




Governance of TVET in Uzbekistan

Series: Governance of Education Systems

Report

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Governance of TVET in Uzbekistan

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Table of Contents

List of Figures.....	4
List of Tables.....	4
Executive Summary	5
Introduction	10
Method and Data.....	12
Survey	12
Data and respondents.....	14
Results	16
How is TVET governance in Uzbekistan perceived and how does it perform?	16
How do satisfaction and perception of performance vary by actor group?	17
What are the differences across TVET governance dimensions?.....	17
What are the differences across items within dimensions?.....	18
What type of TVET governance do actors report?	21
How well do TVET governance actors cooperate in Uzbekistan?.....	23
How should Uzbekistan prioritize improving TVET governance?.....	28
How important is each dimension?.....	28
How effective is TVET governance in the most important dimensions?	29
Conclusions and Recommendations	31
References.....	34
Appendix	35
Technical Appendix	38
How much does each dimension affect overall governance satisfaction?.....	38
How effective is TVET governance in the most important dimensions?	40

List of Figures

- Figure 1: Overall satisfaction with TVET governance by actor group17
- Figure 2: Reported and calculated governance scores by dimension18
- Figure 3: Governance type in Uzbekistan22
- Figure 4: Governance network in Uzbekistan24
- Figure 5: Comparison of TVET governance networks in Uzbekistan and Switzerland25
- Figure 6: Importance of each dimension.....29
- Figure 7: Regression of reported and calculated dimension scores on reported overall governance satisfaction.....39
- Figure 8: Correlation of scores and coefficients40

List of Tables

- Table 1: Governance index dimensions and items12
- Table 2: Actor group composition and respondents.....15
- Table 3: Item scores19
- Table 4: Cooperation matrix for the TVET governance network in Uzbekistan26
- Table 5: Importance of dimension perception and performance for overall satisfaction28
- Table 6: Detailed sample comparing tokenized actor groups to responded actor groups.....35
- Table 7: Detailed network results36
- Table 8: Survey questions and scores for governance type.....37

Executive Summary

This study explores the governance of TVET in Uzbekistan through a survey of 646 system actors about key governance indicators (Renold, Caves, & Oswald-Egg, 2019). We surveyed a large sample of experts and practitioners in the Uzbek TVET sector about governance in eight key dimensions.

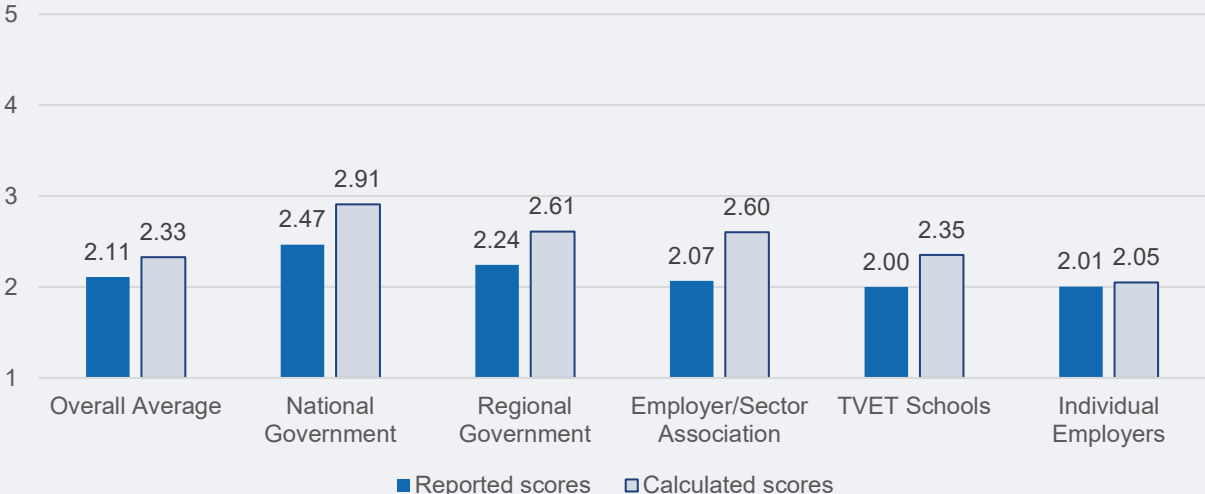
1. Nationally uniform approach to TVET
2. System updating and management
3. Communication with other systems
4. Financing and incentives for stakeholders
5. TVET places match labor market demand
6. Quality assurance for TVET programs
7. Career guidance for students
8. System permeability (no dead-end pathways)

How is TVET governance in Uzbekistan perceived and how does it perform?

Actors in Uzbekistan’s TVET system report that they are slightly unsatisfied with its governance. The average reported score is 2.11 on a scale from 1 (very unsatisfied) to 5 (very satisfied). The overall average calculated score (average of items in each dimension, then average of all dimensions) is 2.33 on the same 1-to-5-point scale

Figure E1 shows overall satisfaction with TVET governance by actor group, comparing reported and calculated scores. The national government is the most satisfied, followed by regional governments, employer associations, and TVET providers and employers. Actors’ perception of TVET governance in each dimension seems to be very slightly worse than the calculated performance, but variation across dimensions is negligible.

Figure E1: Satisfaction with TVET governance overall and by actor group



Notes: Columns show scores for each actor group on a one-to-five-point scale. Bright blue bars show the reported scores, and light blue scores show calculated scores. N=454 for reported scores, 572 for calculated scores.

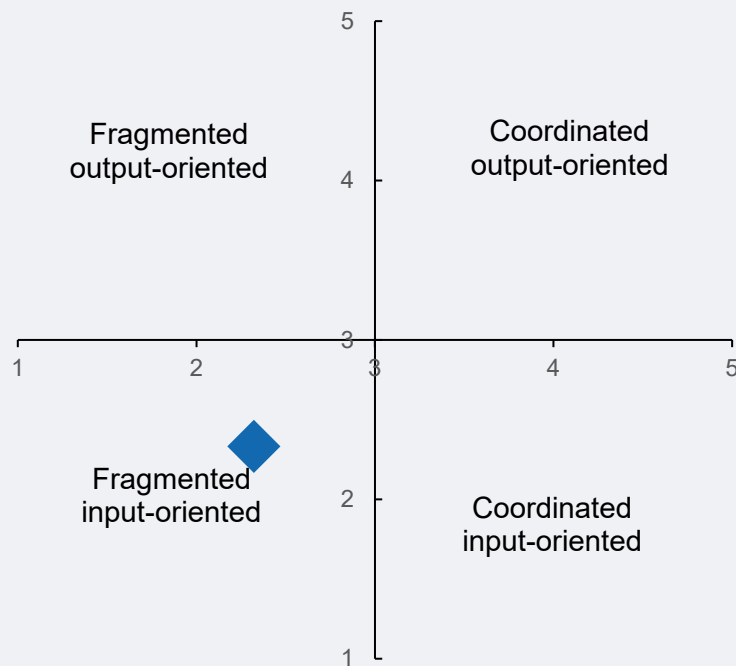
Main findings – Perception and performance of TVET governance

1. Satisfaction with TVET governance is relatively low both according to perception (2.11) and governance performance (2.33).
2. Actors working on the national level are more satisfied with TVET governance, while regional or local actors are less satisfied.
3. All dimensions and items of governance have essentially the same scores. There is no large variation that would point to strengths or weaknesses.

What type of TVET governance do actors report?

Rauner, Witting and Deitmer (2010) develop and measure ideal types of TVET governance based on scales for governance type and mode. Governance type refers to the integration of the system, specifically how coordinated or fragmented TVET governance is. TVET governance ranges from input-oriented, where governance processes are organized by rules and the distribution of resources, to output-oriented, where governance is organized around the end product or goal. Figure E2 shows that actors report Uzbekistan's system is fragmented and input-oriented.

Figure E2: Governance type in Uzbekistan



Notes: Uzbekistan's governance type is plotted with the blue diamond. Axes show scores for governance type and mode. Lower scores on governance type (x axis) indicate a more fragmented governance style, while higher scores indicate a more coordinated governance style. On the y axis, which shows governance mode, lower scores indicate a more input-oriented style while higher scores indicate a more output-oriented style. N=571-593 depending on dimension.

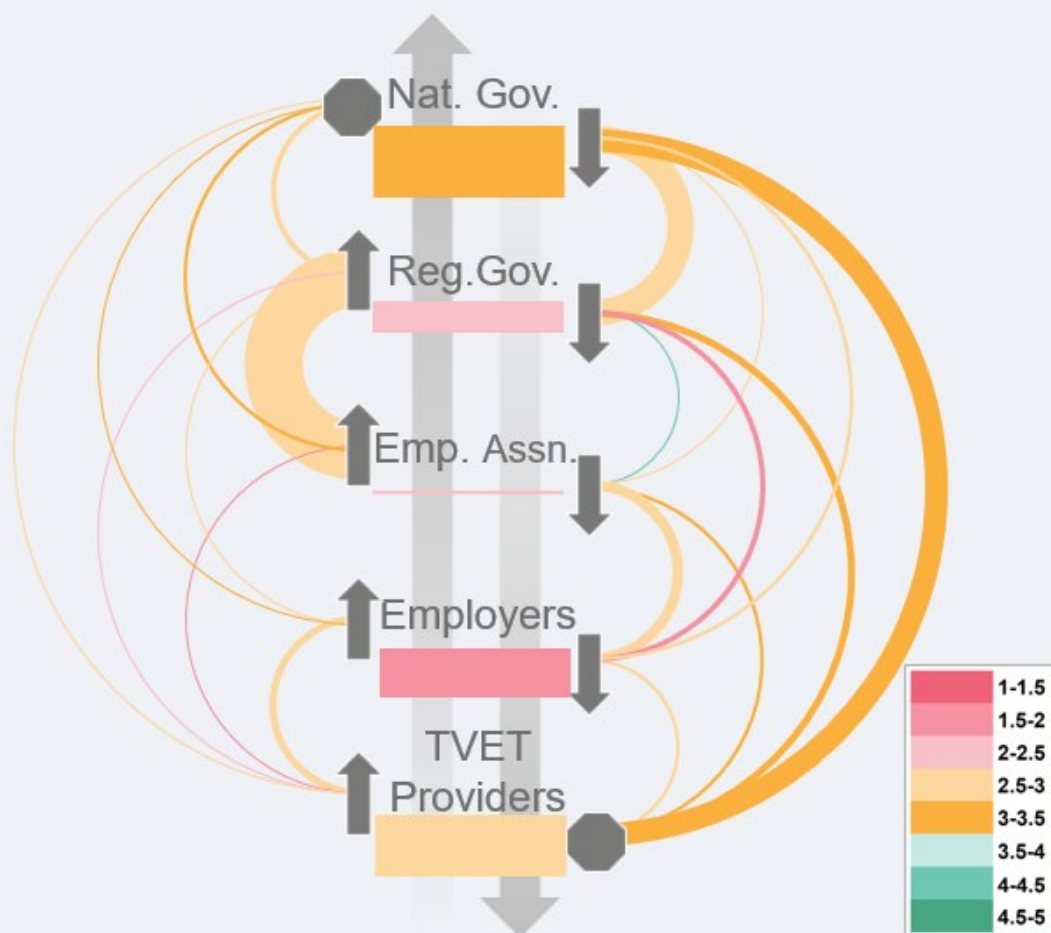
Main findings – TVET governance type

1. Uzbekistan's TVET actors report a fragmented, input-oriented governance type
2. There is no universal best practice, but the low overall satisfaction with TVET governance may indicate that this governance type is not ideal for Uzbekistan

How well do TVET governance actors cooperate in Uzbekistan?

TVET governance can be described as a network with relations across actor groups who work together to design, deliver, and update TVET programs. Uzbekistan's governance network for TVET is generally unsatisfied (average satisfaction of 2.28 out of 5 points). It is also highly unusual for a TVET governance network, as shown in Figure E3.

Figure E3: Governance network in Uzbekistan



Notes: Line thickness represents relation load (product of relations' adjacency and reported intensity), and color is satisfaction according to the scale shown in the bottom-right corner. Relations flow up the chart on the left and down the chart on the right. Vertical order is not a precise representation of hierarchy. Within-group relations are shown as horizontal bars below the name of each actor group. N=630 individual respondents, 739 relations (individuals report multiple relations).

Main findings – TVET governance network

1. Satisfaction with cooperation is relatively low, even in within-group relations
2. There are no intermediaries in the Uzbek TVET governance network providing either representing or directing functions.
3. Within-group relations account for most of the cooperation in the network. This may indicate fragmentation or lack of institutionalized cooperation. Furthermore, cross-group collaboration is largely missing
4. Other actors work with employers, but employers do not reciprocate. Employers may be overburdened by direct cooperation.
5. Employer associations and chambers of commerce are not fully part of the network. They report working with other actors, but other groups report only working directly with employers. Employers report no relation to associations.

How should Uzbekistan prioritize improving TVET governance?

Using two different approaches with our reported and calculated scores, we can specifically identify how important actors' **perception** of a dimension is and, separately, how important **performance** is for satisfaction. Table E1 shows that actors' *perception* of four dimensions are related to their satisfaction with TVET governance. Better *performance* in three dimensions is related to higher satisfaction with TVET governance.

Table E1: Importance of dimension perception and performance for overall satisfaction

	Perception of dimensions	Dimension performance
Related to better overall satisfaction	Nationally uniform approach Communication with other systems Quality assurance for TVET programs Career guidance for students	Financing and incentives Career guidance for students System permeability
No effect	System updating and management Financing and incentives Labor market matching System permeability	Nationally uniform approach Communication with other systems Labor market matching Quality assurance
Related to worse overall satisfaction		System updating and management

Notes: Based on regression of reported (*perception*) and calculated (*performance*) dimension scores on overall satisfaction. See technical appendix for full details. Dimensions in the top row have positive and significant correlations with overall satisfaction, those in the middle row are not significant, and those in the bottom row have negative and significant correlations with overall satisfaction. Results are not causal.

Main findings – Priorities

1. To improve perception of TVET governance, the most important dimensions are external communication, quality assurance, and career guidance.
2. To improve TVET governance performance, the most important dimensions are system permeability, career guidance, and financing and incentives.

Conclusions and Recommendations

Having examined TVET governance in numerous contexts, some of the challenges we observe here are typical of contexts like Uzbekistan's and some are surprising. Actors in Uzbekistan's TVET sector are aware that the governance of the system is not where it needs to be. They are generally unsatisfied, and their opinion aligns with the calculated performance of system governance. This clear-sightedness indicates awareness of problems and motivation to improve.

One pattern that is quite common across countries is the higher satisfaction of higher-level actors. However, in combination with the high fragmentation and input-orientation we observe in Uzbek TVET governance, this satisfaction discrepancy becomes a sign of a larger problem.

Recommendation 1

Shift from input-oriented governance toward output-oriented governance. Specifically, this means regulating standards and ensuring quality by assessing whether standards are met, rather than regulating learning processes and ensuring quality by managing those processes. This will require a transition from knowledge- or subject-based curricula to competency-based curricula.

The relations among actors in Uzbekistan's TVET governance network are extremely unusual. In a typical governance network for TVET, we would expect to see cooperation across actor groups facilitated by intermediary organizations. In Uzbekistan, we observe nearly the opposite of these common patterns. We have observed the high importance that TVET actors in Uzbekistan place on quality, and education-employment linkage is necessary for quality. A cooperative governance network that uses robust employer associations to facilitate employer leadership is necessary for education-employment linkage.

Recommendation 2

Prioritize a cooperative governance network in which employer associations (or sector associations, chambers of commerce, etc.) are true employer representatives and facilitate employer leadership of TVET. This will require defining a role and power for employers and their associations in TVET design, delivery, and updating.

Uzbekistan's pattern of all governance dimensions earning the same low scores is unique. We find differences in the things that matter for how people feel about TVET governance and the things that make TVET governance better in terms of performance. Career guidance and counseling is the only dimension that matters from both perspectives, so this is a clear priority. System permeability and financing and incentives may not be the most attractive areas for improvement, but these are very important for improving performance.

Recommendation 3

Focus on improving career guidance and counseling. Although communication and quality are attractive areas, they are only important for the perception of TVET governance, not its performance. Focus on system permeability and financing and incentives to improve TVET governance performance.

One pattern that emerges across all areas of investigation is a focus on quality. However, quality is an outcome of a healthy system. The results here show that the governance of TVET in Uzbekistan struggles with fundamental problems like cooperation, governance mode, involving the appropriate actors, and setting priorities. Solving fundamental problems is more likely the first step towards quality, rather than quality being the first step towards desired outcomes.

Recommendation 4

Focus on solving fundamental problems and treat quality as a goal or an outcome.

Introduction

In the past, TVET in Uzbekistan was the mainstream education pathway for young people, with 93% of students in upper secondary education taking TVET in 2015 (ETF 2017, p. 57). Until 2017, TVET was part of a 12-year compulsory education. The education sector reform, which was formalized in 2019, reduced compulsory education to 11 years with TVET an optional two-year TVET program after compulsory education. While nearly 1,500 TVET institutions had been delivering training to over a million students before 2017 according to the Asian Development Bank (ADB, 2020)¹, the sector has largely collapsed since the reform. Today, UNESCO reports that 23.2% of youth participate in TVET².

The TVET sector had governance challenges when it was part of the compulsory education system, and those have only been exacerbated by the change. According to the ADB (2020), skills mismatch is a major problem, driven by the focus of the system on knowledge rather than competencies, the lack of workplace learning, and issues with processes of assessment, certification, and curriculum development. There is little career guidance for students, and very limited interface between TVET and industry. The lack of systemic employer engagement at any point in the TVET curriculum process is a major problem, reinforced by the lack of industry organizations. Sector skills councils have been established but are not yet operational. The ministries responsible for coordinating skills development and delivering TVET face major challenges in connecting skills supply and demand.

Terminology Note

VET is an internationally applicable term. In developing contexts, **TVET** is often used to encompass the entire pathway of technical and vocational education and training at the secondary, post-secondary, and tertiary levels (typically ISCED level 3 upwards). In Uzbekistan, the sector is commonly referred to as PE (professional education). To avoid confusion with PET (professional education and training, TVET at ISCED level 5 and higher), **we will use TVET in this report when speaking of the sector generally and will not use program names unless speaking of them specifically.**

¹ <https://www.adb.org/projects/documents/uzb-51012-003-rrp> accessed December 2022

² <https://unevoc.unesco.org/home/Dynamic+TVET+Country+Profiles/country=UZB> accessed December 2022

This study is part of a long-term research agenda in partnership with Helvetas Uzbekistan. The previous study (Renold, Caves, & Zubovic, 2021) captures the baseline level of education-employment linkage in Uzbek TVET programs. This study is the baseline study on the governance of the TVET system. Future studies hope to capture progress in these areas as well as other key metrics.

This study explores the governance of TVET in Uzbekistan through a survey about key governance indicators (GOVI; Renold, Caves, & Oswald-Egg, 2019). We surveyed a large sample of experts and practitioners in the Uzbek TVET sector, capturing a broad perspective on governance in eight dimensions. Our main research questions are:

1. How is TVET governance in Uzbekistan perceived and how does it perform?
 - a. How do satisfaction and perception of performance vary by actor group?
 - b. What are the differences across TVET governance dimensions?
 - c. What are the differences across items within dimensions?
2. What type of TVET governance do actors report?
3. How well do TVET governance actors cooperate in Uzbekistan?
4. How should Uzbekistan prioritize improving TVET governance?
 - a. How important is each dimension?
 - b. How effective is TVET governance in the most important dimensions?

We describe the survey and our data in the next section, then address each research question in turn in the following sections. We close with conclusions and recommendations for TVET governance in Uzbekistan.

Method and Data

Survey

This study is based on a survey of key governance actors in the Uzbek TVET sector. The survey samples individuals at all levels and in all key institutions related to TVET. It asks about their overall satisfaction with the governance of the TVET sector, and about how well they think governance works in eight key dimensions. These dimensions are each comprised of individual items and measure important aspects of TVET governance. They are a simplified version of the governance index used in Switzerland by Renold, Caves, and Oswald-Egg (2019). Table 1 shows the dimensions and items of TVET governance.

Table 1: Governance index dimensions and items

Dimension	Items
Nationally uniform approach to TVET	
In your opinion, is TVET in Uzbekistan governed in a consistent way throughout the country?	
<i>E.g. Legislation and framework curricula for TVET is consistent across the country.</i>	
TVET is governed by a single set of rules.	
Occupational profiles/curricula are nationally consistent.	
A single institution (e.g. Ministry) coordinates all TVET programs and providers	
All of the relevant actors (e.g. chambers of commerce, TVET providers, etc.) are included in TVET governance	
All TVET actors have clear roles and responsibilities	
There are clear national standards for TVET quality and accountability	
Companies cooperate with TVET providers to offer training.	
System updating and management	
In your opinion, is TVET in Uzbekistan effectively managed and kept up to date?	
<i>E.g. the TVET system is adapted to the requirements of the labor market and results are monitored.</i>	
TVET is consistently updated and developed	
TVET curricula/profiles are consistently evaluated and updated	
TVET is evaluated against important political goals	
The results of evaluations are used to improve TVET in the future	
Communication with other systems	
In your opinion, do the ministries involved in TVET work together well enough?	
Is the responsibility for governing TVET distributed across multiple ministries?	
Is the responsibility for governing TVET concentrated in a single ministry?	
Financing and incentives for stakeholders	
In your opinion, is TVET in Uzbekistan efficiently financed?	
<i>E.g. There is a smooth flow of information between the actors at the different political levels of TVET. Communication flows between the federal government, local governments, employer associations or chambers of commerce, schools, and companies.</i>	
TVET providers receive funding per student	
TVET providers receive funding for teachers, materials, etc.	
TVET providers are expected to achieve set standards in order to maintain funding	
TVET providers receive funding regardless of performance	
The appropriate ministry monitors companies' costs and benefits from training	
Employer associations or chambers of commerce help manage the system	

TVET places match labor market demand

In your opinion, do TVET providers in Uzbekistan try to match the labor market demand for skills?

E.g. TVET training matches the demand on the labor market for people with those skills. For example, there are enough TVET positions in key occupations and the jobs in demand are offered through TVET.

Students choose their TVET occupations based on what their local TVET provider offers

Students choose their TVET occupations based on what local companies offer

TVET providers offer places based on whether employers can offer workplace learning

TVET leadership tries to fix imbalances in training supply and demand

Quality assurance for TVET programs

In your opinion, is TVET in Uzbekistan high quality?

E.g. TVET providers and training companies are supervised and comply with quality criteria, results of final TVET exams are generally good.

Students earn diplomas when they master clear learning outcomes and standards

Students earn diplomas based on attending all required courses/modules

Quality standards are set and enforced by the national TVET authority

Quality standards are set by the national TVET authority and enforced locally

TVET teachers and trainers must meet nationally prescribed standards

Training and further education is always available for TVET teachers and trainers

Career guidance for students

In your opinion, how well do TVET students understand their options for the future?

E.g. TVET learners have complete and consistent information about their educational options.

Career guidance and counseling is consistent throughout Uzbekistan

All students have access to career guidance and counseling

Secondary TVET is free of charge for all

System permeability (no dead-end pathways)

In your opinion, does the system prevent dead ends for TVET students in Uzbekistan and offer progression routes from all programs?

E.g. There are further education and training options for all graduates, students who start in TVET can eventually earn academic tertiary qualifications, no program leads to a dead end.

Secondary TVET (Initial Vocational Education) students can access universities

Requirements are clear for secondary TVET students who wish to go to university

Students from TVET colleges and Technicums can access universities

Requirements are clear for students from TVET Colleges and Technicums who wish to go to university

Secondary TVET (Initial Vocational Education) students can access TVET colleges and Technicums

Requirements are clear for secondary TVET students who wish to go to TVET colleges and/or Technicums

All formal education/TVET institutions can recognize informally and non-formally acquired learning (e.g. from company training programs)

All formal education/TVET institutions do recognize informally and non-formally acquired learning (e.g. from company training programs)

This report summarizes the descriptive results about TVET governance satisfaction, variation across actor groups, and variation across dimensions and items. We also provide simple analytical results using regression analysis that examine how these results can be used to prioritize improvements in TVET governance.

In addition to the dimensions of governance, we also explore the relationships among actor groups in the governance of TVET. We use a set of questions to map and describe the TVET governance network, including the frequency and intensity of actor-group relations and how actors feel about collaboration with their partners. We use basic social network analysis to describe and briefly analyze the network.

Data and respondents

TVET governance is a collaborative effort requiring multiple levels of governance and implementation. It also requires the participation of private-sector actors as well as the public sector. Based on this and the context in Uzbekistan, we survey individuals in five actor groups:

1. National government
2. Regional governments
3. Employer associations
4. TVET providers
5. Employers

The national government includes individuals from ministries, line ministries, and national institutes involved in the governance of TVET. The regional governments include regional line ministries related to TVET and regional heads of TVET. The employer associations include sector skills councils, chambers of commerce, and professional associations. TVET providers include TVET providers, TVET colleges, and Technicums as well as TVET training centers. Finally, employers includes companies, and other institutions that employ individuals in TVET-related occupations but do not necessarily provide training.

The survey sample for this study was developed collaboratively by the authors of this study and the Helvetas team in Uzbekistan to identify the relevant actor groups and sub-groups and then find individuals to sample as respondents within those groups. Table 2 shows the actor groups and sub-groups that comprise each. We also show the respondents in each group.

Every effort was made to foster inclusiveness. We ran the survey for three months from June-September, 2022. The survey was conducted in Uzbek. Participants were invited and reminded via email, then received follow-up contact via phone calls.

The raw survey data included 896 observations, which we cleaned down to the final 646. The overall response rate is therefore 30% of the 2185 invitations we sent. In absolute numbers, providers represented the largest cohort of responses (262 individuals) followed by employers (218 individuals). Proportionally, we had robust responses from the national and regional governments (approximately 37% and 33%, respectively). Response rates for TVET providers and training companies are difficult to report precisely because the token list mixed the two groups. Respondents reported belonging to actor groups that did not always match the token list. We have taken actors' responses as accurate, but Table 6 in the appendix shows exactly how the two lists align.

The survey was tokenized, but we had a number of multiples that indicated individuals had forwarded the link or used an administrative link during phone follow-ups. We kept these observations except when they were empty. When the tokens were only used once and the survey was filled out but the actor group was left blank, we used token data to fill in the actor group (50 observations).

Table 2: Actor group composition and respondents

Actor Group	Example(s)	Responses
National Government	Ministry of Higher Education & Secondary Specialized Education	43
	Other key ministries: Poverty, Finance, Labor, Economy, Public Education	
	Line ministries implementing TVET programs	
	State inspection agency (quality control)	
	Pedagogical Institution for TVET	
	Labor Institute (research center)	
14 Regional governments	14 Regional Heads of TVET (MoHESSE)	67
	Regional branches of line ministries (when present)	
	Regional governors/authorities	
Employer Associations	Chambers of commerce	56
	Professional associations	
	29 National sector skills councils (related to line ministries)	
	2 Industrial clusters (cotton & agriculture)	
TVET providers	TVET providers	262
	TVET colleges	
	Technicums	
Employers	Training companies	218
	Non-training companies	
Total		646

Notes: respondents are listed according to the actor group they report, which is also used throughout this report. For a comparison of token list actor classifications and reported groups, see table in the appendix.

Results

This section presents results by research question. First we explore the overall perception of TVET governance in Uzbekistan in terms of how actors perceive governance and how we measure governance performance. We look at overall satisfaction with governance and governance performance by actor group to see how the system looks from different perspectives. Finally, we conclude our analysis of governance satisfaction and performance by looking into the individual dimensions and items that make up our measurement of TVET governance.

We go beyond the measurement of TVET governance satisfaction and performance by using a selection of items to assess the type and mode of governance. This is a method that has been used internationally and—though not perfectly comparable—can help give a sense of Uzbekistan’s TVET governance in a global context. It is also a useful way to consider whether the current status aligns with actors’ preferences for fragmentation vs coordination and input- vs output-oriented governance.

Finally, we turn to priorities for potential change or intervention by looking at how important dimensions are for overall perception of TVET governance or for TVET governance performance. We use these findings to identify the best starting points for further action and improvement in Uzbekistan.

How is TVET governance in Uzbekistan perceived and how does it perform?

In this section, we will report two types of scores for most governance dimensions. The **reported scores** are what participants answered directly when we asked how well the Uzbek TVET system carries out a particular dimension of governance. The **calculated scores** are the average of the items within a given dimension. Reported scores indicate how actors perceive the governance of the system, while calculated scores measure governance performance.

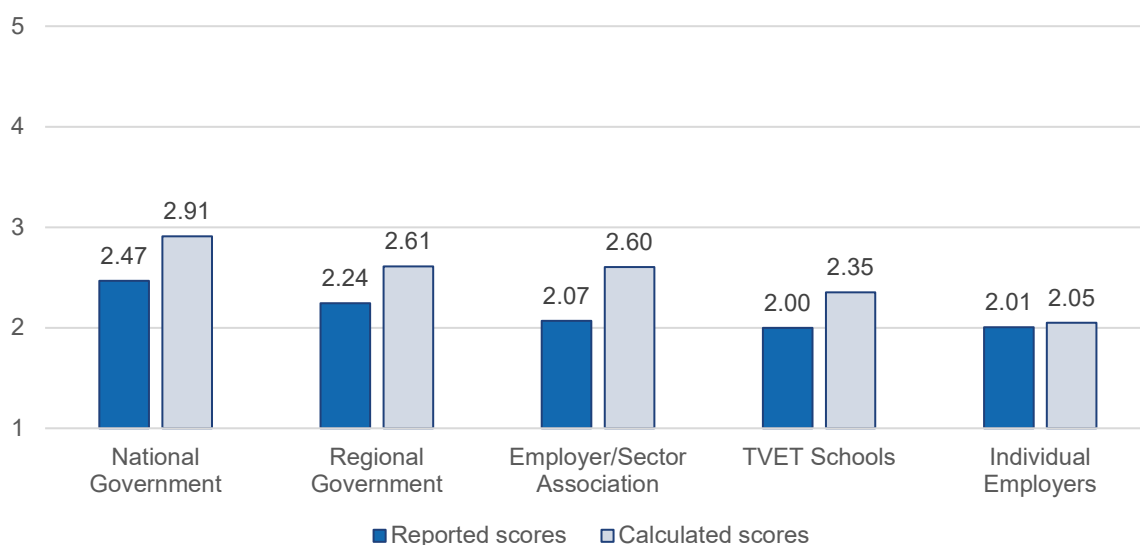
When asked “Overall, how satisfied are you with the governance of the TVET system in Uzbekistan?” actors in Uzbekistan’s TVET system report that they are slightly unsatisfied with its governance. The **average reported score is 2.11** on a scale from 1 (very unsatisfied) to 5 (very satisfied). We also asked respondents how effectively they think each dimension of governance is carried out, and the average of those dimension-level reported scores is 2.10. These scores are very close together, meaning actors’ reported overall satisfaction is reliable.

Calculated satisfaction at the overall and dimension levels is built by averaging items into dimensions and then dimensions into an overall score. These represent performance more than perception, at least as defined by the content of the index used here. **The overall average calculated governance score is 2.33** on the same 1-to-5-point scale. This score is very slightly higher than reported satisfaction with TVET governance but again reinforces the general finding. The similarity indicates that the dimensions we focus on in our measurement of governance are at least generally appropriate in Uzbekistan’s TVET governance. **By both measures, actors are generally dissatisfied with TVET governance in Uzbekistan.**

How do satisfaction and perception of performance vary by actor group?

Different actor groups typically have different perceptions of the system and different perspectives on its performance. Figure 1 shows overall satisfaction with TVET governance by actor group, comparing reported and calculated scores. **The national government is the most satisfied, followed by regional governments, employer associations, and TVET providers and employers.** This pattern of higher satisfaction among higher-level actors is common (e.g. Renold, Caves, & Oswald-Egg, 2019) but it does indicate that system leadership has a different experience than local-level actors. In all categories, the calculated score is very slightly higher than the reported score. Only employers have approximately equivalent scores in both measurements.

Figure 1: Overall satisfaction with TVET governance by actor group



Notes: Columns show scores for each actor group on a one-to-five-point scale. Bright blue bars show the reported scores, and light blue scores show calculated scores. N=454 for reported scores, 572 for calculated scores.

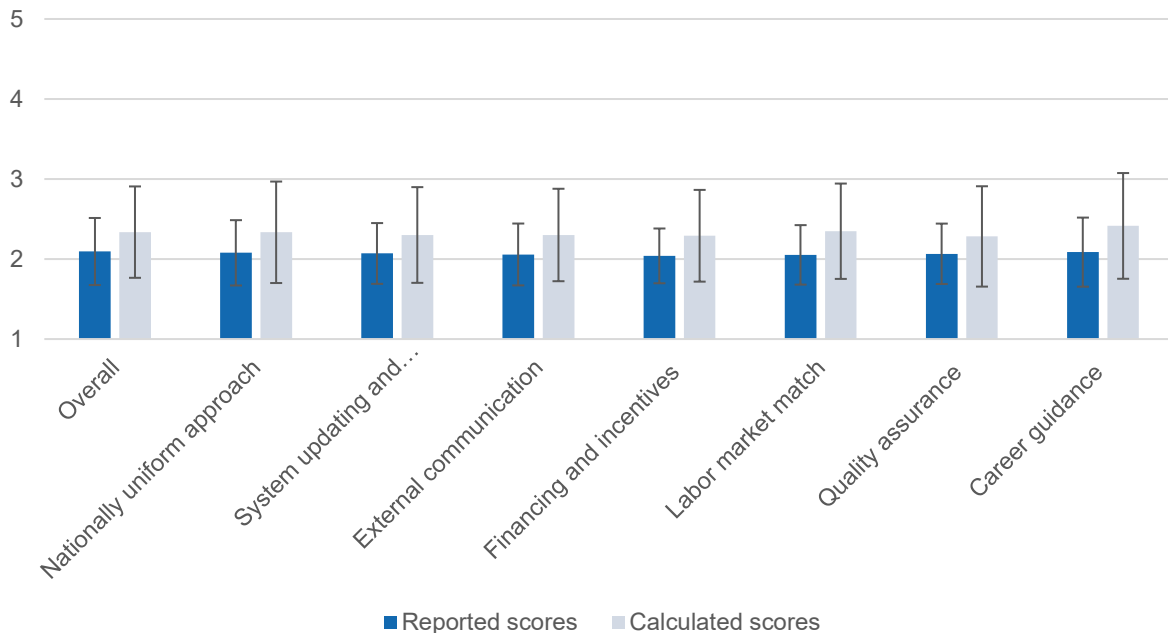
What are the differences across TVET governance dimensions?

This study of governance uses eight dimensions to describe governance. Figure 2 shows the scores for each dimension, with reported scores in bright blue and calculated scores in light blue. The pattern here is similar to the overall pattern, with calculated scores slightly higher than reported scores in each dimension. **Overall, actors' perception of TVET governance seems to be very slightly worse than the calculated performance**, either because the performance metric is missing something or because actors' perception is slightly worse than the situation.

From both reported and calculated perspectives, **scores indicate that there are moderate problems with governance in Uzbekistan's TVET sector and actors are moderately dissatisfied.** There is an extremely low degree of variation across dimensions—we do not observe any significantly different dimensions and therefore do not report any particular strengths or weaknesses in the system. **The consistency across dimensions is so remarkable that we looked into the data more deeply.** Individual responses do vary within each dimension, as shown by the bars showing standard errors. Every dimension has responses that cover the full range of the scale. On the respondent side, no individual

respondent gave the same score for every question—everyone gave higher and lower scores across items. In total, however, the average score in each dimension is extremely consistent at a moderately dissatisfied level and no dimension is significantly different from the others.

Figure 2: Reported and calculated governance scores by dimension



Notes: Columns show scores for each dimension on a one-to-five-point scale. Bright blue bars show the reported scores, and light blue scores show calculated scores. Error bars show one standard error to show within-dimension variation. N ranges from 519-597 depending on the dimension. See following table for precise scores.

What are the differences across items within dimensions?

The most granular level of data in this study is the item, which equates to a single question in the survey. Table 3 shows the scores for each item and dimension. **Again, the most striking finding is that—despite variation within items and within each respondent—the average scores for each item are extremely consistent at a level of a moderately big problem. All scores range between 2.04 and 2.54.** These are not different, so we do not interpret anything from the very small differences between items. Again, there is not much variation that rises to the level of strengths or weaknesses reported by Uzbekistan’s TVET actors. Everything is consistent at a moderate weakness.

Table 3: Item scores

Dimension	Items	Score	Standard error
Nationally uniform approach		2.09	0.42
	TVET is governed by a single set of rules.	2.34	0.70
	Occupational profiles/curricula are nationally consistent.	2.34	0.72
	A single institution (e.g. Ministry) coordinates all TVET programs and providers	2.39	0.81
	All of the relevant actors (e.g. chambers of commerce, TVET providers, etc.) are included in TVET governance	2.32	0.73
	All TVET actors have clear roles and responsibilities	2.33	0.73
	There are clear national standards for TVET quality and accountability	2.31	0.72
	Companies cooperate with TVET providers to offer training.	2.33	0.71
System updating and management		2.08	0.41
	TVET is consistently updated and developed	2.29	0.65
	TVET curricula/profiles are consistently evaluated and updated	2.35	0.73
	TVET is evaluated against important political goals	2.33	0.78
	The results of evaluations are used to improve TVET in the future	2.37	0.75
External communication		2.07	0.38
	Is the responsibility for governing TVET distributed across multiple ministries?	2.30	0.68
	Is the responsibility for governing TVET concentrated in a single ministry?	2.30	0.73
Financing and incentives		2.06	0.39
	TVET providers receive funding per student	2.32	0.67
	TVET providers receive funding for teachers, materials, etc.	2.26	0.69
	TVET providers are expected to achieve set standards in order to maintain funding	2.30	0.75
	TVET providers receive funding regardless of performance	2.37	0.79
	The appropriate ministry monitors companies' costs and benefits from training	2.34	0.75
	Employer associations or chambers of commerce help manage the system	2.23	0.67
Labor market match		2.04	0.34
	Students choose their TVET occupations based on what their local TVET provider offers	2.32	0.67
	Students choose their TVET occupations based on what local companies offer	2.28	0.69
	TVET providers offer places based on whether employers can offer workplace learning	2.29	0.71
	TVET leadership tries to fix imbalances in training supply and demand	2.28	0.70
Quality assurance		2.05	0.37
	Students earn diplomas when they master clear learning outcomes and standards	2.37	0.71
	Students earn diplomas based on attending all required courses/modules	2.32	0.70
	Quality standards are set and enforced by the national TVET authority	2.31	0.80
	Quality standards are set by the national TVET authority and enforced locally	2.30	0.75
	TVET teachers and trainers must meet nationally prescribed standards	2.42	0.78
	Training and further education is always available for TVET teachers and trainers	2.39	0.74
Career guidance		2.07	0.38
	Career guidance and counseling is consistent throughout Uzbekistan	2.27	0.67
	All students have access to career guidance and counseling	2.29	0.71
	Secondary TVET is free of charge for all	2.30	0.76

System permeability	2.09	0.43
Secondary TVET (Initial Vocational Education) students can access universities	2.41	0.84
Requirements are clear for secondary TVET students who wish to go to university	2.38	0.78
Students from TVET colleges and Technicums can access universities	2.54	0.90
Requirements are clear for students from TVET Colleges and Technicums who wish to go to university	2.45	0.82
Secondary TVET (Initial Vocational Education) students can access TVET colleges and Technicums	2.48	0.89
Requirements are clear for secondary TVET students who wish to go to TVET colleges and/or Technicums	2.43	0.81
All formal education/TVET institutions can recognize informally and non-formally acquired learning (e.g. from company training programs)	2.35	0.74
All formal education/TVET institutions do recognize informally and non-formally acquired learning (e.g. from company training programs)	2.29	0.73

Notes: Item scores are averages of all responses on each item. Dimension scores are calculated scores, built by averaging all items within each dimension. Standard errors show the level of variation in each item. Standard errors show how much variation there is around the average for each item. N ranges from 519-593 depending on the item.

Main findings – Perception of TVET governance

- 4.** Satisfaction with TVET governance is relatively low both according to perception (2.11) and governance performance (2.33).
- 5.** Actors working on the national level are more satisfied with TVET governance, while regional or local actors are less satisfied.
- 6.** All dimensions and items of governance have essentially the same scores. There is no large variation that would point to strengths or weaknesses.

What type of TVET governance do actors report?

Rauner, Witting and Deitmer (2010) develop and measure ideal types of TVET governance based on scales for governance type and mode. This approach has been applied in several contexts (e.g., Austria, Denmark, Germany, Switzerland: Rauner et al., 2010; Nepal: Renold & Caves, 2017; Switzerland: Renold, Caves, & Oswald-Egg, 2019; Spain: Samanes, 2016; etc.). It is a useful simple means of capturing governance in a way that is approximately comparable to other studies in other countries. This case is not perfectly comparable but does provide a useful context.

Governance type refers to the integration of the system, specifically how coordinated or fragmented TVET governance is. For example, a situation where TVET governance is handled within a single ministry would be highly coordinated and one where it is spread among many ministries would be highly fragmented (Renold & Caves, 2017).

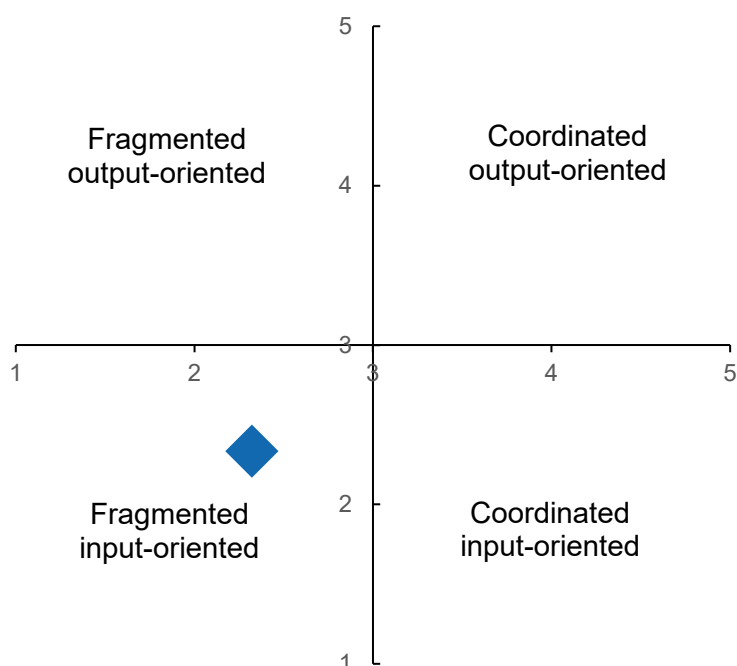
Governance mode refers to how the process of governance is organized. Specifically, TVET governance ranges from input-oriented, where governance processes are organized by rules and the distribution of resources, to output-oriented, where governance is organized around the end product or goal. For example, an input-oriented TVET program is governed by providing specific resources like textbooks, lesson plans, funding for specific purposes like teachers or equipment. An output-oriented TVET program focuses on the student. In this mode, the government provides lump-sum per-student funding that institutions can use as they wish. They are held accountable for achieving the goal of sufficiently educating students.

We included a limited set of questions related to governance type and mode in this survey. We do not include the full set of questions described by Rauner et al. (2010), so we caution against highly specific comparison to other studies. Rauner et al. (2010) describe seven dimensions of governance that load into the two overall categories of type and mode. In the list below, numbers 1-5 all load into governance type (coordination vs. fragmentation) and numbers 6-7 load into governance mode (input orientation vs. output orientation).

1. Legal framework for VET
2. Actor and stakeholder interactions
3. Improvement and updating
4. Policy balance
5. Distribution of strategic and operational functions
6. Results orientation
7. Standards-setting orientation

We include two survey questions related to dimensions 1-5, six survey questions for dimension 6, and one question for dimension 7. Table 8 in the appendix shows the survey questions for each dimension and the scores for questions, dimensions, and governance type and mode. We score on the same five-point scale we use throughout this report instead of using Rauner et al.'s (2010) 10-point scale. Figure 3 shows the governance type and mode plotted on a simple set of axes, showing that Uzbekistan has fragmented, input-oriented governance.

Figure 3: Governance type in Uzbekistan



Notes: Uzbekistan's governance type is plotted with the blue diamond. Axes show scores for governance type and mode. Lower scores on governance type (x axis) indicate a more fragmented governance style, while higher scores indicate a more coordinated governance style. On the y axis, which shows governance mode, lower scores indicate a more input-oriented style while higher scores indicate a more output-oriented style. N=571-593 depending on dimension.

Fragmentation appears differently depending on the national context. In Germany, for example, also falls into the fragmented governance type. German TVET fragmentation comes from the independent governance of each Bundesland (state) over its own TVET sector (Rauner et al., 2010). In a centralist country like Uzbekistan, fragmentation typically comes from multiple ministries or offices governing TVET all at the same national level. A similar pattern appears in Nepal, where 14 ministries and a national governing body all governed at least some part of TVET (Renold & Caves, 2017).

The ideal type of TVET governance depends on context and the preferences of people in a given context. It is at least somewhat a normative decision and not one where there is a universal best practice. Decisions depend on the overall legal framework of the country. However, TVET actors in Uzbekistan are generally dissatisfied with the governance of the sector so this type may not be what works best in this scenario. Evidence is relatively weak, but some of the best systems are more coordinated and output-oriented in type (e.g. Renold, Caves, & Oswald-Egg, 2019). When asked about what kind of governance they would prefer, TVET leaders in Nepal—where the current system measured very similar to Uzbekistan's current system—expressed a preference to move toward a coordinated and input-oriented system (Renold & Caves, 2017). This may be a direction Uzbekistan wants to explore, and it would at least be useful to reflect on whether the current type reflects the goals of the actors in the system.

Main findings – TVET governance type

3. Uzbekistan's TVET actors report a fragmented, input-oriented governance type
4. There is no universal best practice, but the low overall satisfaction with TVET governance may indicate that this governance type is not ideal for Uzbekistan

How well do TVET governance actors cooperate in Uzbekistan?

TVET governance is carried out not by one institution but by a network of actors. Because TVET crosses the public and private sectors, network governance is typical. However, public-private networks can suffer from power imbalances and inefficient organization (Capano et al., 2015; Tao, 2022; Bach & Ruffing, 2012). Therefore, we explore who works together, how intense those relations are, and how satisfactory actors find them.

Previous research on network governance in TVET shows that **intermediaries are important for TVET governance**—specifically regional governments and employers associations or chambers of commerce—and that they play different roles for the public and private sectors (Caves & Oswald-Egg, 2021). For example, in the Swiss governance network, regional governments play a “directing” role: they work closely with providers and employers, with strong outward relations and relatively weaker relations from the micro-level actors back to the regional government.

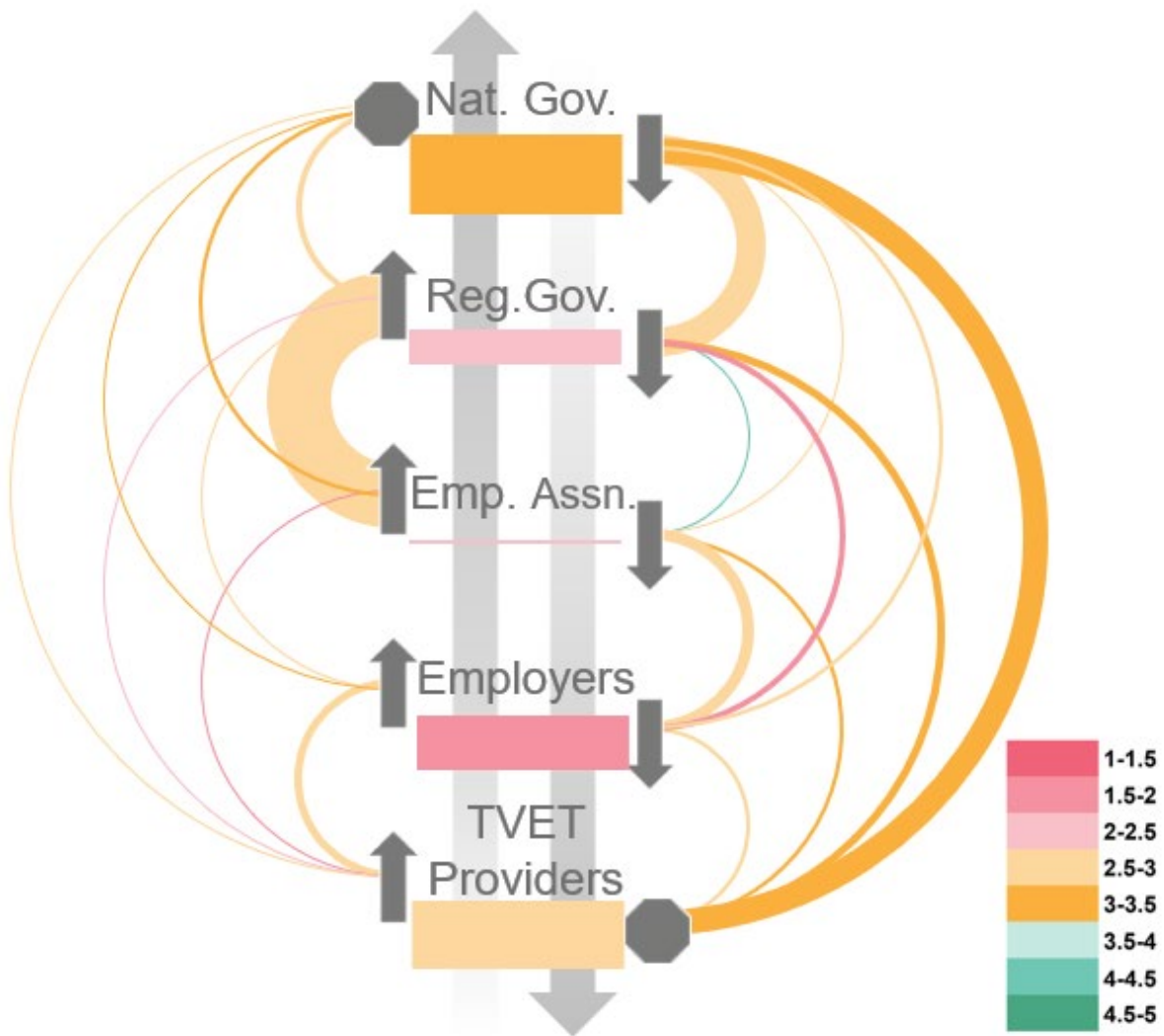
In contrast, employers’ associations operate as “representing” intermediaries. They have balanced relations to and from providers and employers, and the employers are able to work less with each other because the employers’ associations fill that role. Private-sector actors are sensitive to the costs of participating in TVET (Muehlemann & Wolter, 2019), so representing intermediaries are important for lowering participation costs and enabling employers to engage.

Figure 4 shows the governance network in Uzbekistan. Full numerical results are shown in Table 7 in the Appendix. Lines show relations between actor groups that flow in the direction of the arrows: relations on the left side of the chart flow upwards and relations on the right side of the chart flow downwards. Horizontal bars beneath each actor group’s name show within-group relations. Line thickness shows relation loads (how often and intensively actors work together) and line color shows satisfaction.

Overall, the governance network is generally low- to medium-satisfaction (average satisfaction of 2.28 out of 5 points). The least satisfied relation is between providers and employer associations, although it also has a very low relation load. The rest of the lowest-satisfaction relations are more important: regional governments are not satisfied with their relation to employers and employers are unsatisfied with their within-group relation. The highest satisfaction scores go to low-load relations: regional governments to employer associations and employer associations to the national government. However, the highest-load relation (within the national government) is also among the most satisfied. The national government is also mostly satisfied with its relation to providers.

The pattern of relation loads is unusual. The relations with the highest load are frequently within-group relations: the national government’s is the highest followed by providers and employers. The relation from employers’ associations to regional governments is the only one in the highest-load group that is not a within-group relation. Generally, **relations going downward have higher relation load than those going upward.** The national government is very active in provider administration, with a heavy relation load directly to providers. Most importantly, **there is no relation at all from employers to employer associations. We do not see a pattern of relations that would indicate that regional governments and employer associations are acting as intermediaries**—either directing or representing—between the national government and the providers and employers.

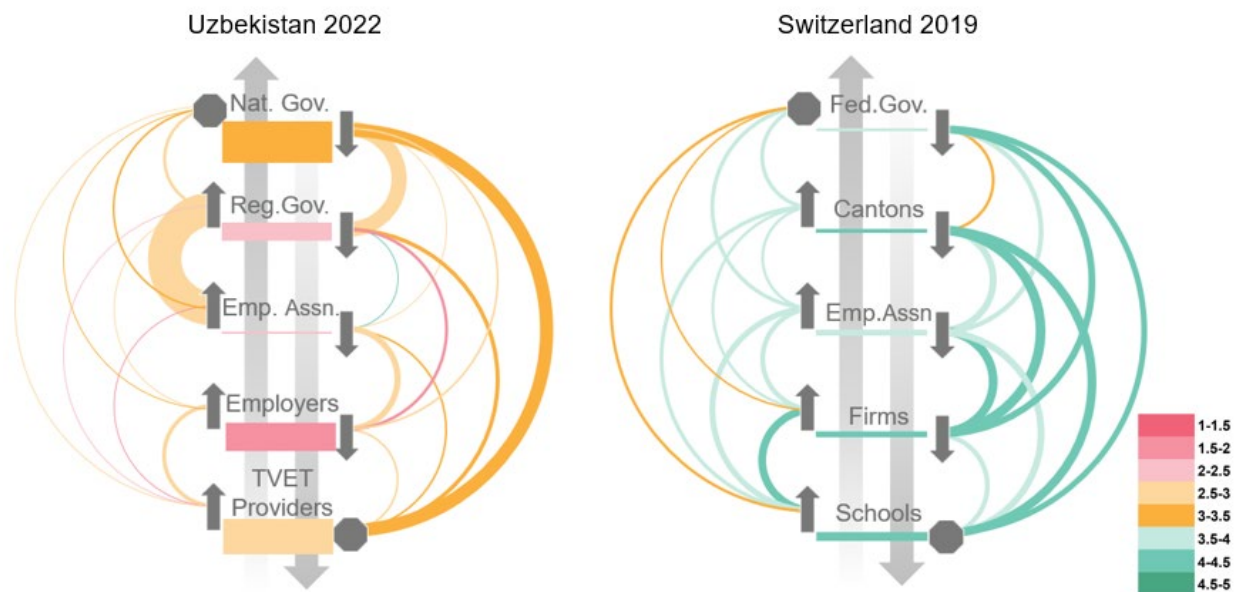
Figure 4: Governance network in Uzbekistan



Notes: Line thickness represents relation load (product of relations' adjacency and reported intensity), and color is satisfaction according to the scale shown in the bottom-right corner. Relations flow up the chart on the left and down the chart on the right. Vertical order is not a precise representation of hierarchy. Within-group relations are shown as horizontal bars below the name of each actor group. N=630 individual respondents, 739 relations (individuals report multiple relations).

The results for Uzbekistan are highly unusual. We carried out a similar study of the governance network in Switzerland in 2019 (Renold et al., 2019). Figure 5 presents a comparison for reference only—we do not argue that the Uzbek network needs to be like the Swiss one to be successful. The objective is to show how different the networks are and put the Uzbek TVET governance network in context. The **Swiss network is much more satisfied** overall, with line colors generally above the midpoint of the five-point scale. **It is also much more consistent, with much less variation in relation load** (line thickness) across actor relations.

Figure 5: Comparison of TVET governance networks in Uzbekistan and Switzerland



Notes: Line thickness represents relation load (product of relations' adjacency and reported intensity), and color is satisfaction according to the scale shown in the bottom-right corner. Relations flow up the chart on the left and down the chart on the right. Vertical order is not a precise representation of hierarchy. Within-group relations are shown as horizontal bars below the name of each actor group. Swiss cantons are regional governments. Image is for reference and context only.

Table 4 is a cooperation matrix. It shows the percentage of unique originating actors who report relations with the receiving actor. While Figure 4 shows the relationship load—which includes cooperation—and satisfaction, the **cooperation matrix focuses on how often each actor has a relation with each actor group.**

Again we see that the diagonal—within-group relations—is very important in this network. **Actors tend to work with other actors from their same group.** The exception is employer associations and chambers of commerce, who only work within-group in 15.4% of cases. The main relation from that group is instead to regional governments. For all groups except employer associations, the majority report within-group relations.

The **national government reports the most relations to other actors.** Employers are the least active, in line with their sensitivity to the cost of investing in relations and the need for a representing intermediary. In fact, without their very robust within-group relation and their relations to TVET providers, **employers are hardly active in the TVET governance network. Their complete lack of a relation to employer associations is extremely different from other TVET governance networks. It is the opposite of what we would expect if employer associations were acting as an intermediary on employers' behalf.**

Cooperation as the receiver has a relatively wide range across actors. **Employers have the highest cooperation scores as receiving actors,** mainly coming from within-group relations and moderate relations from all other actors. TVET providers and regional governments are similar, both driven by their within-group relations and relations from the federal government. Regional governments also receive relations from employer associations and chambers of commerce, although that relation is not reciprocated. Employer associations are by far the least common receivers of relations. **The mismatch between in-cooperation and out-cooperation for employers and employer associations indicates that the associations are working on TVET but are not being received by other actors as a legitimate player in the sector.**

Table 4: Cooperation matrix for the TVET governance network in Uzbekistan

To → From ↓	National Government	Regional Governments	Employers Associations & Chambers of Commerce	TVET providers & Training Facilities	Employers	Totals as originating actors
National Government	53.7%	36.6%	7.3%	29.3%	17.1%	143.9
Regional Governments	15.4%	55.4%	1.5%	16.9%	24.6%	113.8
Employers Associations & Chambers of Commerce	13.5%	59.6%	15.4%	13.5%	26.9%	128.8
TVET providers & Training Facilities	1.2%	7.8%	1.6%	81.6%	27.7%	119.9
Employers	0.5%	3.2%	0.0%	19.4%	84.3%	107.4
Totals as receiving actors	84.1	162.6	25.8	160.7	180.6	

Notes: In simple terms, scores represent the percentage of y-axis actor respondents who reported a relationship with the given actor on the x axis. Shading shows cell contents to assist reading. Cooperation is on a 0-100% scale, where 0 indicates no relationship from y-axis actor to x-axis actor and 100 indicates that every unique y-axis actor respondent reported a relationship with the given x-axis actor.

Looking at this TVET governance network, **four main patterns emerge**. First, the level of **satisfaction in this network is relatively low**, even among the within-group relations that make up many of the connections.

Second, **there is no strong intermediary action on the part of regional governments or—especially—employer’s associations and chambers of commerce**. These actors do not have especially high cooperation, they are not performing directing or representing functions as observed in other networks, and they do not seem to be substituting for within-group relations especially among employers. This may be a weakness of the TVET governance network.

Third, **the most common collaboration in Uzbekistan’s TVET governance network is within-group**. In the federal government, regional governments, providers, and employers, within-group collaboration is the most important relation we observe. This could indicate a number of things including inefficiencies, fragmentation, lack of communication, or lack of institutionalized structures for cross-actor collaboration. It is not necessarily bad for within-group collaboration to be high, but the absence of across-group collaboration is somewhat striking. **Employer associations, on the other hand, do not seem to work within their group. This is striking given the overall environment.**

Indeed, the fourth pattern is that **employer associations and chambers of commerce occupy an unbalanced position in this network**. Although they report out-relations at the same rate as other actor groups, they receive very few in-relations. The complete lack of a relation between employers and employer associations is an indication that the associations cannot effectively represent employers, either because they are not doing what employers want or because they are blocked out by other actor groups. Similarly, **the mismatch between in- and out-cooperation for both employers and associations is telling**. Every other actor claims to work with employers but barely any work with employer associations, while employer associations report many out-relations and employers report hardly any. Based on this, it appears that **employers cannot invest in the network but employer associations are not seen as their true representatives**.

Main findings – TVET governance network

6. Satisfaction with cooperation is relatively low, even in within-group relations
7. There are no intermediaries in the Uzbek TVET governance network providing either representing or directing functions.
8. Within-group relations account for most of the cooperation in the network. This may indicate fragmentation or lack of institutionalized cooperation. Furthermore, cross-group collaboration is largely missing
9. Other actors work with employers, but employers do not reciprocate. Employers may be overburdened by direct cooperation.
10. Employer associations and chambers of commerce are not fully part of the network. They report working with other actors, but other groups report only working directly with employers. Employers report no relation to associations.

How should Uzbekistan prioritize improving TVET governance?

If we want to set priorities for improvement, we need to know how important each dimension of TVET governance is. The dimensions of governance we use here are not weighted, that is we do not already have any ranking or measurement for which are the most important regardless of context. However, we can use the survey responses to calculate how important each dimension is according to the actors in Uzbekistan. This section looks at how important each dimension of governance is and compares Uzbekistan’s dimension scores to their importance. The information here should help set priorities for change, if desired. The analyses are somewhat technical, so we summarize the results here and explain more in the Technical Appendix.

How important is each dimension?

We examined how important each dimension is for overall satisfaction with TVET governance. Using two different approaches with our reported and calculated scores, we can specifically identify how important actors’ **perception** of a dimension is and, separately, how important **performance** is for satisfaction. Table 5 shows the dimensions correlated with improved overall satisfaction, not related to overall satisfaction, and correlated to worse overall satisfaction.

Actors’ perception of four dimensions are related to their satisfaction with TVET governance. These dimensions are a nationally uniform approach to TVET, communication with other systems, quality assurance for TVET programs, and career guidance for students. When people think these four aspects of TVET governance are going well, they tend to also think governance overall is better. On the other side, none of the other dimensions is related to overall satisfaction so people’s perception of these is not as important for their overall satisfaction.

Table 5: Importance of dimension perception and performance for overall satisfaction

	Perception of dimensions	Dimension performance
Related to better overall satisfaction	Nationally uniform approach Communication with other systems Quality assurance for TVET programs Career guidance for students	Financing and incentives Career guidance for students System permeability
No effect	System updating and management Financing and incentives Labor market matching System permeability	Nationally uniform approach Communication with other systems Labor market matching Quality assurance
Related to worse overall satisfaction		System updating and management

Notes: Based on regression of reported (perception) and calculated (performance) dimension scores on overall satisfaction. See technical appendix for full details. Dimensions in the top row have positive and significant correlations with overall satisfaction, those in the middle row are not significant, and those in the bottom row have negative and significant correlations with overall satisfaction. Results are not causal.

Better performance in three dimensions is related to higher satisfaction with TVET governance. These are financing and incentives for stakeholders, career guidance for students, and system permeability. Most other dimensions are not related to actors’ satisfaction with governance. One dimension—system updating and management—has a negative effect on actors’ satisfaction with governance, meaning overall satisfaction is related to worse overall performance in this area. The TVET sector in Uzbekistan has recently

undergone a great deal of reform and continues to change, so it may be important to be very intentional about new changes and communicate clearly when changes are made.

Career guidance is the only dimension that is important for overall satisfaction from both perspectives. **It is important that actors have a positive perception of career guidance and that it performs well.**

Three dimensions—a nationally uniform approach, communication with other systems, and quality assurance for TVET programs—are more important in perception than performance. These are areas where it may be more helpful to increase communication and transparency without focusing as much on changing performance first.

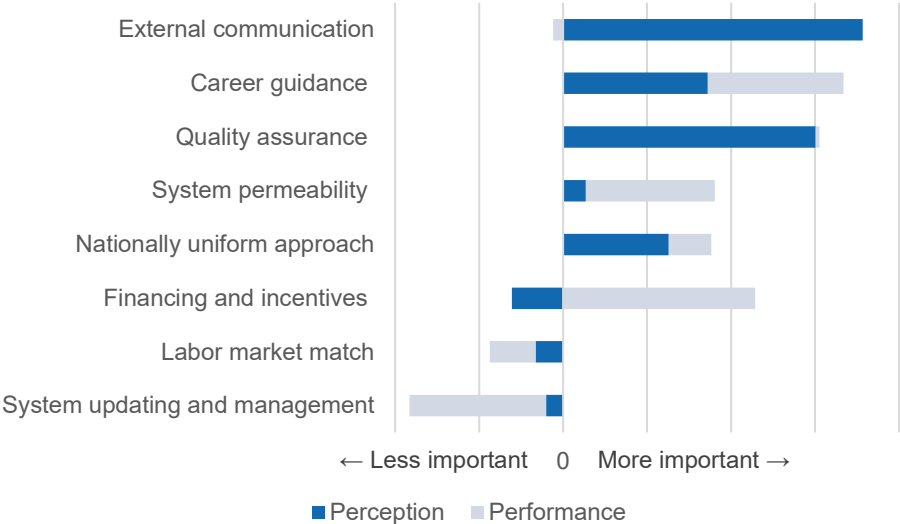
Two dimensions—financing and incentives, and system permeability—have performance related to satisfaction but not perception. Actors may not think of these as priorities, but they are important for overall TVET governance.

How effective is TVET governance in the most important dimensions?

With important areas identified, the next step would normally be to compare performance and importance. This would let us see if Uzbekistan is focusing its effort on the most important parts of TVET governance. If, for example, the best-performing dimensions were the least important, that would be an indication to change priorities. However, the scores for each dimension are so similar—all very close to 2.0—that this analysis does not make a lot of sense in Uzbekistan’s case (see technical appendix for results). All scores are relatively low, so there is no particular high or low point.

However, that does not mean that the results of this analysis are not helpful. **Given that all scores are low, it is even more important to focus first on the most important dimensions.** Figure 6 is a highly simplified summary of each dimension’s importance in total and in terms of perception (bright blue) and performance (light blue).

Figure 6: Importance of each dimension



Notes: Figure shows the total regression coefficient for each dimension. Bars to the right of 0 indicate a positive correlation with overall governance satisfaction, and bars to the left of 0 indicate a negative correlation with overall satisfaction. Significance is not shown on the chart, refer to the table above. See technical appendix for details.

The most important dimensions are the best starting point for improving TVET governance. Although their performances are not important, the **perception of external communication and quality assurance are extremely important for overall satisfaction.** **Career guidance is important** from both perspectives. **System permeability and financing and incentives are important from a performance perspective.** The other dimensions are less important and may not be the most impactful starting points.

Main findings – Priorities

3. To improve perception of TVET governance, the most important dimensions are external communication, quality assurance, and career guidance.
4. To improve TVET governance performance, the most important dimensions are system permeability, career guidance, and financing and incentives.

Conclusions and Recommendations

Having examined TVET governance in numerous contexts, some of the challenges we observe here are typical of contexts like Uzbekistan's and some are surprising. In this section we explore the patterns and implications of our findings and consider possible solutions.

Actors in Uzbekistan's TVET sector are aware that the governance of the system is not where it needs to be. They are generally unsatisfied, and their opinion aligns with the calculated performance of system governance. This clear-sightedness indicates awareness of problems and motivation to improve. If the actors in the sector were entrenched, reluctant to change, or hesitant to admit to problems, we would see a difference between their perception of TVET governance and our measurement of its performance. That pattern is more common, and **Uzbekistan's awareness is an encouraging exception.** This is a good sign for the potential of Uzbekistan's TVET sector to continue its metamorphosis and find a positive conclusion.

One pattern that is quite common across countries is the higher satisfaction of macro-level actors. We observe that actors working at the national level are more satisfied with TVET governance than regional or local actors. This pattern is common (including Switzerland, see Renold et al., 2019), but it can indicate a disconnect between system leadership and implementation in practice. However, **in combination with the high fragmentation and input-orientation we observe in Uzbek TVET governance, this satisfaction discrepancy becomes a sign of a larger problem.**

The discrepancy and governance type paint a picture of a sector where changes or directions from the national government may be uncoordinated, disconnected from skills demand or the reality of delivering TVET, or difficult to follow. When we add in the findings from the ADB (2020) on problems of skills mismatch, low curriculum relevance, and rigidly regulated TVET delivery, the picture is even clearer. Although some input orientation can work in TVET governance, it is not serving Uzbekistan in this context. **Shifting from knowledge to competencies and from input-oriented toward output-oriented governance—from a model that mandates processes to one that sets and evaluates standards—can help TVET institutions innovate, efficiently use resources, and meet skills demand better while still upholding a minimum competency level.**

Recommendation 1

Shift from input-oriented governance toward output-oriented governance. Specifically, this means regulating standards and ensuring quality by assessing whether standards are met, rather than regulating learning processes and ensuring quality by managing those processes. This will require a transition from knowledge- or subject-based curricula to competency-based curricula.

The relations among actors in Uzbekistan's TVET governance network are extremely unusual. Again, actors understand that there is a problem and express this in their low satisfaction with the governance network. **In a typical governance network for TVET, we would expect to see cooperation across actor groups facilitated by intermediary organizations.** Employer associations (or sector associations, chambers of commerce, etc.) are especially important intermediaries in a typical TVET network because they enable employers to participate.

In Uzbekistan, we observe nearly the opposite of these common patterns. Actor groups do not work with each other, instead working almost entirely within-group. There are no intermediaries in the network, with employer associations the least—rather than most—central actors. Employers report no relationship at all to employer associations, meaning that even the limited existing cooperation with associations cannot improve education-employment linkage—the defining factor for TVET quality. **Education-employment cooperation is not institutionalized and employers are not included in TVET governance. Even when employer associations are included, they do not appear to truly represent employers.**

We evaluated education-employment linkage in Uzbekistan earlier in this project (Renold et al., 2021) and found very low scores. The absence of facilitating intermediaries certainly contributes to this problem. Employers do not have unlimited resources, and cannot invest time, personnel, and expertise in supporting TVET without associations to aggregate their efforts and lighten the load. At the same time, TVET needs employer leadership and partnership in curriculum design, program delivery, and curriculum updating. Without education-employment linkage, key outcomes like skills matching, post-graduation employment, and program sustainability are all negatively impacted. We have observed the high importance that TVET actors in Uzbekistan place on quality, and **education-employment linkage is necessary for quality. A cooperative governance network that uses robust employer associations to facilitate employer leadership is necessary for education-employment linkage.**

Recommendation 2

Prioritize a cooperative governance network in which employer associations (or sector associations, chambers of commerce, etc.) are true employer representatives and facilitate employer leadership of TVET. This will require defining a role and power for employers and their associations in TVET design, delivery, and updating.

Finally, **Uzbekistan’s pattern of all governance dimensions earning the same low scores is unique.** We would expect to find a pattern of strengths and weaknesses, with some dimensions doing better and others doing worse. In Uzbekistan, we find the same score for all dimensions. While this prevents one common problem—investing the most in unimportant areas and ignoring the most important parts of governance—it still **means that the most important parts of TVET governance are not prioritized.**

We find differences in the things that matter for how people feel about TVET governance and the things that make TVET governance better in terms of performance. **Career guidance and counseling is the only dimension that matters from both perspectives, so this is a clear priority.** Added to that dimension, external communication and quality assurance are the dimensions people in Uzbekistan prioritize to feel like TVET governance is better. In contrast, the additional dimensions that actually improve TVET performance—according to the same actors—are system permeability and financing and incentives.

Communication and quality are both important aspects of TVET governance, and perception of governance is an important outcome. However, it is important to avoid focusing on these dimensions to the exclusion of those that matter for performance. **System permeability and financing and incentives may not be the most attractive areas for improvement, but these are very important for improving performance.**

Recommendation 3

Focus on improving career guidance and counseling. Although communication and quality are attractive areas, they are only important for the perception of TVET governance, not its performance. Focus on system permeability and financing and incentives to improve TVET governance performance.

One pattern that emerges across all areas of investigation is a focus on quality. TVET in Uzbekistan struggles with skills mismatch, post-graduation employment, and relevancy. A focus on quality makes a certain amount of sense in that context. However, **quality is an outcome of a healthy system.** The results here show that the governance of TVET in Uzbekistan struggles with fundamental problems like cooperation, governance mode, involving the appropriate actors, and setting priorities. **Quality—or the outcomes actors want to achieve by working on quality—may be more effective when treated as goals rather than improvement strategies.** Solving fundamental problems is more likely the first step towards quality, rather than quality being the first step towards desired outcomes.

Recommendation 4

Focus on solving fundamental problems and treat quality as a goal or an outcome.

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Appendix

Table 6: Detailed sample comparing tokenized actor groups to responded actor groups

Survey-reported classification							
Token list classification	National government (e.g. ministries, line ministries, national institutes)	Regional government (e.g. regional line ministries, regional heads of TVET)	Employer/sector association (e.g. sector skills councils, chambers of commerce, professional associations)	TVET provider/TVET College/Technicum	Individual employers	Total tokenized respondents by subgroup	Total tokenized respondents by group
	Ministry of Higher Education & Secondary Specialized Education	1	0	0	10	0	11
Other key ministries: Poverty, Finance, Labor, Economy, Public Education	6	2	8	7	0	23	
Line ministries implementing TVET programs (<29, incl. agriculture, construction, IT, etc.)	2	2	2	3	1	10	
State inspection agency (quality control)	2	0	0	0	0	2	
Pedagogical Institution for TVET	1	0	1	5	1	8	
14 Regional Heads of TVET (MoHESSE)	2	9	3	21	3	38	132
Regional branches of line ministries	7	17	11	44	4	83	
Regional governors/authorities Meteorology	0	5	0	6	0	11	
Chambers of commerce	3	12	4	0	0	19	46
Professional associations	1	0	8	7	2	18	
29 National sector skills councils (related to line ministries)	0	0	5	1	0	6	
Industrial clusters	0	0	0	0	3	3	
Providers	17	15	7	57	13	109	109
Training companies	0	5	6	70	30	111	305
Non-training companies	1	0	1	31	161	194	
Total survey respondents	43	67	56	262	218	646	

Table 7: Detailed network results

From	To	Intensity	Satisfaction	Cooperation	Relation Load
National Government	National Government	3.95	3.41	54%	2.12
National Government	Regional Governments	3.47	2.87	37%	1.27
National Government	Employer Associations & Chambers of Commerce	3.00	2.67	7%	0.22
National Government	Providers	4.00	3.18	29%	1.17
National Government	Employers	3.00	2.86	17%	0.51
Regional Governments	National Government	3.40	2.70	15%	0.52
Regional Governments	Regional Governments	2.50	2.47	55%	1.38
Regional Governments	Employer Associations & Chambers of Commerce	4.00	4.00	2%	0.06
Regional Governments	Providers	3.82	3.00	17%	0.65
Regional Governments	Employers	2.47	1.87	25%	0.61
Employer Associations & Chambers of Commerce	National Government	3.71	3.43	13%	0.50
Employer Associations & Chambers of Commerce	Regional Governments	3.20	2.57	60%	1.91
Employer Associations & Chambers of Commerce	Employer Associations & Chambers of Commerce	2.86	2.43	15%	0.44
Employer Associations & Chambers of Commerce	Providers	3.50	3.00	13%	0.47
Employer Associations & Chambers of Commerce	Employers	3.09	2.27	27%	0.83
Providers	National Government	3.67	2.67	1%	0.04
Providers	Regional Governments	3.25	2.40	8%	0.25
Providers	Employer Associations & Chambers of Commerce	2.00	1.75	2%	0.03
Providers	Providers	2.40	2.15	82%	1.96
Providers	Employers	2.42	2.19	28%	0.67
Employers	National Government	4.00	3.00	0%	0.02
Employers	Regional Governments	3.67	2.67	3%	0.12
Employers	Employer Associations & Chambers of Commerce	-	-	0%	0.00
Employers	Providers	2.21	2.17	19%	0.43
Employers	Employers	2.09	1.92	84%	1.76

Notes:

- Intensity is the response to "how often do you work with this partner?" on a 1-to-5-point Likert scale
- Satisfaction is the response to "how satisfied are you with the cooperation with this partner?" on a 1-to-5-point Likert scale
- Cooperation is the percentage of unique originating actors who reported a relation to the receiving actor
- Relation load is the product of intensity and cooperation, and ranges from 0 to 5.

Table 8: Survey questions and scores for governance type

Dimensions and items	Score	Overall	Score
Legal framework for VET	2.34	Type	2.32
TVET is governed by a single set of rules.	2.34		
Occupational standards are bundled--all set at the same legal level.	2.34		
Actor and stakeholder interactions	2.36		
All VET actors have clear roles and responsibilities	2.33		
A single institution coordinates the whole system.	2.39		
Improvement and updating	2.32		
There is an ongoing requirement for TVET updating and further development.	2.29		
Curricula and standards are regularly evaluated.	2.35		
Policy balance	2.30		
TVET goals apply to all relevant policy areas: education, the economy/business, the labor market, and social policy.	2.30		
The actors involved in VET/PET represent all relevant policy areas.	2.30		
Distribution of strategic and operational functions	2.30		
Quality standards are set and enforced by the national TVET authority	2.31		
Quality standards are set by the national TVET authority and enforced locally	2.30		
Results orientation	2.34	Mode	2.33
The legal framework contains binding objectives and standards for TVET.	2.31		
There are systematic evaluations of progress towards TVET political goals	2.33		
The results of evaluations are taken into account in future policy decisions	2.37		
Examinations are based on clear learning outcomes and standards	2.37		
TVET providers receive funding per student	2.32		
TVET providers receive funding regardless of performance	2.37		
Standards-setting orientation	2.32		
Following a specific curriculum is required for admission to final examinations	2.32		

Technical Appendix

This section presents the analyses related to prioritizing interventions and improvements in Uzbekistan's TVET governance.

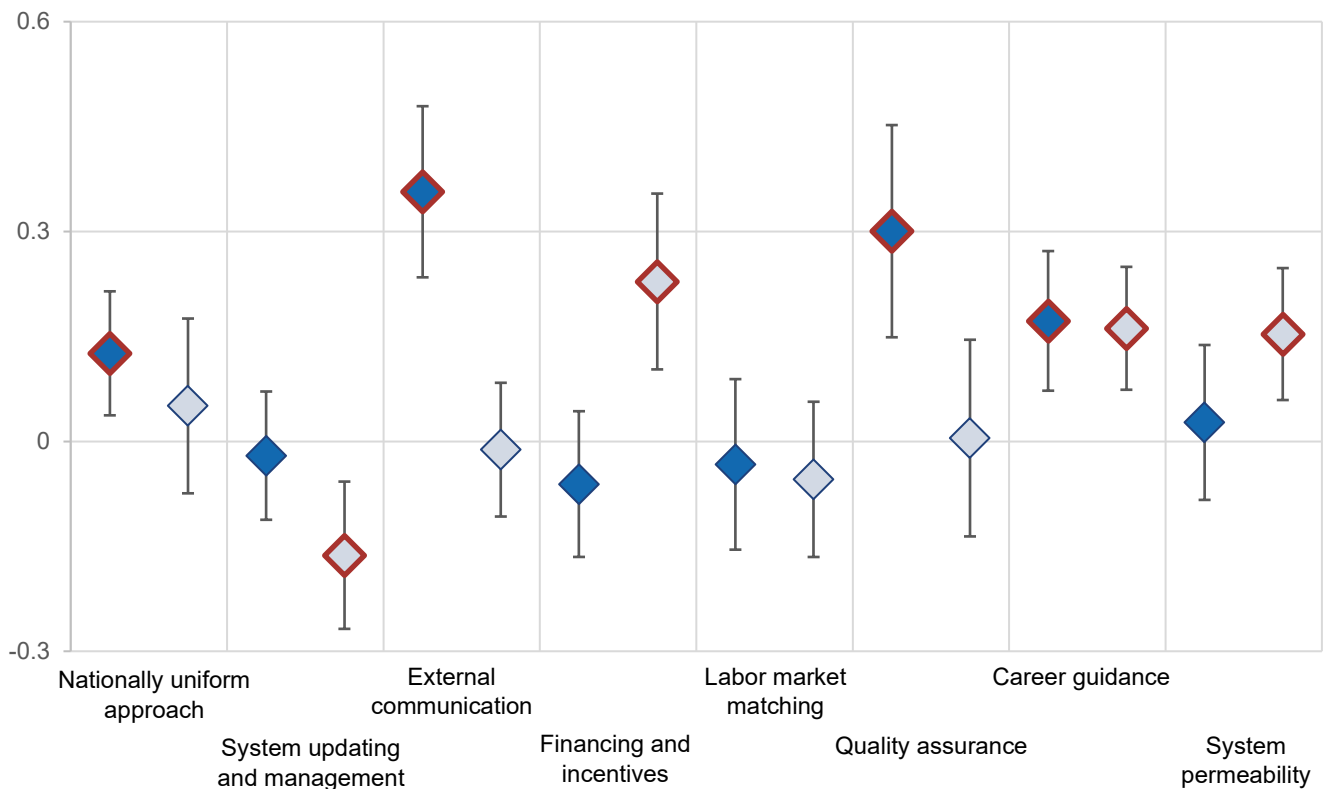
How much does each dimension affect overall governance satisfaction?

One way that we can look at what TVET governance actors in Uzbekistan consider important is to look at which dimensions of governance drive their overall opinions of governance. We do this by regression the dimensions on their overall satisfaction with governance, and we can do it for both the reported and calculated dimension-level scores. The reported scores tell us how important actors' **impression of governance** in an area is for their overall satisfaction. The calculated scores tell us how important **governance performance** in that area is for overall satisfaction.

Figure 7 shows the results of both regressions, with reported dimensions in bright blue and calculated dimensions in light blue. Error bars show the 95% confidence interval around each estimate, and statistically significant estimates are highlighted with red outlines. When the error bars do not cross the zero axis, the estimate is significant.

Four dimensions are significant in each regression. In the **first regression that relates actors' impression of each dimension to satisfaction** (bright blue), we see that actors' impression of the following dimensions are especially important for their overall impression of TVET governance: Nationally uniform approach to TVET, communication with other systems, quality assurance for TVET programs, and career guidance for students. In the **second regression that relates the performance of each dimension to actors' satisfaction** (light blue), we see that governance performance in three dimensions is especially important for driving actors' perception of overall TVET governance: Financing and incentives for stakeholders, career guidance for students, and system permeability. One dimension—system updating and management—has a negative and significant effect on actors' impressions of overall governance. In statistical terms, this indicates that overall satisfaction improves as performance in this area is worse.

Figure 7: Regression of reported and calculated dimension scores on reported overall governance satisfaction



- ◆ Regression 1: Reported dimensions on overall satisfaction
- ◇ Regression 2: Calculated dimensions on overall satisfaction
- ◇ Coefficient is statistically significant

Notes: Chart plots regression coefficients and 95% confidence interval for each coefficient. Regression 1, shown in bright blue, uses reported dimension scores. Regression 2, shown in light blue, uses calculated dimension scores. Both use overall reported satisfaction with governance as the outcome variable. Statistically significant dimensions are highlighted with red outlines.

Most dimensions are not significantly different across regressions. The exceptions are external communication, financing and incentives, and (marginally) quality assurance. For external communication and quality assurance, actors' impressions of the dimension are more important than its performance for driving overall satisfaction. For financing and incentives, performance is more important than perception. This indicates that actors may want to focus on external communication and quality assurance more than is necessarily needed, and it may benefit the system to focus on financing and incentives even though it is not necessarily a priority for most actors.

Career guidance is the only dimension that is important for overall satisfaction in both regressions, meaning it is a priority in actors' impressions of the system and in terms of measured governance performance.

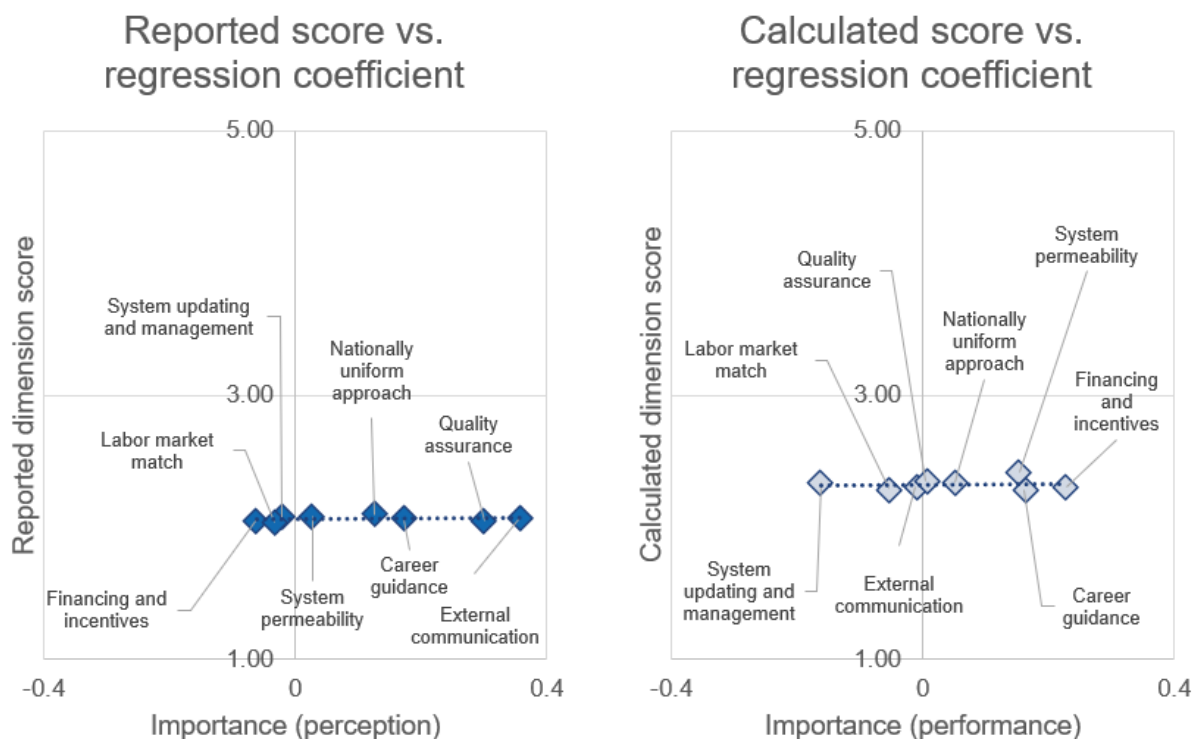
How effective is TVET governance in the most important dimensions?

We can use this data to look at how effective Uzbekistan’s TVET governance is in the most important areas. Specifically, we can look at the correlation between the coefficients of each dimension and their scores. Figure 8 shows the plot of scores and coefficients for the reported and calculated scores.

The x axes in each chart show the regression coefficients, which represent the importance of each dimension. The y axes show scores for each dimension, which represent how well Uzbekistan is doing on each element of TVET governance. These charts form four quadrants; the upper-right quadrant would be highly important dimensions with good scores, the top-left quadrant would be less important dimensions with low scores, the bottom-right quadrant is highly important dimensions with low scores, and the bottom-right quadrant is less important dimensions with low scores. The most important dimensions are on the right, where we find either the most important strengths or weaknesses of a given TVET system.

The charts in Figure 8 show the relationship between how important something is and how positively it is perceived (first regression; bright blue) or how well it is performing (second regression; light blue). In a situation with high- and low-performing dimensions, we would hope to see diagonal upward trends where the most important dimensions of TVET governance are perceived or performing the best, while less important dimensions are the ones performing poorly. We do not want to see a down-and-to-the-right pattern, which would indicate that the best-performing dimensions are the least important, and the important dimensions are major weaknesses.

Figure 8: Correlation of scores and coefficients



Notes: Left chart plots dimension-level reported scores against the regression coefficients for dimension-level reported scores. Right chart plots dimension-level calculated scores against the regression coefficients for the dimension-level calculated scores. In both charts, the horizontal axis represents importance (coefficient) and the vertical axis represents Uzbekistan’s scores.

As shown in Figure 8, because there is so little variation in scores for TVET governance—both reported and calculated—we have a flat line in both plots. All scores are very close together

just above 2 points out of 5, and no dimension is a high- or low performer. That means that Uzbekistan is not currently investing too much in less-important dimensions of governance, but it also means that all of the important dimensions are low-scoring.

Because all dimensions score approximately the same, the result of looking at dimensions scores and regression results this way is the same as the section above. The most important dimensions should receive the most investment and the first priority for intervention. To improve perception of TVET governance, the most important are external communication, quality assurance, and career guidance. To improve TVET governance performance, the most important are system permeability, career guidance, and financing and incentives.