compatible EMIS solutions, data integration and compatibility will be difficult, if not impossible, in the medium term. The early childhood development project being prepared by the World Bank and co-financed by the GPE will provide support in the training of OpenEMIS users within the preschool education subsector.

245. **The MoPE and MHSSE do not have an EMIS for data collection and monitoring, which is worrisome.** Data on GSE, higher education, and SSVE are collected through scattered initiatives and tools, posing clear risks to data reliability, availability, serviceability, and quality. It is worth mentioning that each of these ministries is currently implementing or about to implement activities under World Bank-supported projects to develop their EMISs. Additionally, both ministries started discussions with the organization that hosts OpenEMIS on the potential utilization of this platform in their subsectors. The challenge with this potential solution is the associated costs for adaptation of the software and capacity building for its utilization at central, regional, and local level.

IV. Recommendations

246. This ESA Report reflects the current state of education outcomes and system performance across Uzbekistan's education system. It also reflects the nature and direction of ongoing reforms in various subsectors. The analysis points to several directions for further reform or prioritization. The recommendations in this final section reflect these directions. However, to ensure sustainability and minimize risks, it is important that feasibility and implementation of these recommendations be carefully studied, planned, and sequenced within the context of the GoU's ongoing reform agenda. Specific recommendations are grouped under six key areas, as follows.

Improving the Quality and Availability of Early Learning Opportunities

247. **Develop a system for measuring child development outcomes and school readiness.** The lack of a systematic approach to measuring quality of early learning outcomes hinders efforts at improvement. Development of tools for measuring child development outcomes as well as children's readiness to enter primary school is essential to support teachers and preschools to improve quality. Given the GoU's program to massively expand access, a system for monitoring quality is even more crucial to ensure that quality is not compromised.

248. **Strengthen quality of preschool learning environments.** The GoU is instituting a large campaign to expand access to preschool through construction and rehabilitation of preschool infrastructure. This is a necessary precondition for increasing access, particularly in rural areas of the country. However, improving the quality of learning conditions in preschool institutions is also essential. This may entail investment in both infrastructure and modern teaching and learning materials, equipment, furniture, and other such inputs.

Improving Teaching Conditions

249. **Ensure that the expansion of service provision in preschool and general secondary education, which means that more teachers are needed in the system, is not done in detriment to the quality of teaching conditions.** Uzbekistan's population is growing and there are relevant education reforms being implemented to expand the provision of services in preschool and general secondary education. These facts show a need for more teachers in the system, in the short- and medium-terms. Within this context, it is advisable to pay close attention to the qualifications of teachers, their prestige, and teaching conditions, while expanding the provision of services.

250. **Revise the teacher selection process to make requirements more stringent and contribute to an increase in the prestige of teachers.** Requirements to enter the teaching profession could become more stringent by making teaching positions widely available and establishing a more rigorous selection process, which can include, but may not be limited to: (i) a competency test, especially in the subject that the teacher will teach; (ii) a portfolio with evidence of the teacher's work and lesson-planning capacity; (iii) an

interview by the principal; and (iv) a specific amount of practical experience. This selection process should also raise to the tertiary level the minimum education level required to enter the profession for primary school teachers. By raising the requirements to enter the teaching profession, the education system can attract the most talented candidates, while also contributing to increase the prestige of teachers.

251. Review existing teacher policies to promote professional development and incentivize performance. Since collaborative professional development is most effective, the GoU should consider the provision of effective in-service teacher training with continuous coaching. Ideally, this professional development should follow a specific proven pedagogical technique. Moreover, attestations should be conducted on a more regular basis to avoid having underperforming teachers for a long time. Attestation results should be used to provide tailored professional development opportunities for teachers to improve. This will allow identification of teachers who chronically underperform and create a plan to help them improve through effective professional development.

Improving Existing Standards and Assessment

252. Revise the standards and curriculum to adjust to the extension of compulsory GSE from 9 years to 11 years. Uzbekistan can take the opportunity of the universalization of preschool education and the expansion of GSE to design and implement a curriculum reform that promotes the skills and competencies of the 21st century. This curriculum reform should take into account the pedagogical practices and materials, the country context, and the importance of a pilot exercise.

253. Modernize the student assessment system by adopting international good practices including the utilization of standardized tests to measure learning outcomes and inform policies. Uzbekistan does not assess the learning outcomes of students under a systematic and standardized approach, which poses challenges to the measurement of quality of education provided in the country. The improvement of existing assessments should take into account: (i) the utilization of standardized tests that would allow for the comparison of students learning outcomes over time and across regions and schools, (ii) the participation in international assessments or surveys¹¹⁶ to allow for comparisons with other countries' systems, and (iii) the utilization of results of these national and international assessments to inform policies.

Building Socioemotional Skills

254. Adapt curricula and teaching methods to foster socioemotional learning. Including the development of socioemotional skills in the curriculum or in additional social and emotional learning activities is justified on the basis of the findings described above. In addition, the World Bank's survey of 232 enterprises raised concerns not only about university graduates' creativity and willingness to learn but also about their language qualifications. Given the substantial linkage between language grades and creative imagination, it may be valuable to consider approaches to teach language skills in ways that also involve and develop imaginative and creative processes.

Promoting Inclusive Education

255. Revise and update existing legislation. International best practice indicates the importance of establishing a legal framework clearly stating the rights of persons with disabilities, including the right to quality education, which is compliant with the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD). Consequently, education-related regulations and standards will need to be revised and updated to reflect the new legal framework provisions; e.g., (i) construction and sanitation standards to

¹¹⁶ In addition to the already announced participation in PISA 2021.

allow for adequate conditions for students with special educational needs, especially disabilities; and (ii) education standards to allow for adapted and flexible teaching methods, technologies, and assessments.

256. Revise and update pre-service and in-service teacher training programs. Recently proposed measures to upgrade and retrain preschool and secondary education teachers could refer to inclusive education and pedagogies. The curriculum for pre-service teacher training programs in both pedagogical colleges and universities can be updated by including inclusive pedagogies and technologies. On the other hand, in-service teacher training programs may establish a mandatory course on inclusive pedagogies for all teachers teaching in mainstream education as part of their professional development plan.

257. Create mechanisms for systematic school collaboration. Existing evidence shows that collaboration between schools can strengthen organizations' capacity to respond to diversity among learners and create new opportunities for special school staff to support children with special educational needs integrate into mainstream education. At first, a collaboration mechanism between special and regular schools could be piloted; if successful, it could be gradually extended at national level. It could take the shape of pilot "cluster schools" whereby special and mainstream institutions enter a partnership to set up resource rooms in mainstream settings, and to support peer learning and knowledge sharing.

Developing Skills in Alignment with Labor Market Needs

258. Increase participation in higher education. Despite the increasing demands for highly skilled workers, the extent to which Uzbekistan's higher education system can provide them remains unclear among employers. Results of employer surveys suggest that increasing the relevance of higher education graduates for the labor market and economy in general requires expanding access to higher education. This could be achieved by conducting analysis of local and global labor market demands for knowledge and skills, training or recruiting specialists from abroad (from academia and the private sector) to teach those skills, as well as training the local workforce.

259. Create incentives to align fields of specialization in both vocational and higher education with growth sectors of the economy, while increasing quality. To increase the relevance of vocational and higher education, mechanisms are needed that formally align the fields of specialization with those sectors of the economy with high employability needs. This may require greater involvement of employers in the design of curriculum or the delivery of school-based career counseling programs. However, the analysis above also shows the importance of improving the quality of what is learned in both vocational and higher education. Improving the relevance of skills acquired in vocational and higher education institutions will require more efforts to improve the quality of teaching and learning at these levels of the system.

260. Provide more information on employment patterns and labor market needs. The lack of regular information about current employment patterns of graduates as well as about current needs of the labor market could be hindering the process of centralized realignment in which the government has embarked since 2011. The development of (i) a labor information system that could also inform students' decisions, and (ii) better links with employers could help to better align the higher education system with the changing needs of Uzbekistan's economy.

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Annex I – The Multi-Dimensional Preschool Education Needs Index

The Multi-Dimensional Preschool Education Needs Index (MDPNI) derives from the 2018 World Bank’s Listening to Citizens of Uzbekistan baseline survey. It includes 12 indicators in the following three dimensions: access to infrastructure, economic conditions of households, and enrollment of children in preschool education. The measure is derived first by estimating a household-level score that indicates the relative need for preschool education for a given household. In the method adopted, a household is defined as “deprived” or “in need” when it is at or above the threshold of 33% of the index. The 14 regions of Uzbekistan were ranked based on the share of households in each region classified as “in need.” It is also important to note that “severe deprivation” is defined as a household which is deprived on 50% or more of the weighted indicators in the index. A household is “vulnerable” for multidimensional poverty when households are in need on at least 20%, but less than 33% of weighted indicators in the index. The twelve indicators and their weight in the index are provided in the table below.

Dimension	Dimension Weight	Indicator	Indicator Weight
Schools	1/3	Quality of schools “poor” or “none”	1/15
		Distance to nearest school of 20 minutes or more	1/15
		Improving school priority = highest priority	1/15
		No training and teaching centers in mahalla	1/15
		Worried about providing education to children	1/15
Economic	1/3	Have children + below \$3.2/day line	1/9
		Have children + top 20% social protection mahalla	1/9
		Education 6% of budget or more	1/9
Enrollment	1/3	Have children + no current child care	1/12
		Children of age not in pre-Kindergarten	1/12
		Top quintile child share of mahalla population	1/12
		Top quintile total child population	1/12

The MDPNI follows the Alkire-Foster method that is used to develop multidimensional poverty indexes. There are several components of this method that are useful in Uzbekistan’s context. First, this method is decomposable between both subgroups and dimensions. This allows for comparisons of deprivations between regions, demographic groups and vulnerability status. Additionally, the dimensional decomposability allows comparisons within specific dimensions across subgroups. Finally, given that education and related services are multidimensional and (partially) non-monetary concepts, the creation and usage of a deprivation index was seen as more accurate and reliable than a simple monetary measure.