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Baseline Report
State of the schools at the beginning of the QualiTY project

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ceSoed consortium: Backstopping and Learning for the QualiTY project in Nepal

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Acknowledgements

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List of Abbreviations

CEHRD	Center for Education and Human resource Development, Nepal
CEMETS	Center on the Economics and Management of Education and Training Systems, ETH Zurich
CES	Chair of Education Systems, ETH Zurich
ceSoed	Consortium between the Chair of Education Systems at ETH Zurich and the School of Education at the Kathmandu University
CNI	Confederation of Nepalese Industries
CTEVT	Council for Technical Education and Vocational Training, Nepal
EFQM	European Foundation for Quality Management
FNCCI	Federation of Nepalese Chambers of Commerce & Industry
iLab	CEMETS Implementation Lab
KUSOED	School of Education, Kathmandu University
MoEST	Ministry of Education, Science and Technology, Nepal
QualiTY	Quality Technical and Vocational Education for Youth Project

SDC	Swiss Agency for Development and Cooperation
TECS	Technical Education in Community Schools
TITI	Training Institute for Technical Instruction, Nepal
TVET	Technical and Vocational Education and Training

Executive Summary

Nepal's TVET system is undergoing a transformation as a part of the federalisation of the country's governance. In this context, a number of reforms targeted at improving youth outcomes and increasing the attractiveness of TVET pathways are underway. The **QualiTY project** is one of these initiatives; it seeks to achieve the goals of the reform through targeted interventions in TVET schools and colleges, with TVET principals and instructors, and through capacity-building of TVET leaders. Swisscontact, the implementation partner, supports the MOEST and the CTEVT in developing nationally consistent accreditation standards and implementing the accreditation process. In addition, they provide technical support for a randomly selected group of schools on their preparation for the accreditation application. The ceSoed consortium—comprised of CES and KUSOED—have been mandated by the SDC to provide backstopping and learning for the QualiTY project.

As part of this function, ceSoed collects data from schools and other stakeholders to ascertain the impact of project activities. **In this report, we present key findings of the baseline survey** carried out in the second half of 2023. This survey was developed to understand the state of the TVET system in Nepal at the beginning of the project intervention. Of particular importance is the state of TVET schools and institutions, represented by indicators of their institutional health such as enrolment, graduation and staffing.

Throughout the report we **distinguish between TVET and CEHRD schools.** While the former focus only on technical and vocational education, CEHRD schools offer technical stream programmes alongside their general education ones, yet the technical programmes combine technical and general education courses in equal proportion. These schools are affiliated to the CEHRD, the body that supervises them, while TVET schools are CTVET-affiliated.

TECS and Private schools constitute the bulk of the TVET schools, with a combined 90% of the sample. Schools are distributed evenly across the country, with the exception of Bagmati, which contains 20% of the schools, 5 percentage points more than any other province. Almost half the schools are located in Regular Municipalities, typically in the Tarai lowlands, while a quarter of them are in Rural Municipalities and the rest in Metropolitan Cities. The characteristics highlighted indicate that the typical TVET school is run by the community or privately, located away from the bigger urban centres and in the lowlands.

The **vast majority of programmes offered are in Engineering, Health and Nursing and Agriculture**: the first two categories make up three quarters of the programmes available and have roughly equal weight, whereas agricultural programmes represent about a fifth of the offer. This picture changes substantially when we look at the programmes offered by each type of school and in every kind of municipality. For example, Private schools chiefly run Health programmes and TECS Agriculture ones. In a similar vein, Metropolitan Cities train mostly health professionals and Rural Municipalities focus on agricultural degrees.

TVET schools possess considerable capacity to cover demand for enrolment, given that e**n-rolment rate across programmes and schools is only slightly more than half of the available capacity** on average. TECS, especially, report very low enrolment rates despite having less than half the average capacity of other school types. In addition, we found that there is a considerable difference between enrolment in cities and municipalities, in favour of the former. In general, women made up half of the cohorts enrolled and classified groups a quarter. These results point to a well of underused capacity which can explain in part the financial problems affecting the system, well-documented in this report.

The weak demand for enrolment may partly stem from the perceived inefficiencies in the system, which fails to produce graduates at a sufficient rate. On average **only 40 percent of TVET students managed to graduate** during the last completed year in Nepal. Furthermore, over a third of the schools had no graduates in the last completed year, with no students receiving a diploma in the period.

The vast majority of instructors appear sufficiently qualified to perform their role, yet they typically lack industry experience. Their numbers are much lower in TECS schools, which employ almost a third of the instructors than the others do. According to their managers, most instructors teach long hours every week, and their teaching load—which do not include preparation or administrative duties—is carried out for three quarters of them in temporary positions. These **findings denote the poor working conditions instructors bear**, which likely lead to the high rotation levels endemic to the system that diminish the quality of teaching and might also be impacting negatively graduation rates.

TVET schools rely chiefly on their own income generating activities—mostly fees—to fund their operations, but public funding still plays a vital role nonetheless for all school types save for private institutions. Constituent schools are unique in that they obtain most of their funding from public sources, especially, the CTEVT as the body that runs them. While the sources of funding are varied, a common aspect in the system is that they are insufficient to meet the financial needs. Our data highlights the **existence of widespread financial struggles across schools**, with less than half obtaining sufficient funding to cover their costs. Although the financial stability of schools differs depending on their type and location, the proportion of institutions in trouble remains substantial by any metric and their deficits are sizeable.

CEHRD schools present important differences with respect to TVET schools beyond the content of their programmes. This type of schools are much smaller in number than TVET schools, and are located to a much larger extent in Rural Municipalities, away from metropolitan areas. Their offer consists mostly of engineering courses (60%), while the remainder are on plant or animal science.

CEHRD schools are remarkably homogenous in contrast with the heterogeneity found among TVET exclusive schools. The median capacity of their programmes is almost the

same at around 50 students across all categories, as are their workforce of 8 instructors. Enrolment rates are also fairly uniform, and substantially higher than TVET schools, overall, by close to 20 percentage points. CEHRD greatly outperform TVET schools in the number of students graduating too, while the rates are more variable than for other indicators, especially across provinces, the overall difference is of more than 30 percentage points.

CEHRD schools are also on a much firmer financial footing than other TVET schools, with the majority of their funding flowing directly from the MoEST. However, we note that in this survey, **CEHRD schools indicated they received on average 8% of their funding from school fees**, even though in principle, access to these schools should be free of charge.

We also investigate the **governance networks of TVET**. Key actors are moderately satisfied with their relationships with other actors, with local level actors more satisfied with interactions with higher-level actors than vice versa. Actors are also moderately satisfied with the **elements of good governance**, although coordination between governance levels remains a weakness.

The **above findings have implications for the Nepali TVET system going forward** and the strategy to adopt, which we argue should be threefold. **First, schools ought to streamline to avoid offering courses that are poorly attended and of low quality**, a measure that could have an immediate impact on financing issues. The **second strand of the strategy would be to set carefully considered plans in place that ensure TVET institutions are on a firmer financial footing**, since even comparatively financially stable institutions tend to report financial shortfalls. A stronger focus on industry collaboration or substantial exposure to work-based learning may render TVET programmes more attractive, by introducing more practical components. In addition, **TVET instructor careers should be made more attractive** by offering better working conditions, more opportunity for permanent contracts and less time spent in the classroom.

Nevertheless, to tackle all these challenges and implement the proposed strategies**, TVET acts must be enacted at both the federal and provincial level**. Furthermore, the CTEVT must be restructured in accordance with Nepal's Constitution, which implies that CTEVT shall not be involved in the running of schools, but rather act as the body ensuring quality and relevance of TVET in the country through stringent monitoring and evaluation.

Our research also unveiled several systemic issues regarding the quality of the data on the TVET school system. First and foremost is the **lack of a reliable identification system of schools in Nepal**, which casts doubt about the capacity of any actor to accurately define a given institution in a manner that is unambiguous to any other actor in the system. Such uncertainty calls for the development of a central database of schools, with consistent names and precise geo-location.

Finally, in view of the federalisation process in Nepal, policymakers and stakeholders should take note of the **apparent provincial differences in many of the school results**. More research is required to understand the extent to which these differences are expressly due to provincial factors or if they are more related to other reasons.

1   Introduction

Nepal's Technical Vocational Education and Training (TVET) system is undergoing a transformation as a part of the federalisation of the country's governance (Caves and Renold 2017; Renold et al. 2018, 2022). In this context, a number of reforms targeted at improving youth outcomes and increasing the attractiveness of TVET pathways are underway.

Concretely, the Quality Technical and Vocational Education for Youth Project (QualiTY) project seeks to achieve this goal through targeted interventions in TVET schools and colleges, with TVET principals and instructors, and through capacity-building of TVET leaders (SDC, 2023). Firstly, Swisscontact, the implementation partner, supports the Ministry of Education, Science and Technology (MOEST) and the Council for Technical Education and Vocational Training (CTEVT) in developing nationally consistent accreditation standards, before opening the possibility of accreditation to all TVET schools in the country. Second, Swisscontact provides technical support for a randomly selected group of schools on their preparation for the accreditation application.

The project also foresees support for staff in TVET institutions. CTEVT is in the process of developing a licencing procedure for TVET instructors, whose numbers and longevity in the system currently suffer from poor career prospects and delayed TVET regulation at the national and province levels. Finally, it seeks to build capacity amongst TVET leaders, both through management training of school principals, and the CEMETS Implementation Lab (iLab) Nepal's reform cases.

The Chair of Education Systems at ETH Zurich (CES) and Kathmandu University School of Education (KUSOED), as the ceSoed consortium, have been mandated by the Swiss Agency for Development and Cooperation (SDC) to provide backstopping and learning for the QualiTY project. In this capacity, ceSoed provides expert feedback on project activities and conducts the iLab Nepal. The consortium also collects and analyses data from schools and other stakeholders, to provide accurate information to all project partners on the impact of project activities.

In this report, we present key findings of the baseline survey carried out in the second half of 2023. This survey was developed to understand the state of the TVET system in Nepal at the beginning of the project intervention. Of particular importance is the state of TVET schools and institutions, represented by indicators of their institutional health such as enrolment, graduation and staffing. We also collect information on the governance of the TVET system, and the satisfaction of the actors within the system both with various elements of the governance and their interactors with the other actors. Finally, we ask schools about their governance strategies regarding targeted results, future strategies, and execution of strategic plans.

Our results indicate that at the school level, funding does not meet the needs of schools. The system is also inefficient and suffers from both low enrolment and graduation rates. While staff are well-qualified, many are employed only temporarily. Results concerning schools' governance strategies are inconclusive. Broadly speaking, actors in the system generally show good knowledge of its governance and moderate satisfaction with their relationships with other actors, though relationships between actor groups are relatively thin.

In what follows, we describe the data collection methodology of the report in Section 2 and our results in Sections 3 to 5. We provide a profile of TVET schools in Section 3 and of Centre for Education and Human resource Development (CEHRD) schools with technical stream programmes in Section 4. The next section analyses Nepal's system of governance as a whole. Section 6 discusses a number of systemic issues related to the quality of the data in the TVET system. In the last section, we reflect on the implications of our findings and put forward recommendations based on them.

2 Data and Methodology

The data was collected administering surveys through individual structured phone interviews among all relevant stakeholders in Nepal's TVET education sector. The total size of the population targeted was of 2,412 institutions, which can be split into three main groupings. First, we had all members of the two main industry umbrella organisations in Nepal, namely, from the Federation of Nepalese Chambers of Commerce & Industry (FNCCI) and the Confederation of Nepalese Industries (CNI). All local and provincial governments were the second main group of respondents. The last group, most important and numerous, were all the schools running TVET-related programmes in the country. These schools could be of two types, general schools run by CEHRD and offering technical stream programmes alongside the general curricula, or centres providing TVET-only education. The specific sizes of each group as well as their corresponding response rate are displayed in Table 1.

We constructed our survey population using a combination of sources. We compiled a list of all TVET institutions in Nepal based on data provided by CTEVT, and of CEHRD schools employing data from the MoEST. The data preparation processes raised concerns about the reliability of this data, which we discuss in further detail in section 6 of the report. The respondents from provinces and local level governments came from government databases, while those of industry stakeholders came from the lists of association members and previous interactions with these actors.

As noted, interviews were conducted on the telephone by a team of 31 local enumerators, overseen by two supervisors; the entire team was led by one of the authors of this report affiliated to KUSOED. The survey comprised three main blocks that were implemented in order. The first block contained questions about governance; this part was administered to all respondents. The next two blocks were only asked to the representatives of the schools, the first of these collected essential information about the institution, with the aim of providing a comprehensive profile of each of them—the main object of the present report. Finally, the last block assessed the ability of the school to manage change and improve performance, which we measured making use of the European Foundation for Quality Management (EFQM) model, a globally recognised framework for this purpose (Fonseca 2022).

We collected the data employing LimeSurvey, an online survey tool. LimeSurvey was used to design the survey, display the prompts and record the data, which was later aggregated in a dedicated server to compile the database of survey responses.

Enumerators received comprehensive training on the content of the survey and the use of LimeSurvey for about a week prior to the start of the data collection. Most enumerators had a TVET background, which facilitated their understanding of the questionnaire.

Interviews were conducted individually on the phone by an enumerator residing in the province of the respondent. It took approximately 50 minutes to go through the full survey, although some of the information about the schools that required consulting records were provided after the interview took place. The first survey block on its own lasted for about 16 minutes, which was the interview time for the respondents who did not represent schools. Respondents typically held managerial roles or were delegated by management to answer the survey.

Table 1: Response rate

Institution type	FNCCI	CNI	Government	TVET Schools	CEHRD Schools
Target population	162	26	758	999	457
Response rate	94%	77%	100%	83%	79%

The data collection started on the 11th of September 2023 and spanned 6 months until the 1st of March of the next year. Enumerators employed a translated version of the original survey in English designed by the CES team in consultation with KUSOED, both languages were displayed in the prompts for the sake of clarity. The team interviewed first the representatives of the schools and afterwards the respondents from the other stakeholder groups.

The response rate was very high among the non-school stakeholders; 94% of the FNCCI associations and all the government bodies at both provincial and local level answered the survey. However, moderate attrition of 17 percent was registered among schools. The main reasons for the lower response rate were the refusal to respond to the survey and the lack of contact details for the school principals, which were each responsible for 36% of the missing information; in the remaining cases (18%) it was mostly not possible to collect the data due to the closure of the school or the programme.

3 Profile TVET Schools

The current section presents a profile of the TVET schools in Nepal based on the analysis of the data from the baseline survey, it presents descriptive statistics and visual output of indicators produced out of the data collected. The section displays the results for non-CEHRD schools only; the next section covers the CEHRD schools. The separation of the analysis for these two school types is based on the fact that they offer two very different educational "products"— some CEHRD schools offer technical stream programmes alongside their general education ones, yet the technical programmes combine technical and general education courses in equal proportion. All other schools, on the other hand, offer solely TVET-only programmes and are affiliated to the CTVET.

The main unit of observation is therefore the school, and the count (i.e. n) depicted in the title of every figure provides the sample of schools employed in producing them.

3.1 School characteristics

We begin this section by looking at the characteristics of the schools according to four categories which we employ throughout the analysis, these are: the type of school they belong to, the province and type of municipality where they are located, and the geography of their district.

Figure 1: Proportion of schools by school type; n=827
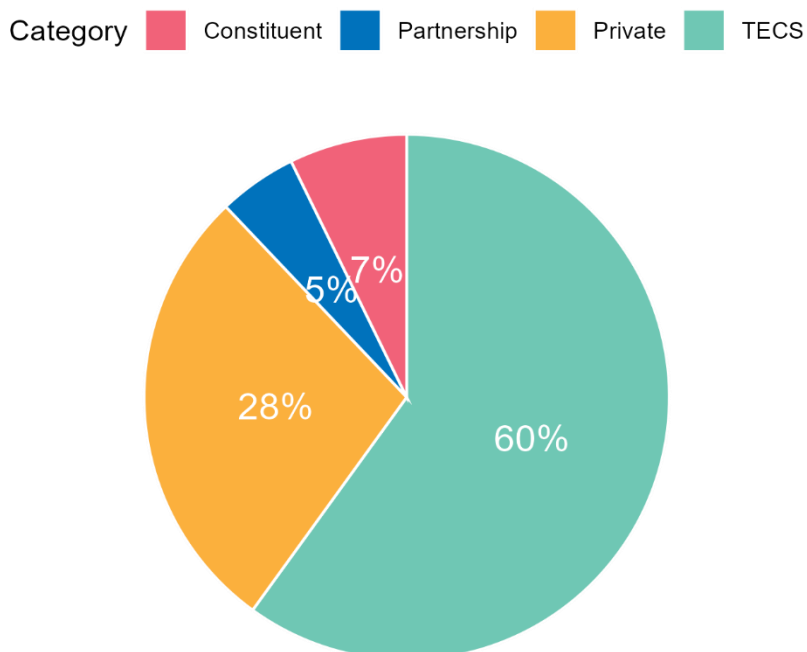
There are about a thousand schools in Nepal's TVET system— of which we manage to collect data on 829— and they fall into four categories. Technical Education in Community Schools (TECS) are general public schools which are affiliated with CTEVT and offer technical and vocational education programmes; they make up 60% of the total as seen in Figure 1, by far

the largest type of TVET learning institution. A third of the schools are classified as private, which are privately-run institutions registered with the CTEVT. The smallest proportion of schools are of the Constituent or Partnership type, 7 and 5 percent, respectively. The former are polytechnic centres directly managed by the CTEVT, whereas the latter are community-led institutions managed in partnership with CTEVT.

Figure 2: Proportion of schools by geographical characteristics; n=827
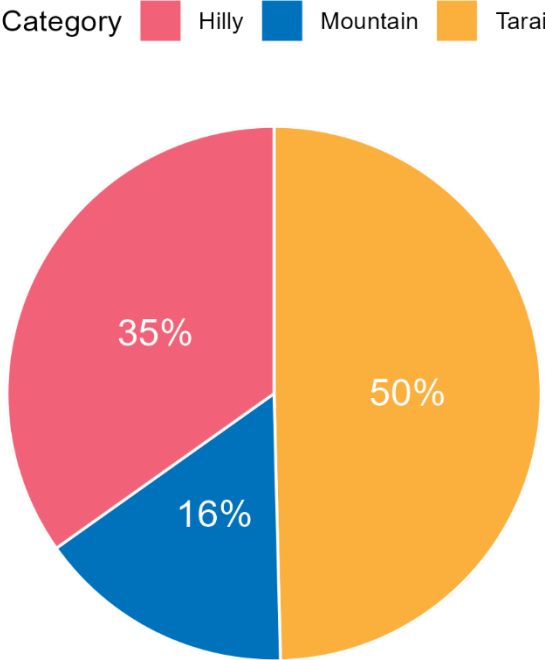
Figure 3: Proportion of schools by municipality type; n=827
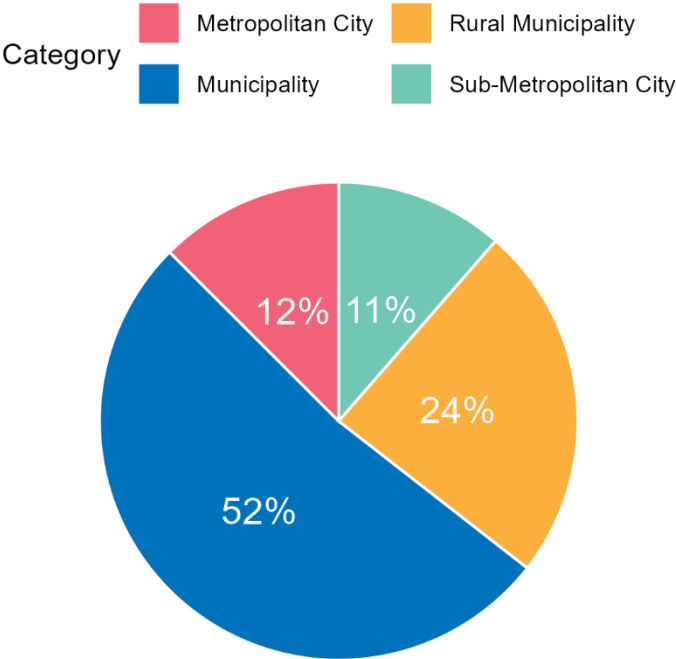
Nepal geography is characterised by three elongated ecological belts that span from east to west. The northern mountain belt showcases the Himalayas, an uninterrupted range of moun-

tains with several of the highest peaks in the world. The middle hilly belt consists of hills, valleys, and lakes, and is home to Kathmandu, the capital and largest city of Nepal. In the southern part of Nepal lies the Tarai belt, a flat region at a lower altitude than the other two. The greatest concentration of schools (50%) can be found in the Tarai lowlands, followed by the hilly (34%) districts; lastly, 16 percent of the schools are located in districts with mountainous geography (Figure 2). This corresponds roughly to the population distribution of the country (CIA, 2024).

Nepal's municipalities are classified according to four types, which are determined by the population inhabiting them and a series of amenities available to their residents; these are in increasing order of requirements and population number: Rural Municipality, Municipality, Sub-Metropolitan City and Metropolitan City. Figure 3 shows that TVET schools are concentrated in Municipalities (52%), which are the second most numerous administrative unit of its kind in the country. Despite being the most common type of municipality, Rural Municipalities host only 24% of the schools. The remaining schools are located in Sub-Metropolitan and Metropolitan Cities, 11% and 12%, respectively.

Figure 4: Proportion of schools by province; n=831
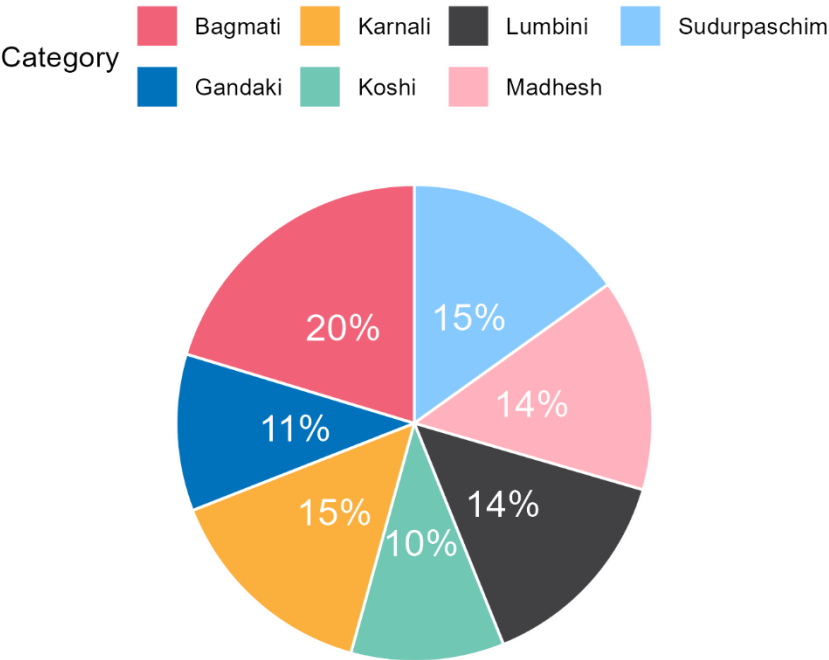
A fifth of TVET schools in the country are located in the province of Bagmati, Sudurpaschim and Karnali contain 15% of schools each, followed by Lumbini and Madhesh with both 14 percent; the remaining provinces host roughly the same number of schools, around 10% of the total each (Figure 4). The next figure allows to examine in further detail the distribution of TVET schools across the country. Figure 5 shows a map of Nepal with the density of schools by municipality, where darker blue coloured units denote a higher concentration of schools in the municipality. Slightly more than half of the municipalities in Nepal do not possess a TVET school, as indicated by the many units with lightest hue in the map, and only a select few host 6 or more schools.

Figure 5: Distribution of schools by muncipality
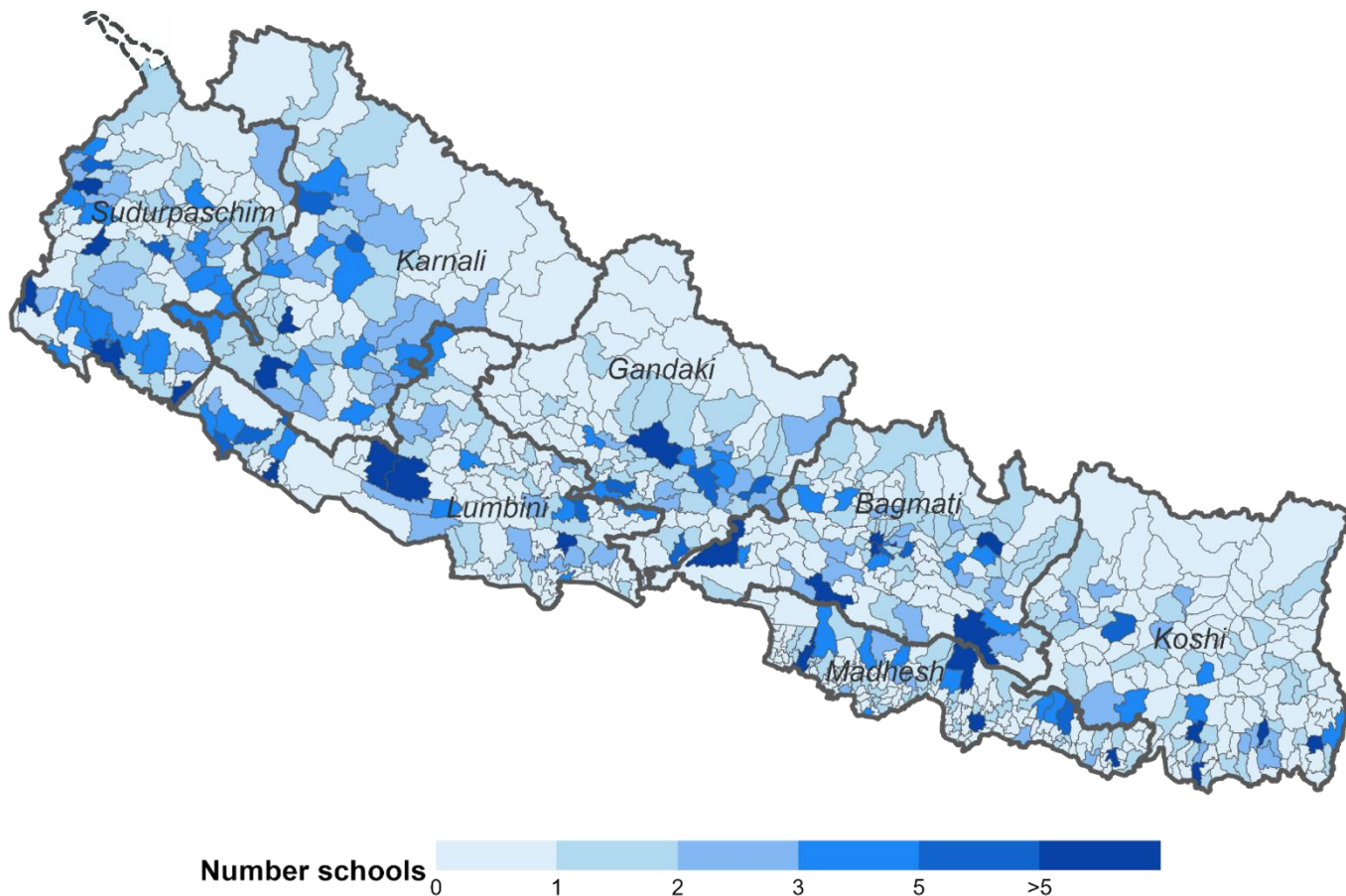
Figure 6: Programs by school, n=827
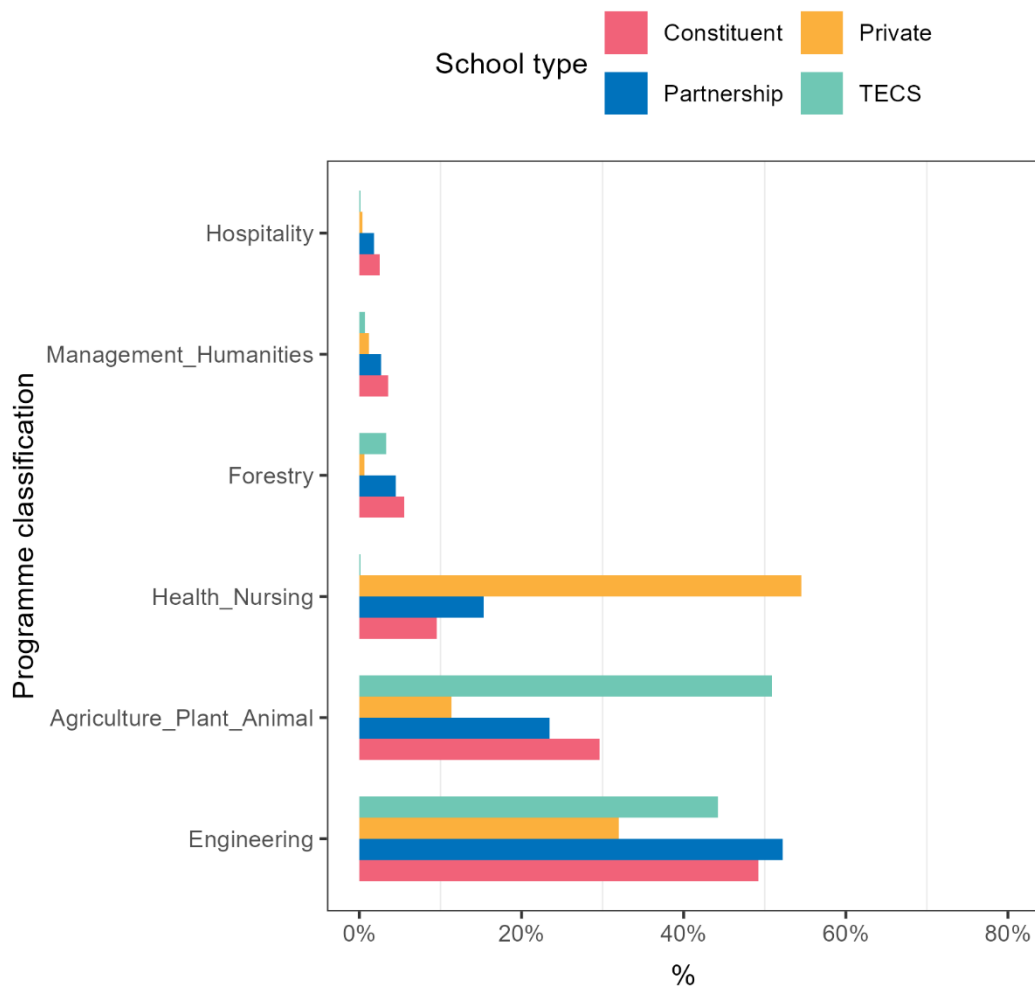
3.2   School programmes

We turn next to the type of programmes offered in the schools across the country. Overall, engineering programmes are the most common type available, making up 39% of the total, closely followed by courses on agricultural topics (36%). Health oriented programmes come third at some distance with 21% of the total, and the rest of programme types have only marginal representation.

The overall picture changes when we look at every kind of school separately as seen in Figure 6. Constituent and Partnership schools appear to specialise in Engineering programmes which represent half their offer, whereas Private schools seem to be the main providers of Health programmes—54% of their programmes—and TECS schools of agriculture-related ones (51%).

Figure 7: Programs by municipality type, n=816
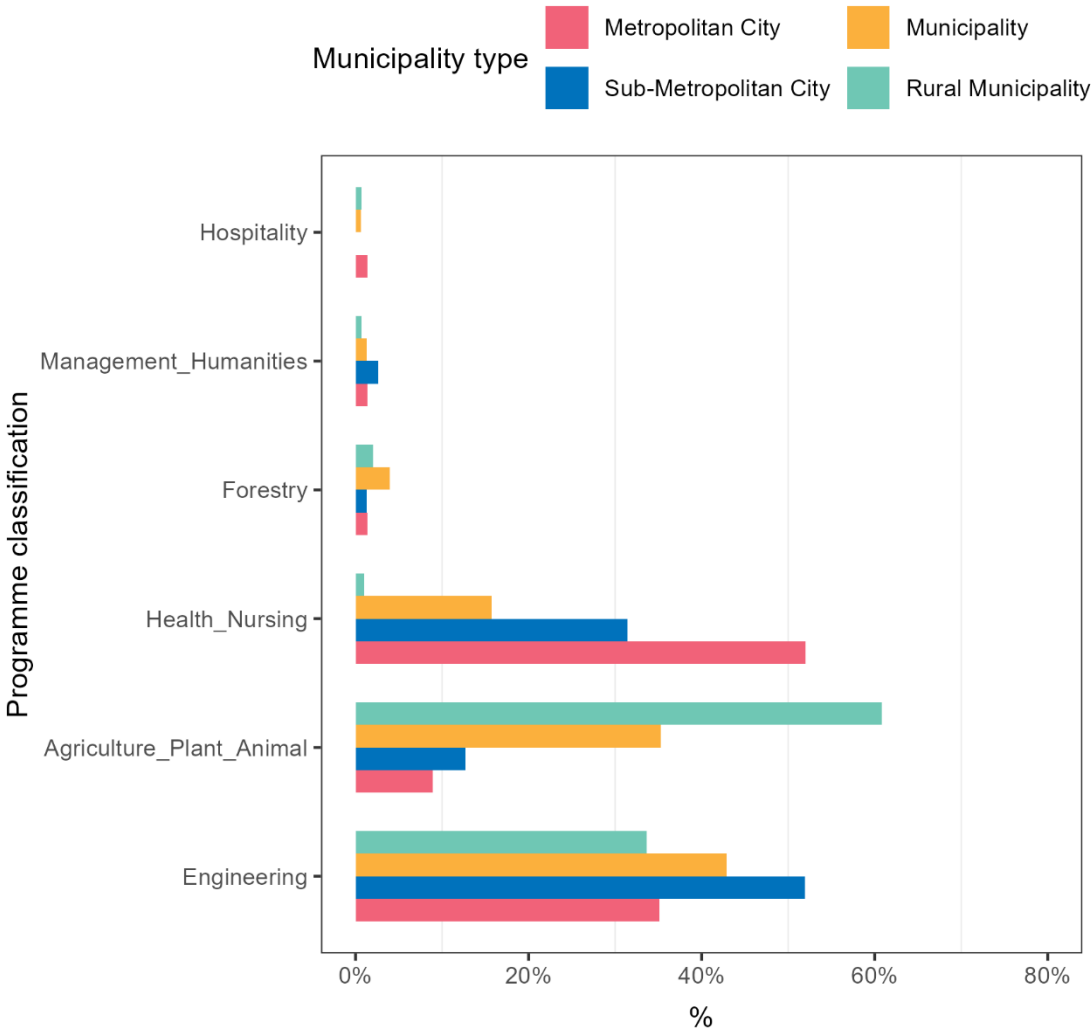
Nursing programmes are predominant in Metropolitan areas making up 52% of the total in this type of municipality (Figure 7). As expected, Agricultural programmes are the most common in Rural Municipalities—61% of the offer. Lastly, Engineering are the programmes most commonly found in Sub-Metropolitan Cities (52%) and Regular Municipalities (43%).

3.3 Capacity

As shown in Table 2, the average school capacity among TVET schools in Nepal is 74 places, although half of the schools possess a capacity to enrol 48 students or less.

Table 2: School capacity and graduation rate by category

Variable	School Capacity				Graduation Rate	
Category	Median	Min	Max	Obs	Mean	Obs
Overall	48	10	540	827	40%	722
School Type						
Constituent	96	40	470	60	46%	49
Partnership	96	40	320	40	33%	30
Private	80	20	540	231	45%	198
TECS	40	10	200	496	37%	445
Province						
Bagmati	48	20	444	168	36%	157
Gandaki	48	37	192	88	35%	54
Karnali	40	40	256	122	29%	121
Koshi	80	10	540	86	39%	84
Lumbini	68	24	470	119	58%	116
Madhesh	48	30	360	119	53%	80
Sudurpaschim	40	23	240	125	30%	110
Geography						
Tarai	70	10	540	417	41%	365
Hilly	48	20	444	279	40%	245
Mountain	40	23	256	130	36%	112
Municipality Type						
Metropolitan City	75	20	540	102	41%	86
Sub-Metropolitan City	80	27	470	93	49%	82
Municipality	48	20	360	426	39%	372
Rural Municipality	40	10	320	203	37%	179

Constituent and Partnership schools seem to be substantially larger than the rest, with most schools reporting a median capacity of 100 or more students. Private schools present a moderate capacity with a median of 80 students, whereas TECS tend to be a lot smaller, likely because their TVET programs are only one of a set of offerings, and they are generally to be found in smaller communities than other school types.

The largest schools by student capacity are in Koshi and Lumbini, where half the schools can enrol 80 and 70 or more students, respectively. Schools in other provinces present a similar median capacity of approximately 50 students across all programme types. Schools in the Tarai lowlands are considerably larger than the other geographical areas in the country, with half the schools capable of enrolling 70 students or more. By contrast, the median capacity of schools in hilly or mountainous regions is of just 48 and 40 students, respectively.

Clear differences emerge between city and other municipality types, median capacity is almost half in Rural and Regular Municipalities with respect to that in Sub- and Metropolitan Cities. These findings align with the population structure of Nepal as a whole.

3.4   Enrolment

The mean overall enrolment is slightly higher than half of the school capacity (53%) across Nepal's TVET system. Of those enrolled, almost half are women and 23 percent belong to a classified group.[1] Around 8% of schools report null rates, which indicate a complete absence of enrolled students.

Figure 8: Enrolment by school type, n=816

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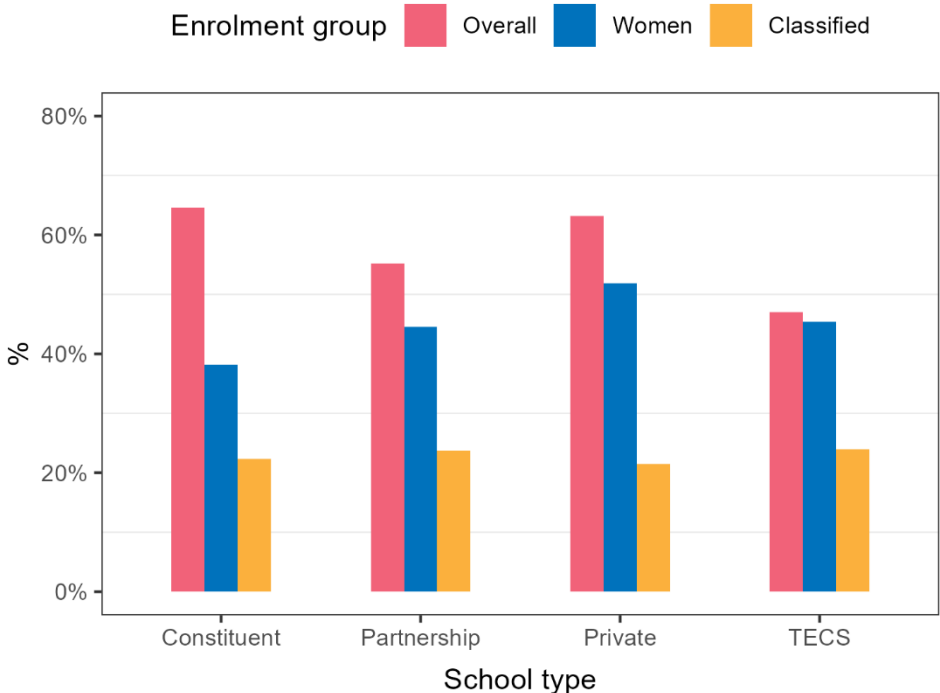
[1] CTEVT sets aside funding for scholarships and a certain quota of places for people coming from disadvantaged ethnic, social and caste groups (CTEVT 2022).

As per Figure 8, the rate of enrolment is highest for Constituent (65%) and Private schools (63%), and goes down for Partnership (55%) and, especially, TECS schools, where less than half of the capacity is covered with a 47% of students enrolled in their programmes. Women's enrolment is highest in Private institutions (52%) and lowest in constituent schools, with the other types falling in between.

There is no variation of note in classified enrolment across school types. The enrolment rate is around 10 points higher in Tarai and Hilly regions than in Mountain areas (Figure 9). Nevertheless, the latter presents the highest rate of female enrolment, whereas classified enrolment is similar throughout all geographies. It is also worth noting that the rate of enrolment in cities (64%) is close to 20 percentage points higher than in Rural Municipalities.

Figure 9: Enrolment by geography, n=815
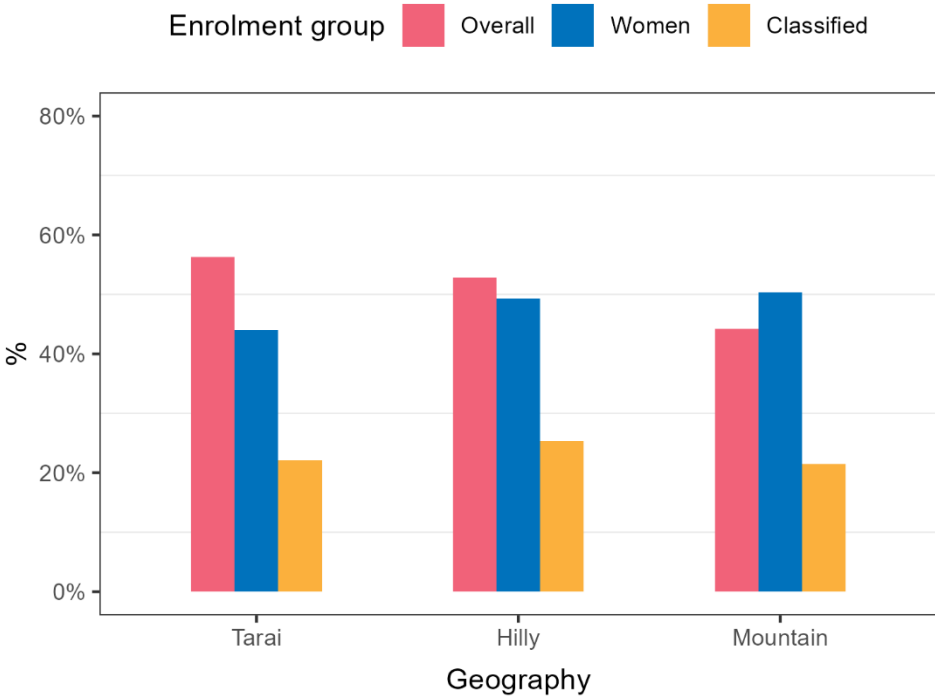
3.5   Graduation

As can be seen in Table 2 above, the average graduation rate across all TVET schools in Nepal is 40%. Nevertheless, Figure 10 shows that the most common rate of graduates achieved among TVET schools was naught, which was the rate provided by more than 30% of the schools that disclosed the figure. This finding means that more than 30% of the schools in the country failed to produce any graduates in the last complete year across all the programmes they run.

Graduation rates were particularly low in TECS and, especially, partnership schools, whose rates are in the low thirties. By contrast, Constituent and Private schools attain higher rates, and the majority of their schools are above the 50% graduation mark. Schools in Lumbini and

Madhesh achieve by far the highest proportion of graduates, with rates well above 50%, while the other provinces present an average of 30%.

Education providers in the Tarai regions attain higher rates than districts in Hilly or Mountain areas; in the latter, only half the schools see more than 25% of their students graduate. Sub-Metropolitan Cities register the highest mean graduation rate, with almost half of their last year's cohort graduating, 8 percentage points higher than in full Metropolitan areas. On the other hand, in Rural Municipalities only a third of the students graduate in most schools.

Figure 10: Overall graduation rate, n=722
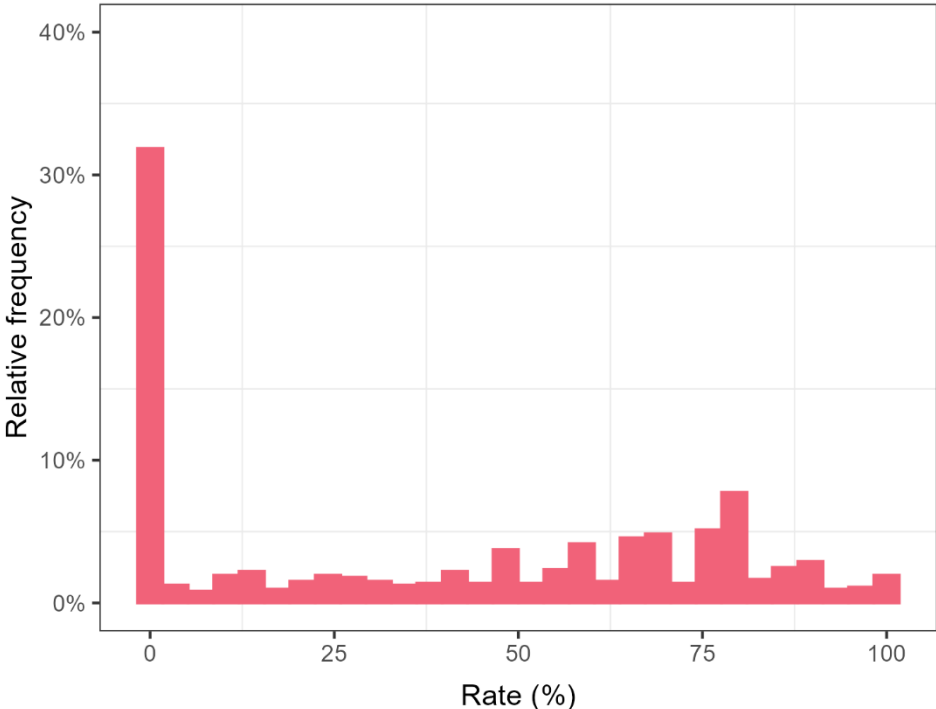
3.6   Instructors

Most Nepali TVET schools employ 9 instructors or more (Table 3). However, Constituent, Private and Partnership schools employed a much higher number, around 15, close to triple the instructors employed in TECS schools and broadly in line with the difference in school sizes.

The provinces of Koshi, Madhesh and Bagmati boast the largest workforces, with a median of 12 instructors, as opposed to 9 in Lumbini and Gandaki, 7 in Sudurpaschim and 4 in Karnali. The number of instructors in the Tarai and Hilly regions are noticeably larger than in mountainous ones. A similar divide can be found between cities and municipalities. The workforce in the cities doubles that of the Regular Municipalities and triples the instructors typically found in rural areas. Such findings are in line with the other characteristics of schools, which show smaller institutions with lower enrolment rates in mountainous areas; locations that tend to be more rural than the rest of the country.

Table 3: Instructor statistics

Variable	Median Instructor Statistics			
Category	Number instructors	Classes/ week	Hours/week	Obs
Overall	9	18	25	826
School Type				
Constituent	15.5	24	25	60
Partnership	15	18	24	40
Private	15	12	24	230
TECS	6	18	25	496
Province				
Bagmati	11	12	24	167
Gandaki	9	18	24.5	88
Karnali	4.5	24	18	122
Koshi	12	18	18	86
Lumbini	9	18	36	119
Madhesh	12	6	30	118
Sudurpaschim	7	18	30	126
Geography				
Tarai	10	18	30	389
Hilly	9	17.5	24	272
Mountain	4	18	20	123
Municipality Type				
Metropolitan City	18	10	22	102
Sub-Metropolitan City	14.5	18	35.5	92
Municipality	9	18	25	424
Rural Municipality	5	18	24	197

As seen in Figure 11.a), most instructors hold a master's degree, although for 33% of them the highest qualification is a bachelor's, and in 17% of the cases a diploma. Aside from their degree, 42% of instructors hold a teaching qualification (e.g. certificate from TITI) which, as shown in Figure 11.b), is significantly more common for instructors in Constituent schools at 71 percent, a rate which falls dramatically for the other types of schools, and it is at the lowest across TECS, with 36% of certified instructors.

Figure 11: Majority instructors' highest qualification (a) and instructor statistics by school type (b), n=824

a)

b)
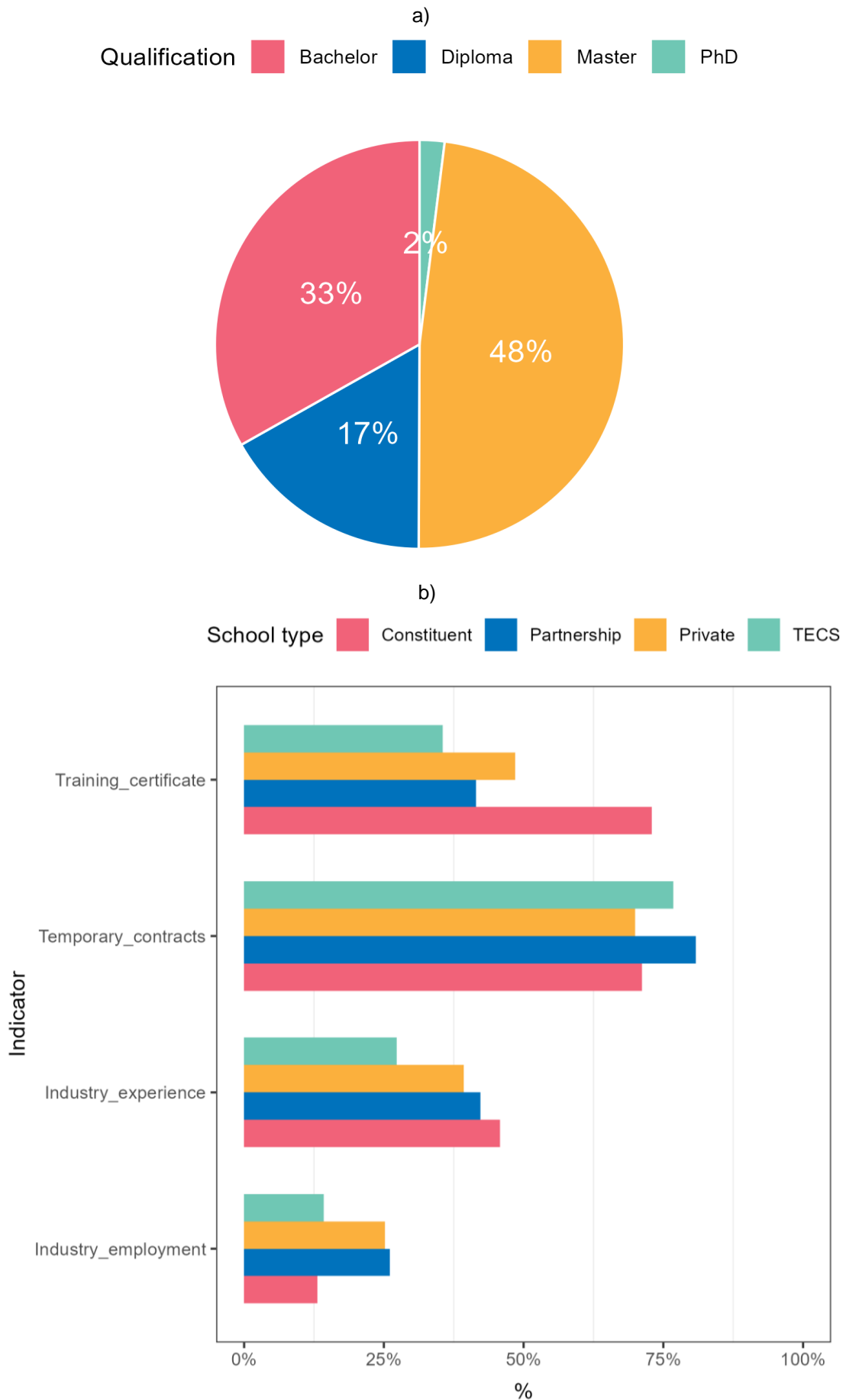
Note: *Training_certificate* is the rate of instructors holding a training certificate; *Temporary_contracts* is the rate of instructors in temporary contracts; *Industry_experience* is the rate of instructors with industry experience, *Industry_employment* is the rate of instructors employed in industry

On average, about a third of the instructors possess any kind of industry experience, and 18 percent of them remain in employment concurrently with their teaching duties. However, experienced instructors are more common in Constituent schools (46%), and rarer in TECS institutions, where less than a third had prior employment in industry. Balancing working as an instructor with a position in industry seldom occurs in both Constituent and TECS schools, but it is more prevalent in Private and Partnership centres, where a quarter of the workforce is employed in the industry while teaching.

The working conditions of instructors are marked by the temporary nature of the contracts on which they are employed. Three quarters of the overall workforce are in fixed-term contracts, a rate which, as shown in Figure 11.b), hovers for all school types between 70 and 80 percent.

Table 3 indicates that their teaching load consists of 18 classes per week lasting 25 hours. These working conditions are similar across school types, although they appear to be harder in certain provinces like Lumbini and in Sub-Metropolitan cities—in both cases instructors teach 36 hours within a single week, meaning almost all the time of a full-time teacher is spent in the classroom, leaving little contractual work time for class preparation or administrative tasks.

3.7 Students

Learning

Most Nepali TVET students spend more than twice as much time in the classroom than in the workplace in a given week—30 hours learning in the former for 12 in the latter.

Figure 12: Student learning hour/week by school type, n=824
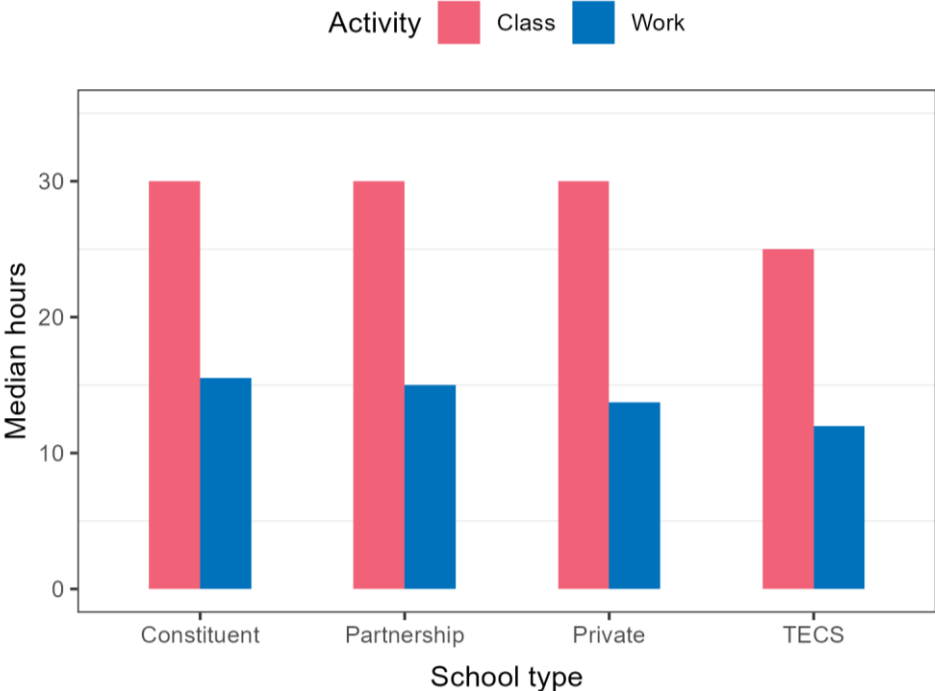
Figure 12 shows that this proportion is maintained across schools, although students in Constituent and Partnership schools spend slightly longer at work.

Figure 13 indicates that hours spent in the classroom in Tarai and Hilly regions are longer than in Mountain districts, where time in the workplace is in keeping with the other two areas at 12 hours, but classroom time is reduced from 30 to 21 hours.

Figure 13: Student learning hour/week by geographical characteristics, n=823

Teaching procedures

We asked schools about their practices in regard to several teaching procedures common in education; these were: whether instructors have access to the necessary teaching materials at all times, if they teach to a defined lesson plan and they receive training and support to develop it and, lastly, whether teachers are required to log their classes in a logbook.

Figure 14 depicts the frequency in which these procedures are enacted. In general, they appear to be the norm as approximately 70% of schools claim to always implement all of them (see 'Overall' pane). The only exception to this rule is the support provided to instructors for designing classes, which schools never offer or only sometimes in 55% of the cases.

Figure 14: School processes overall, n=824

School Processes, n=824
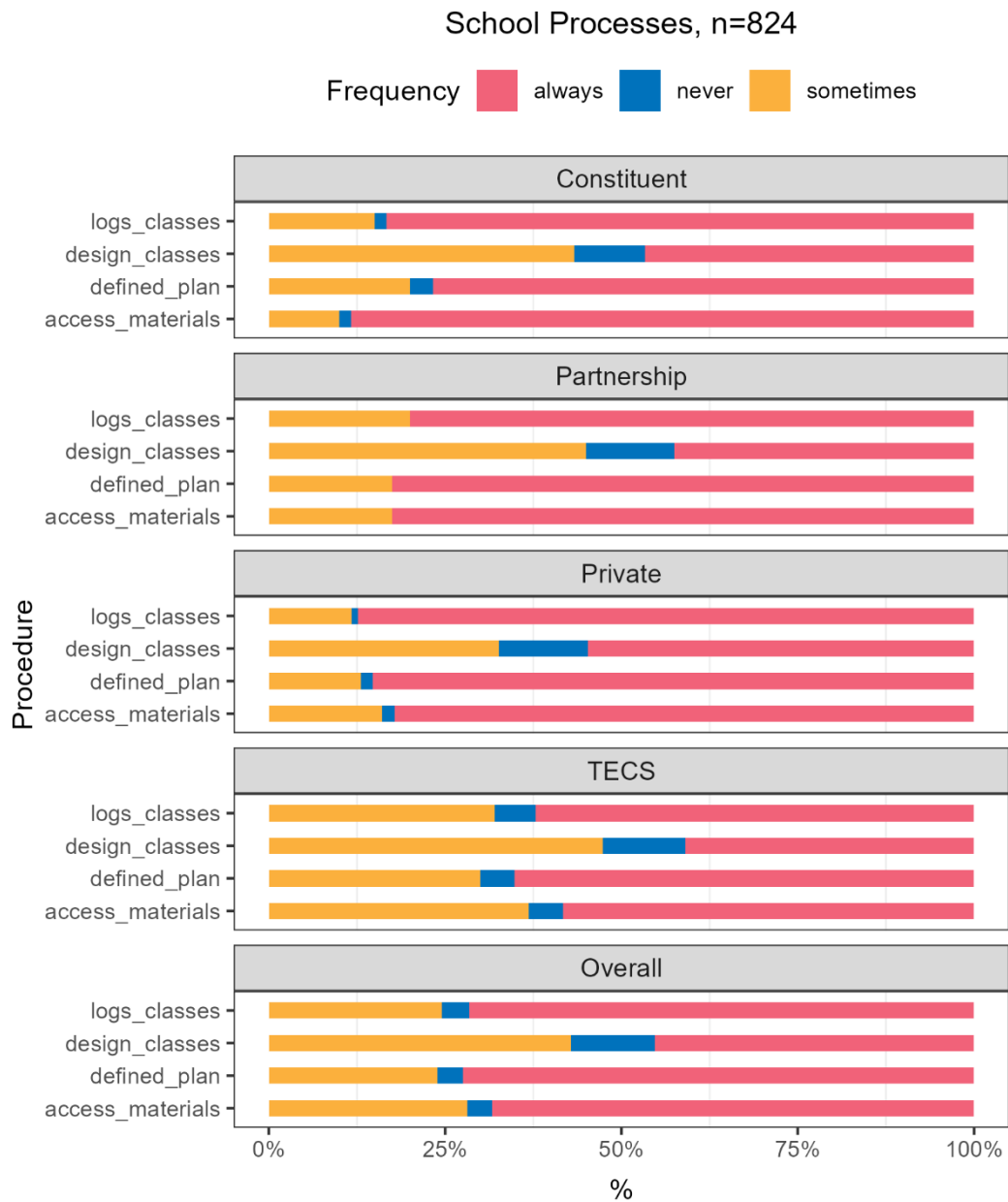
Note: *logs_classes:* teachers are required to log their classes; *design_classes:* teachers receive support to design classes; *defined_plan:* instructors teach toa a defined plan; *access_materials:* instructor have access to teaching materials.

The picture is relatively stable across school types, even though some schools are more adept in following the practices we enquired about. For example, close to 90% of Constituent schools claim to always provide access to materials, a rate which goes down to 80 percent in the case of Private and Partnership schools, and falls sharply to 58% for TECS. A defined teaching plan is always followed by 87% of the Private schools, which log their classes with the same frequency and to the same extent. A slightly lower proportion of Partnership and Constituent schools—around 80%—follow these protocols with equal frequency. Similar to the access to materials, TECS schools fall behind in regard to these best practices, with only 65% and 62% of their centres teaching always to a defined plan and logging their classes, respectively. As

noted earlier, lesson design support appears to be the one aspect with which Nepali schools lag behind, since only the majority of Private school (55%) provide it in all cases; a number that goes down to 47% of Constituent, and little above 40 percent for the other school types.

3.8   Funding

Sources

Figure 15 presents the sources of funding of TVET schools in Nepal. They are comprised of five categories: school fees levied by the schools from students; funds provided by the federal government through the CTEVT; other government funding from all levels, including the federal, provincial or local government; other autonomous income or funding generating activities (different from school fees); and donations or grants from external partners.

Figure 15: School funding overall, n=820
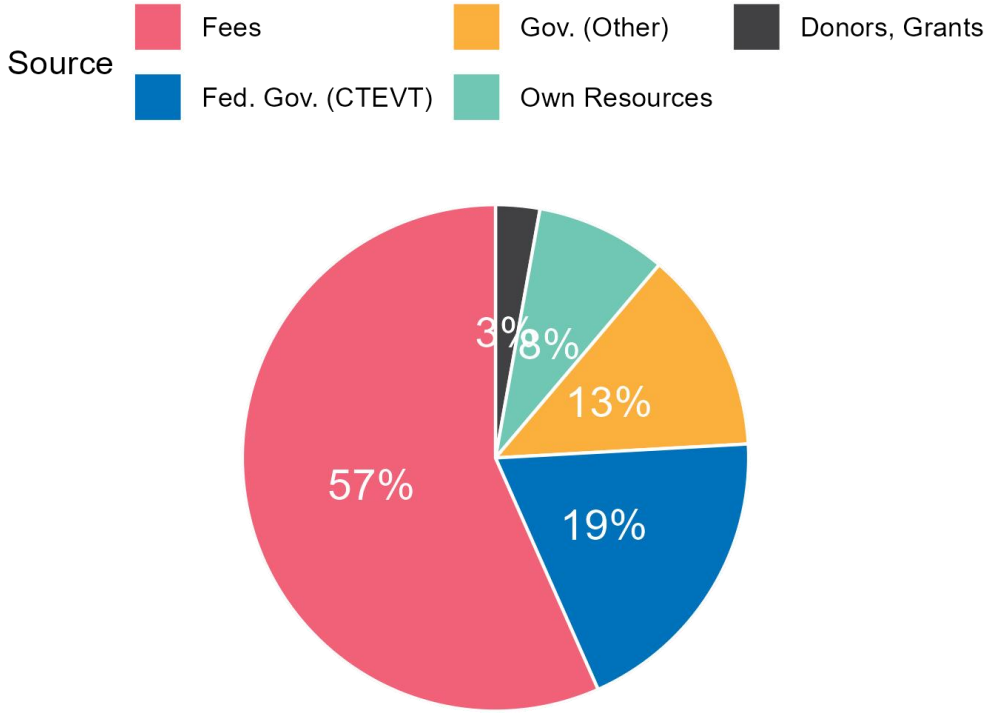
Figure 15 reveals that the school fees paid by students are the chief source of funds in the system by a considerable margin. Schools rely on fees to cover 57% of their financial needs, which they complement with other self-generated income to obtain an additional 8% of funds. The CTEVT is responsible for 19% of the funding across the board, whereas all other combined government bodies contribute to 13% of the budget; the remaining 3% coming from donors or grants.

Figure 16: School funding by school type, n=820
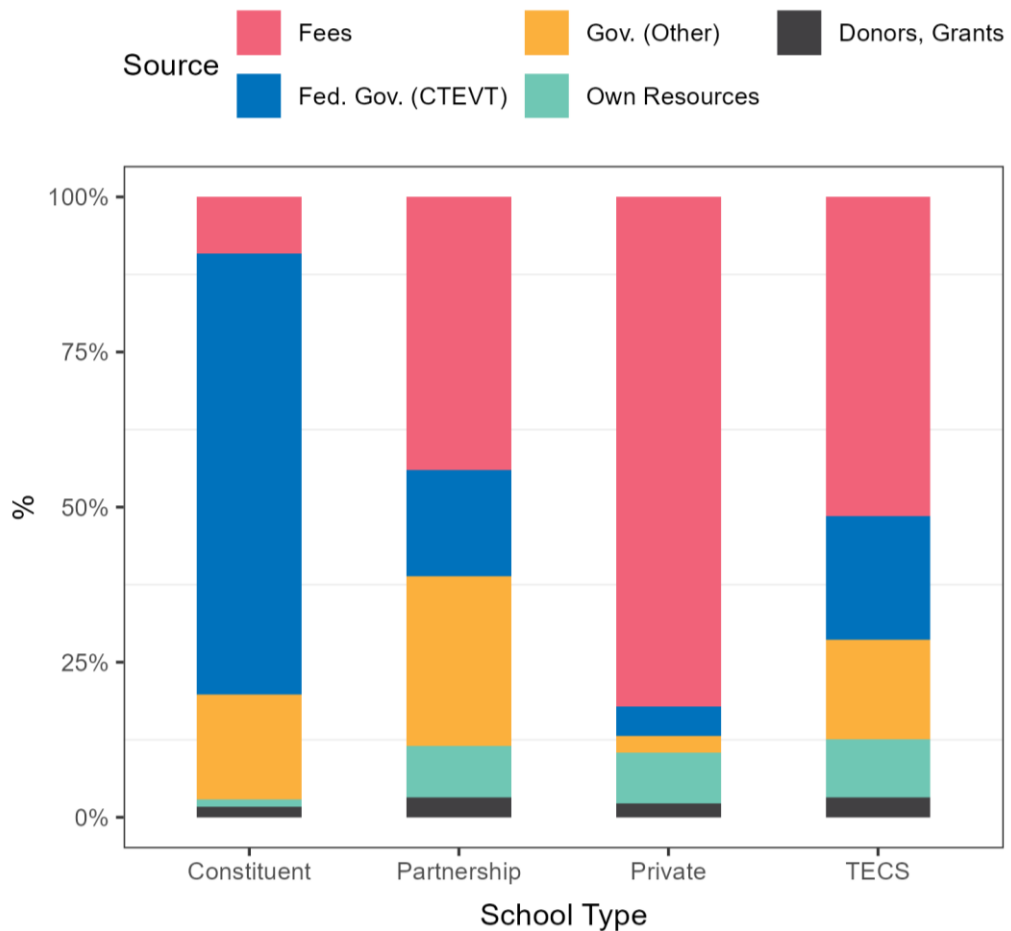
The different types of school exhibit markedly different funding structures, as seen in Figure 16. In particular, Constituents are set apart by the fact that they are the only ones whose main source of funding are not fees, since they derive most of it (71%) from the CTEVT and only 9% from fees. Unsurprisingly, Private school rely predominantly on fees and own resources, from where they obtain almost all their funding. Partnership and TECS school present the most balanced portfolio of funding sources, in which fees are the main source, but where the CTEVT and other government branches—especially at the local level—play a vital role, providing around 20% of the funding each to both school types.

Figure 17: School funding by province (a) and by municipality type (b), n=820

a)

b)
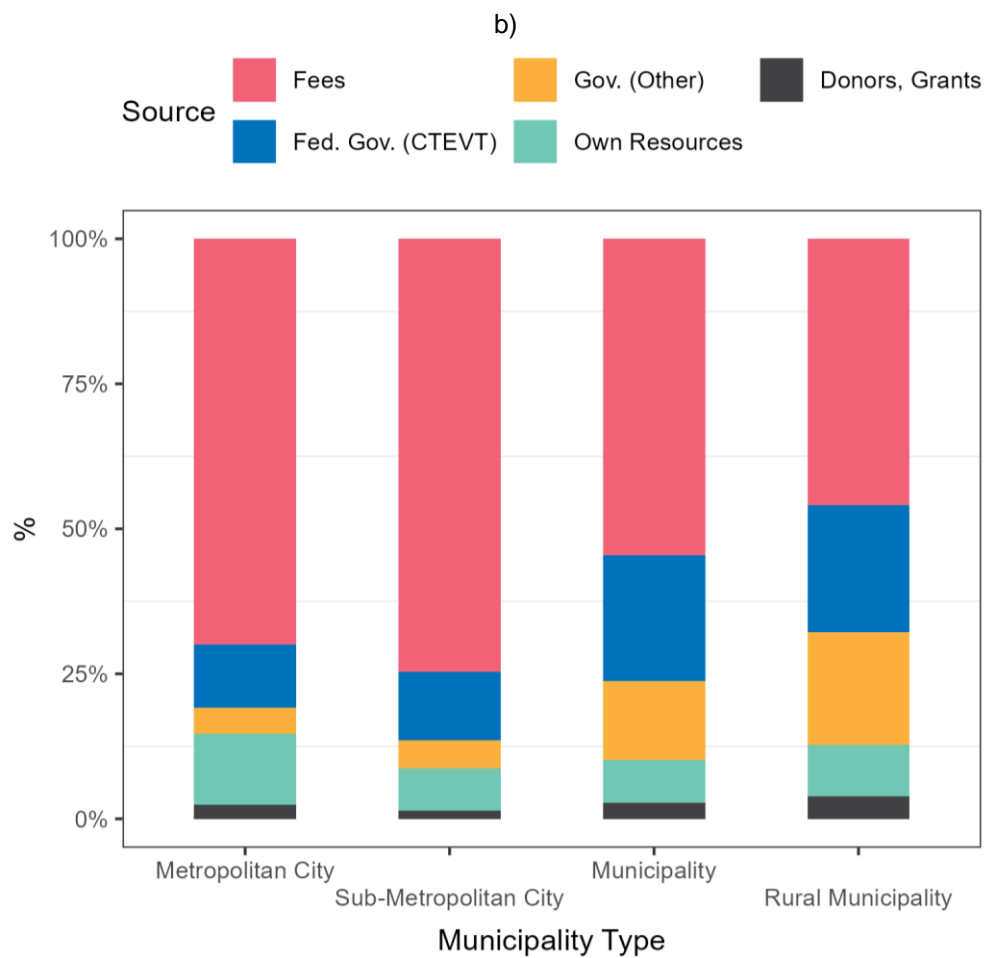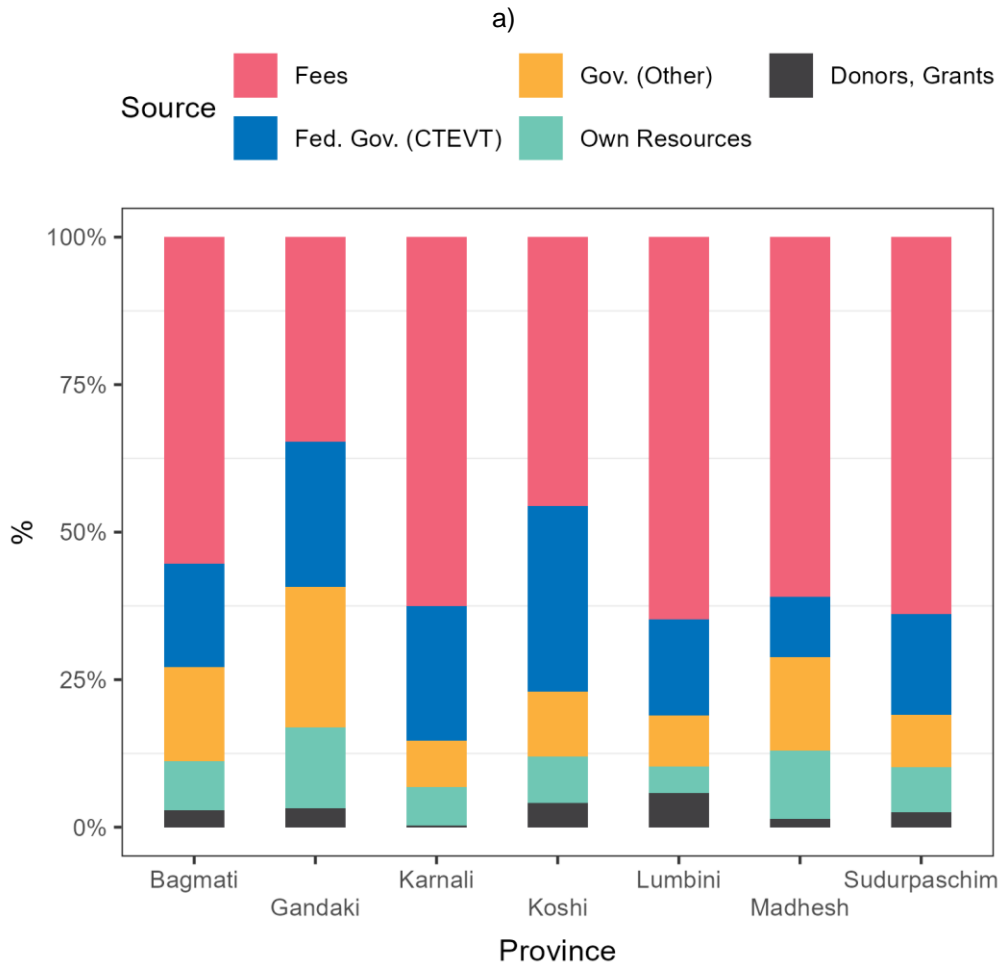
TVET schools in Lumbini, Madesh and Sudupaschim are the most self-reliant (Figure 17.a), covering their funding needs with fees and own resources, while in Koshi and, especially, in Gandaki schools rely for the majority of their funding on sources different than fees—mostly the CTEVT or other government institutions—even though fees are still their main single source.

Learning centres located in Sub- or Metropolitan Cities are almost entirely self-financed (Figure 17.b), with only 10% of their budget depending on the CTEVT and less than 5% on other government sources. By contrast, schools found in municipalities rely on public support from the government— or CTEVT in particular— to a much larger extent, which goes as high as 40% in the case of Rural Municipalities, yet they still obtain more than half of their funds through their own income generation activities.

Problems

Table 4 shows that the majority of the TVET schools in Nepal (53%) struggle to meet their funding needs. Moreover, the deficit in the last financial year is 1 million rupees or above for half of the schools with problems.[2] Figure 18.a) reveals that the deficit is under 3.5 million for the vast majority of schools—90% of them—although some schools run much larger ones.

The financial health of schools varies significantly across school types. In Table 4, we see that Constituent schools are the least affected by financial problems, yet the 28% of them which are suffer the largest shortfalls. Private schools are in a slightly worse shape, as only 66% meet their funding needs, which goes down to 55% for Partnership schools. Nevertheless, it is TECS centres which present the most delicate financial situation, as two thirds experienced financial struggles in the last year and lack the funds to sustain themselves.

We see wide variation in the financial situation of schools across provinces. Institutions in Koshi and Lumbini enjoy a relatively good health, with 70% being capable of obtaining sufficient funds. Yet in all other provinces, the majority of schools (50 to 60 percent) struggle financially, and in the extreme case of Karnali, the problems extend to 83% of the schools in the province. We can also infer from Table 3 that schools in mountainous areas tend to face financial problems much more commonly than in Tarai and Hilly regions, where only about half the centres are affected.

There is also stark divide between cities and municipalities in regard to financial health, whereas 68% of Sub- 58% in Metropolitan Cities manage to meet their needs, only 37% and 47% are able to do so in Rural and Regular Municipalities, respectively. Moreover, the deficits run are only slightly lower in municipality schools, which indicate the financial troubles across schools in municipalities are equally intense as in the cities but a lot more widespread.

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[2] 1 USD is equivalent to 133 Nepali Rupees (NPR). One million rupees are, therefore, approximately $7,500 and 3 million $22,500 (NRB, 2024).

Table 4: Funding statistics

Variable	Sufficient funds		Shortfall (NPR)	
Category	Mean	Obs	Median	Obs
Overall	47%	825	1,000,000	438
School Type				
Constituent	72%	60	5,000,000	17
Partnership	55%	40	1,650,000	18
Private	66%	230	1,200,000	78
TECS	34%	495	1,000,000	325
Province				
Bagmati	49%	167	1,500,000	86
Gandaki	41%	88	750,000	52
Karnali	17%	121	1,100,000	100
Koshi	72%	86	950,000	24
Lumbini	70%	119	1,200,000	36
Madhesh	41%	118	500,000	70
Sudurpaschim	44%	126	1,000,000	70
Geography				
Tarai	54%	388	1,000,000	178
Hilly	45%	272	1,100,000	150
Mountain	29%	123	1,200,000	87
Municipality Type				
Metropolitan City	58%	102	1,500,000	43
Sub-Metropolitan City	68%	92	1,200,000	29
Municipality	47%	424	1,000,000	226
Rural Municipality	34%	196	1,150,000	130

The shortfalls detected in the system lead to a host of issues which manifest with varying frequency in the embattled schools, as shown in Figure 18. The most common problem when funds are short relate to lack of resources for teaching, affecting the learning experience of students in 65 percent of schools. Students also need to face higher fees (in 38% of the cases), endure poorly maintained facilities (45%) and being unable to enrol in the courses they want (52%). Aside from students, instructors bear the brunt of the lack of funding, given that it bars them from being hired on a permanent (58%) and a full-time basis (51%), and prompts them to do overtime (45%).

Figure 18: Amount funding shortfall, n=438
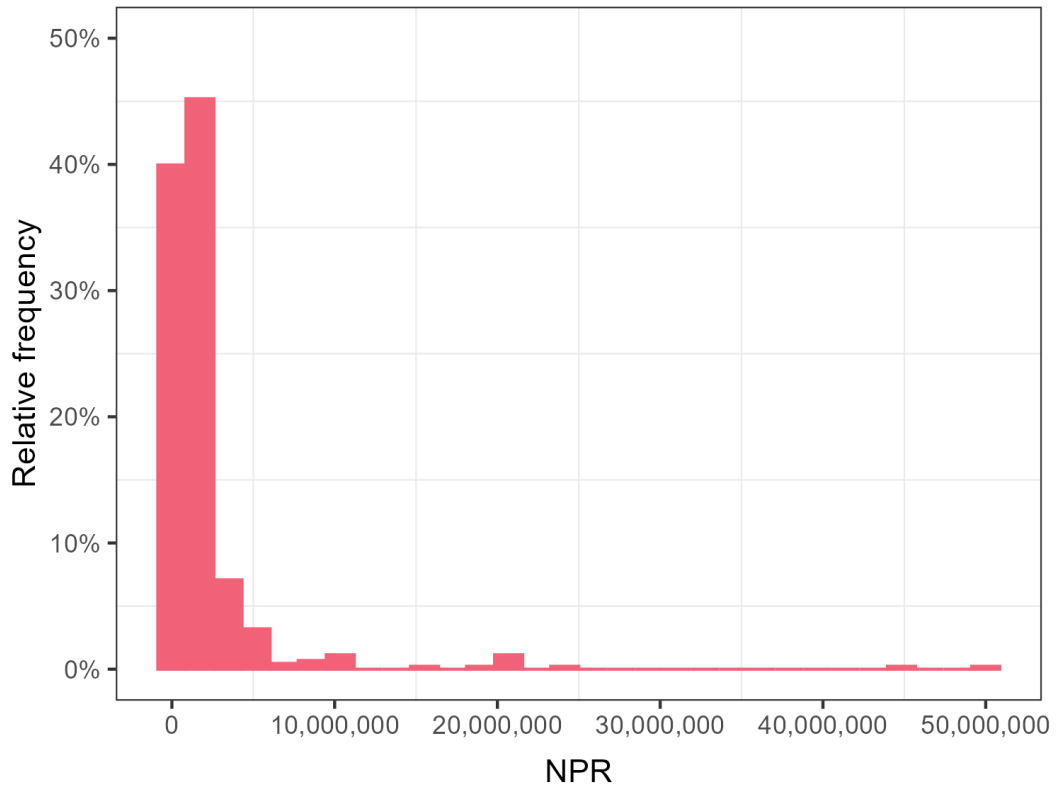

Figure 19: Funding problems, n=438
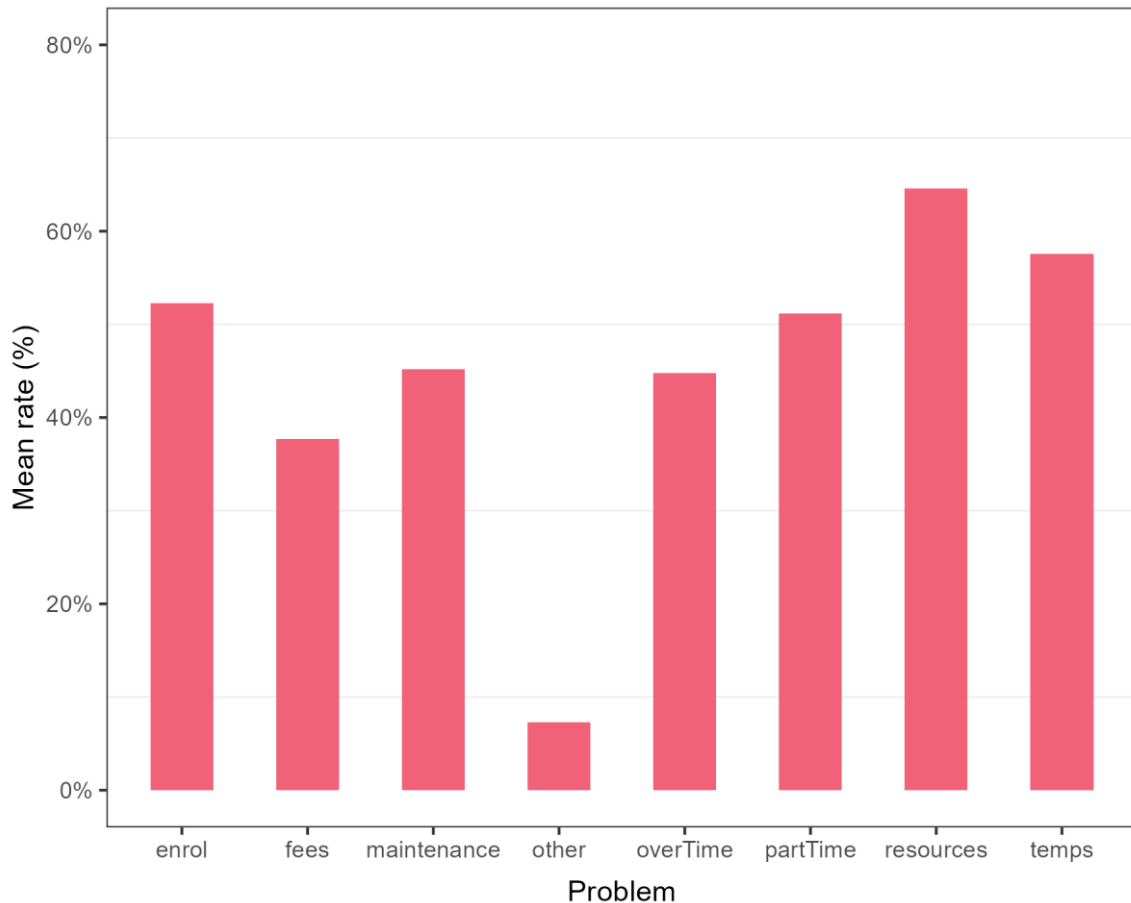
Note: Problems reported only by schools with shorfalls; *enrol* enrolment problems; *fees* increase of fees; *mainte-nance* unable to keep infrastructure; *overTime* instructors take extra classes; *partTime* forced to hire instructors part-time; *resources* lack of resource to teach; *temps* forced to hire instructors in temporary contracts.

3.9 European Foundation for Quality Management

The European Foundation for Quality Management (EFQM) model is a globally recognised framework that supports organisations in managing change and improving performance. The model is built around three dimensions, the first of which is Direction, understood as the purpose the organisation fulfils and the strategy it follows. Execution, the way the organisation intends to deliver its strategy, is the second dimension. The third part of the model are the Results, a dimension which measures the results achieved to date.

Each dimension is measured by a series of indicators which the leadership must gauge in relation to their organisation. In other words, the model provides a picture of the state of the organisation based on the answers of its leaders about how closely best managerial practices are applied. These practices or criteria are represented by a series of statements whose accuracy—in describing the practices of the organisation—the leadership is asked to judge (EFQM, 2021).

We decided to test this model with Nepali schools in order to evaluate their awareness of their purpose, strategy and achievements. To this end, we asked our respondents at the schools the extent to which all the criteria for each dimension were followed by their centre. For example, we enquired from respondents whether in scale of 1 to 5—where 1 is not accurate at all and 5 is completely accurate—the organisation identifies its key stakeholders and understand their needs and expectations; this is the second criterion of the Direction dimension (shortened to 'Q2_Identified_Stakeholders' in Figure 20.a). The questions broadly followed those in the standard EFQM questionnaire, but we adapted and removed some to account for the Nepali context.

Table 5 presents all the questions or statements posed to respondents regarding their schools and their shorthand names in the graphs.

The aggregate responses for all dimensions are shown in Figure 20 and Figure 21. Panel a) of Figure 20 presents the results for the Direction dimension, b) for Results and Figure 21 for Execution.

Table 5: EFMQ Statements

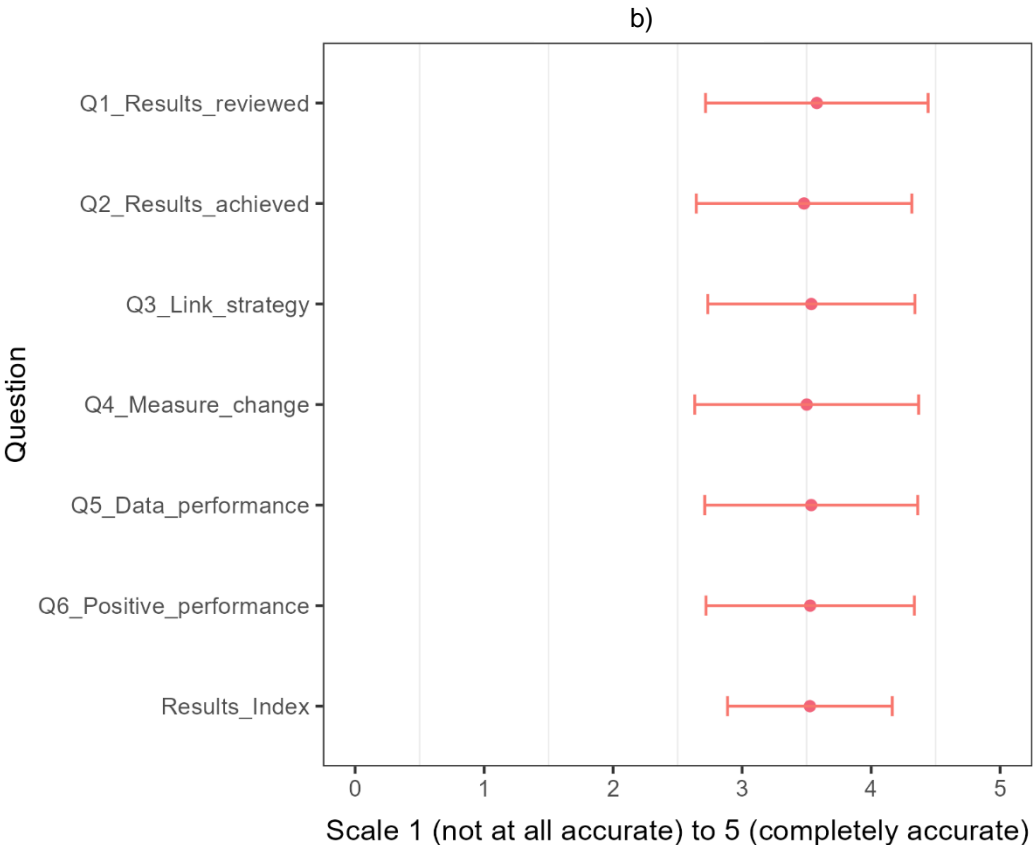| Shorthand name	Question (*The school…*)
Direction Dimension	
Q1_Defined_purpose	Has defined its purpose.
Q2_Identified_stakeholders	Identifies its key stakeholders and understand their needs and expectations.
Q3_Developed_strategy	Develops a strategy and related strategic priorities, performance targets and initiatives.
Q4_Aligned_vision	Creates and grows a culture that is aligned with its Purpose and Vision and embraces diversity.
Q5_Aligned_strategy	Adopts a governance and performance management system that aligns with its strategy and can adapt to major challenges and changes.
Q6_Peformance_measurement	Ensures high performance, and that measurement and reporting are built into its management systems.
Q7_Manage_change	Develops and adopt a process to manage change successfully and learn from previous experiences.
Q8_Aligned_culture	Embeds a culture that is aligned with its purpose, and encourages creativity and innovation.
Direction_Index	Average score over all the questions about the Direction dimension
Execution Dimension	
Q1_Identified_students_needs	Identifies its students based on their individual needs, aspirations, skills, and capabilities.
Q2_Communication_stakeholders	Establishes effective communication channels with stakeholders to enable timely feedback and keep them well informed which will help the school in building effective long-term relationships.
Q3_Creating_learning_environment	Works with students to create an individualized, supportive, and inclusive learning environment, and uses a variety of appropriate assessment tools and approaches to meet the different needs of students
Q4_Relationship_parents	Maintains a relationship with parents during all stages of their child's school life.
Q5_Retains_staff	Has attracted, engaged, developed and retained its' academic and non-academic staff.
Q6_Contribution_society	Works with its key partners and suppliers to enhance the learning experience, and establishes and enhances a relationship of mutual transparency, integrity, and accountability.
Q7_Enhances_learning	Develops Education strategies and fit for the future curricula taking into account the different needs of its students.
Q8_Develops_educ_strategie	Implements creative and innovative methods for teaching and learning to improve performance and deliver better educational outcomes.

Shorthand name	Question (*The school…*)
Execution Dimension (cont.)	
Q9_Innovative_teaching	Implements performance management system to monitor the achievement of its purpose and strategic objectives.
Q10_Peformance_measurement	Develops and implements plans to manage risk from different perspectives such as cultural, strategic, operational, financial, legal, regulatory, societal and technical risks (including risks from IT and cybersecurity challenges as well as COVID pandemic).
Q11_Risk_management	Develops and implements plans to manage risk from different perspectives such as cultural, strategic, operational, financial, legal, regulatory, societal and technical risks (including risks from IT and cybersecurity challenges as well as COVID pandemic).
Q12_Safe_environment	Develops and implement policies and procedures to ensure a safe learning environment, and promotes equality, diversity, and tolerance within the school environment.
Q13_Learning_technologies	Regularly uses learning technologies, online resources and digital tools and promotes digital and technological fluency.
Q14_Innovative_practices	Promotes the adoption of innovative classroom practices, supports and re-wards teachers who engage new approaches in teaching and learning.
Execution_Index	Average score over all the questions about the Execution dimension
Results Dimension	
Q1_Results_reviewed	Performance results have been identified and reviewed and improved over time.
Q2_Results_achieved	Positive trends or sustained outstanding results have been achieved.
Q3_Link_strategy	A set of results that clearly link to the Purpose, Vision & Strategy of the school have been identified and these continue to be reviewed and im-proved over time.
Q4_Measure_change	The school has measured, and continues to measure, the impact of its change management strategy.
Q5_Data_performance	The school has used, and continues to use, data, and other insights, to predict future performance.
Q6_Positive_performance	Positive trends or sustained outstanding performance over the strategic period/cycle have been achieved.
Results_Index	Average score over all the questions about the Results dimension

Figure 20: EFQM direction (a), results (b), n=824

a)

Scale 1 (not at all accurate) to 5 (completely accurate)

b)

Scale 1 (not at all accurate) to 5 (completely accurate)
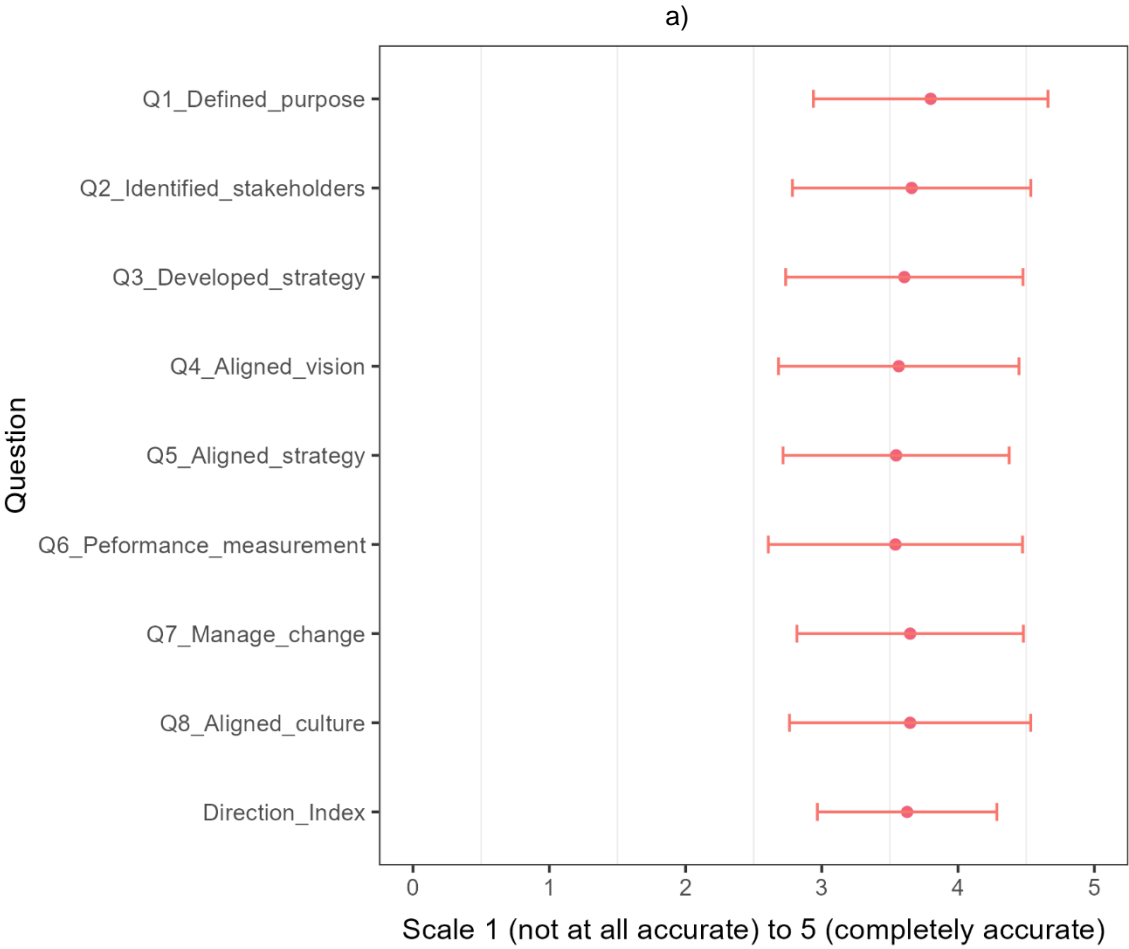
Respondents are markedly consistent in their answers both in terms of the mean responses and their variability. The overall mean for all indices is approximately 3.5 in the accuracy scale, which translates to the statements been deemed as moderately accurate for the schools respondents represent.

This level of consistency displayed throughout the different indicators—regardless of the specific criterion they measure and the dimension they belong—suggests that respondents may not have understood the meaning of the criteria or lack a defined idea of how it applied to their particular school. The results by school type (see appendix) show no variation in the scores. Given the wide heterogeneity on all other responses based on school type, we take this as further evidence that these questions were not clearly understood by respondents.

Figure 21: EFQM execution dimension, n=824

Scale 1 (not at all accurate) to 5 (completely accurate)
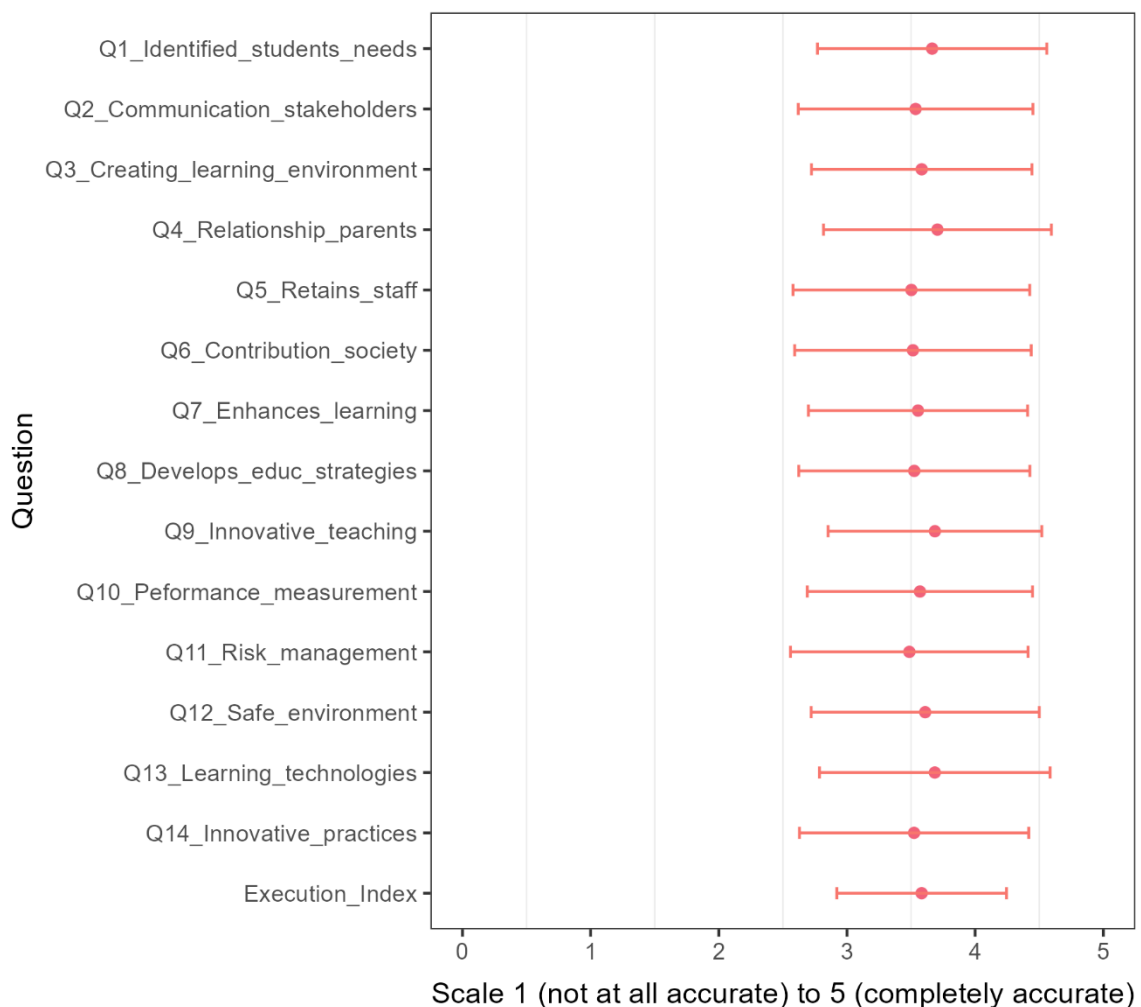
4   Profile CEHRD Schools

The current section presents a profile of the general secondary schools which run programmes designed by the Centre for Education and Human Resource Development (CEHRD) in Nepal, based on the analysis of the data from the baseline survey. The CEHRD is a body ascribed to the Ministry of Education, Science and Technology (MOEST), which established it in 2018. CEHRD-affiliated schools are therefore different than actual TVET schools in that they run TVET-related programmes alongside general-education ones. Furthermore, their technical programmes combined courses from general education curricula and TVET courses to a similar extent. TVET courses in CEHRD schools do not lead to qualifications alone, while TVET programs run or sanctioned by CTEVT lead to Pre-Diplomas and Diplomas in their own right.

4.1   School characteristics

There about 450 CEHRD schools, of which we managed to obtained information for 360 of them. We first look at the characteristics of the CEHRD schools according to three dimensions, the province and type of municipality where they are located, and the geographical features of the area.

Figure 22: Proportion of schools by province (CEHRD), n=359
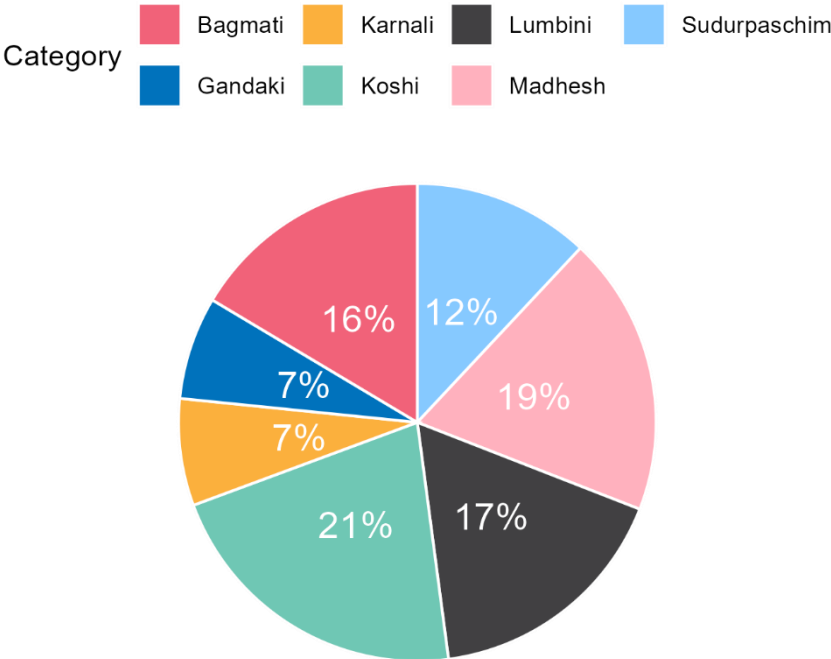
Figure 22 and Figure 23.a) show that CEHRD schools are distributed across all provinces and geographies, though underrepresented in metropolitan cities—it is likely that these programs are not offered here since full technical programmes from TVET-only schools are readily available. Koshi hosts the most Schools with 21%. Madhesh and then Lumbini follow closely behind

with 19% and 17% of schools, respectively. Bagmati with 16% and Sudurpaschim with 12% come next. Lastly, Gandaki and Karnali have the lowest number of schools with 7% each.

Figure 23: Proportion of schools by: geographical characteristics (a) and municipality type (b) [CEHRD]; n=359

a)

b)
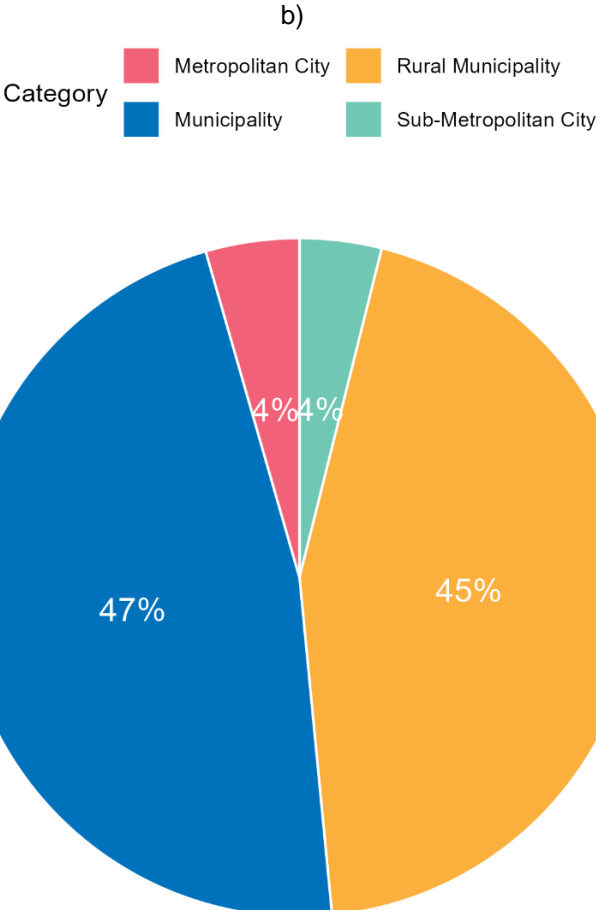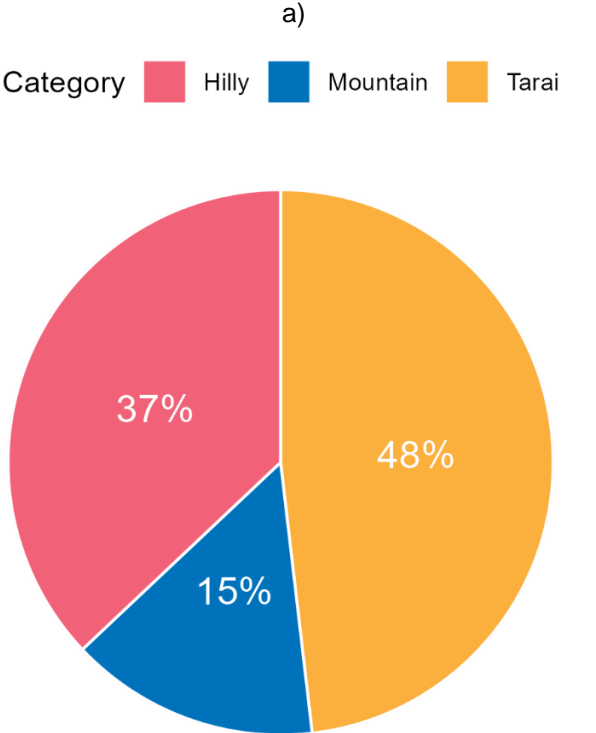
As shown in Figure 23.b), regular Municipalities contain the highest amount of CEHRD schools with 47%, followed closely by Rural Municipalities with 45%. Sub- and Metropolitan Cities only host 4% of the schools each.

In terms of their geography, panel a) of Figure 23 indicates that the most CEHRD schools (48%) can be found in the Tarai lowlands, followed by the hilly (37%) districts, only 15 percent of the schools are located in districts with mountainous geography.

4.2   School programmes

CEHRD Schools only offer five types of TVET courses which are Plant Science, Animal Science, Civil Engineering, Electrical Engineering and Computer Engineering. Engineering courses dominate the CEHRD offer with almost 60%, of which the most common are Civil Engineering. A third of the remaining courses are on plant science, and the other 9% are animal science courses.

Figure 24: Programmes by municipality type (CEHRD), n=359
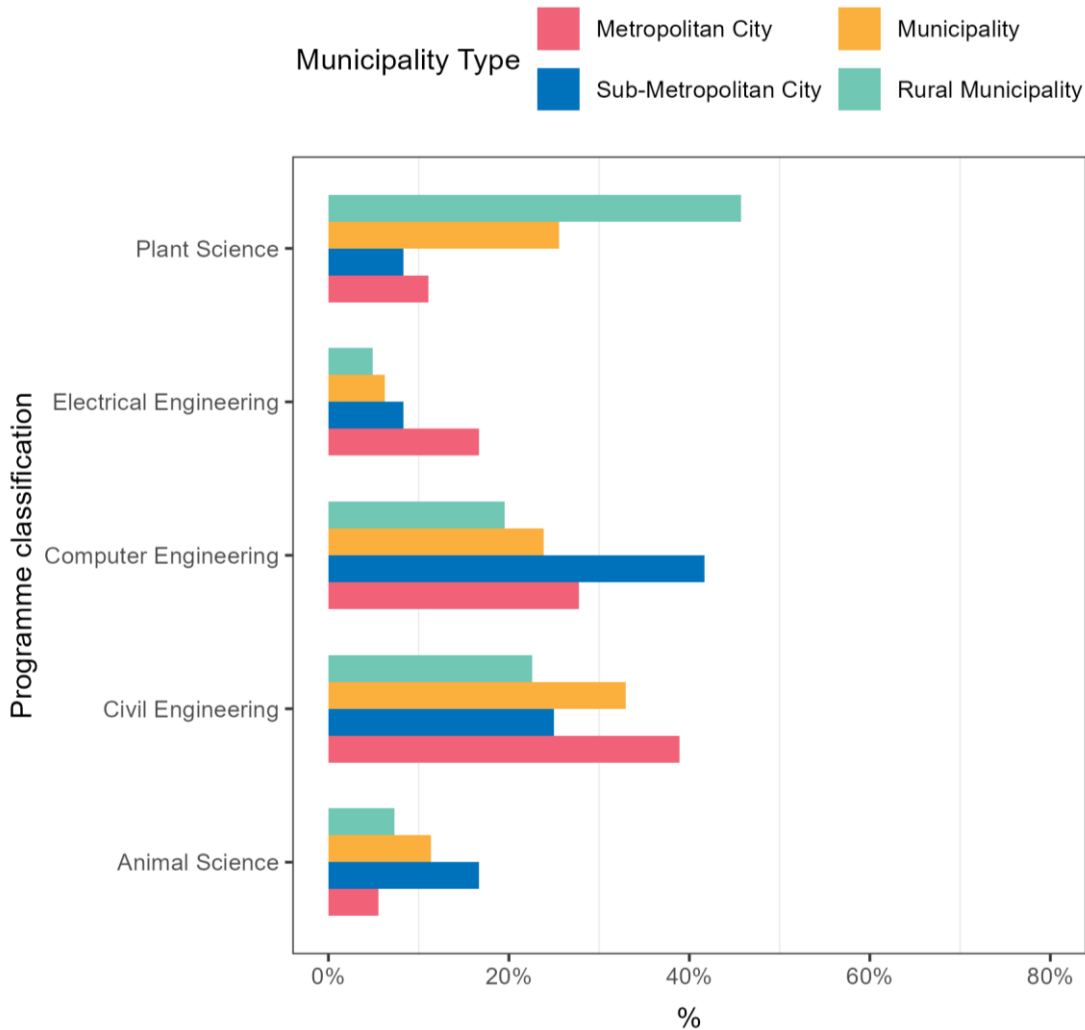
Figure 25: Programmes by geographical characteristics (CEHRD), n=358
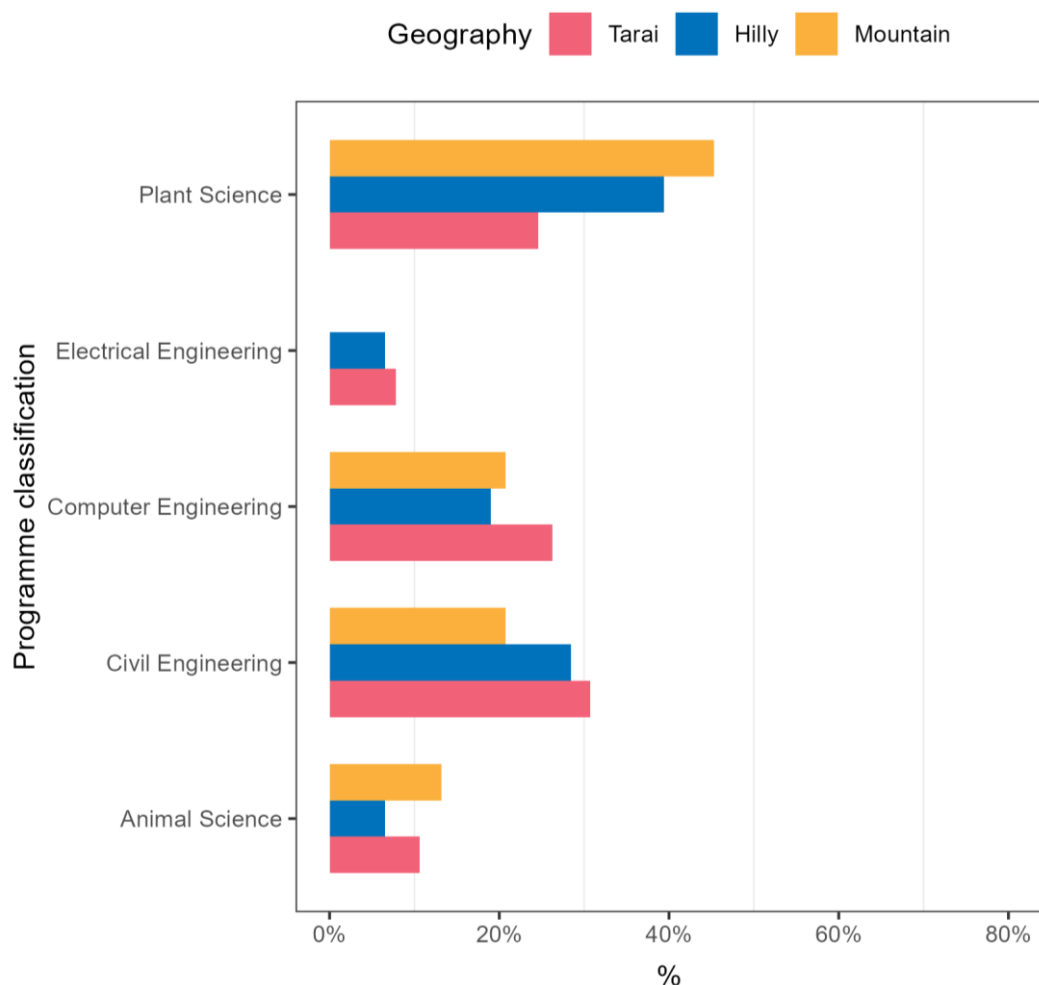
When we look at their distribution at the municipality level (Figure 24), agricultural-related programmes are the most common in rural municipalities—amounting to 53% of the programmes there— while engineering programmes are the main offer in the other municipality types, making up 63% of the courses in Municipalities, 75% Sub-Metropolitan Cities and 84% in Metropolitan Cities.

Looking at the geographical characteristics of the schools where the courses are provided (Figure 25), plant science courses are the most common in Hilly and Mountain regions, making up 39% and 45% of the offer, respectively. By contrast, schools in Tarai areas tend to offer more engineering courses, which represent 65% of all courses in these regions.

4.3 Capacity

Table 6 shows the available capacity for technical stream programs of CEHRD schools across Nepal. Throughout all categories (provincial, geographical and municipalities) the median capacity is 48. While there is some variation in average values, this result indicates that CEHRD courses are fairly homogenous in size across the country.

Table 6: School capacity and graduation rate by category (CEHRD)

| Variable | School Capacity | | | | Graduation Rate | |
Category	Median	Min	Max	Obs	Mean	Obs
Overall	48	25	320	359	74%	339
Province						
Bagmati	48	30	320	59	60%	53
Gandaki	48	38	192	25	70%	24
Karnali	48	48	48	26	68%	26
Koshi	48	25	152	77	68%	76
Lumbini	48	40	96	61	81%	61
Madhesh	48	40	48	68	92%	62
Sudurpaschim	48	40	48	43	68%	37
Geography						
Tarai	48	25	320	174	80%	168
Hilly	48	25	192	132	68%	122
Mountain	48	35	192	52	67%	48
Municipality Type						
Metropolitan City	48	30	192	18	75%	17
Sub-Metropolitan City	48	48	48	12	86%	12
Municipality	48	38	192	169	74%	161
Rural Municipality	48	25	320	160	73%	149

4.4   Enrolment

Overall enrolment in CEHRD courses is at 73% for the whole country, and a quarter of schools are at full capacity. Girls make up close to half of the students enrolled, and members of classified groups slightly less than a third.

As shown in Figure 26.a), Tarai regions lead the rate of enrolment with 79%. Mountain districts come next in terms of both overall (68%) and female enrolment (46%). Despite having the lowest enrolment rate at 66%, Hilly regions have the highest female enrolment of all geographic territories with 49%.

When comparing enrolment at the provincial level, we see in Figure 26.b) that average enrolment is the highest in Sudurpaschim (85%) and Madhesh (83%), and hovers slightly over 60% for the other provinces. Female enrolment is fairly stable at 50% or slightly below across provinces, with the only exception of Madhesh, where it falls to 39%. In contrast to female rates, classified enrolment fluctuates widely among Nepali provinces; at 45% the highest rate is in Bagmati and Madhesh, with the lowest in Karnali (3%). The rest of the provinces present rates below 20%, save for Koshi which reports 31% of classified enrolment.

Figure 26: Enrolment by geographical characteristics (a) and province (b) [CEHRD], n=350

a)
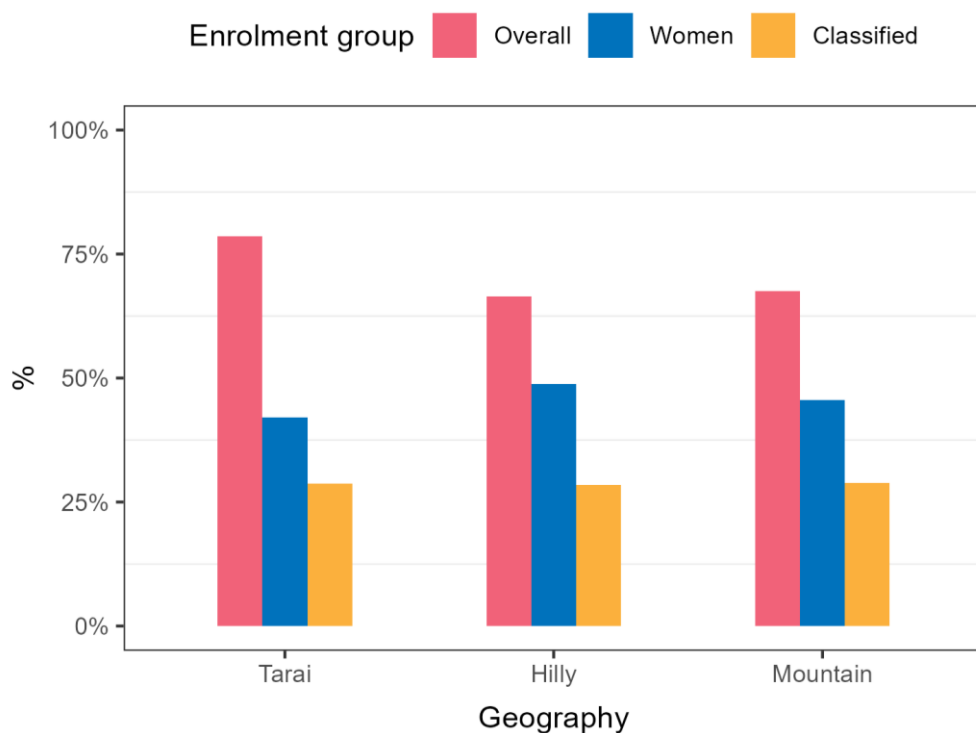
b)
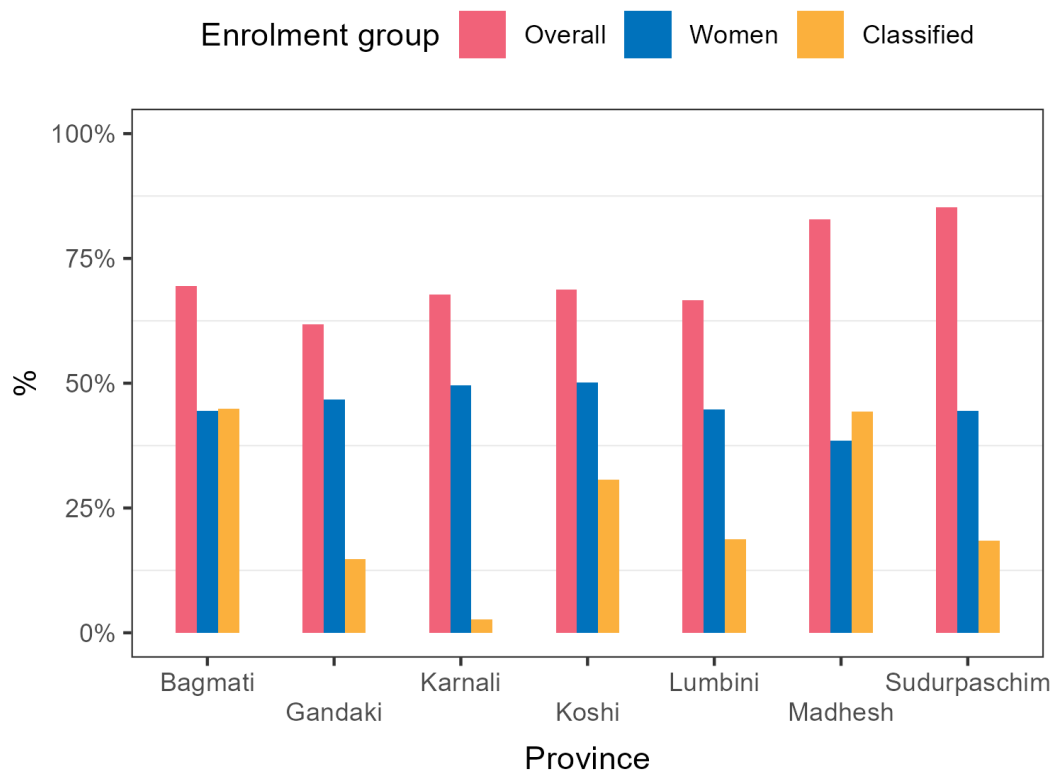
4.5　Graduation

As shown in Table 6 above, the average CEHRD graduation rate overall in Nepal is 74%, furthermore, we can see in Figure 27 that in over a third of schools surveyed all the students in the last cohort managed to graduate.

Madhesh had the highest graduation rate at 92%, while Bagmati had the lowest graduation rate at 60 percent. The remaining provinces achieved average graduation rates of 68%, although in Lumbini's case it rose to 81%.

Tarai regions boast a graduation rate of 80%, for 68% of the other two. At the municipality level the graduation rate is close to three quarters for all types, with the exception of Sub-Metropolitan Cities where it rises to 86%.

Figure 27: Overall graduation rate (CEHRD), n=339
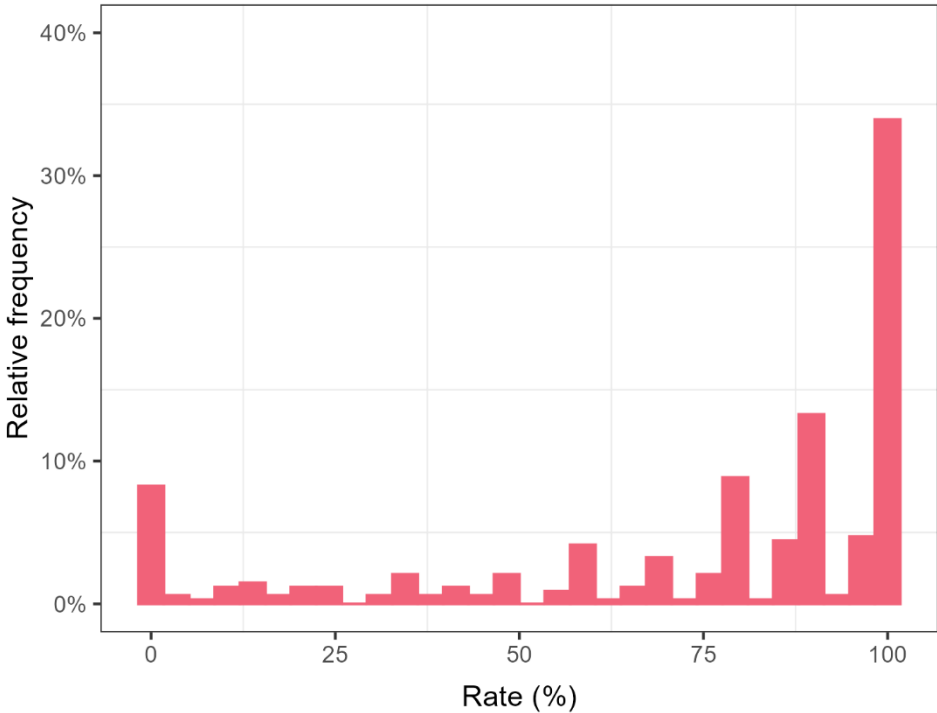
4.6　Instructors

CEHRD schools typically employ 8 instructors for their technical stream programs, with little variation across categories as displayed in the first column of Table 7.

Figure 28.a) reveals that half of the CEHRD instructors hold a bachelor's degree as their highest qualification, and 45% a master's degree.

Aside from these degrees, panel b) of Figure 28 shows that a little more than a third of instructors in most municipalities hold a teaching qualification, although the rate rises to 55% in Metropolitan Cities.

Table 7: Instructor statistics (CEHRD)

Variable	Median Instructor Statistics			
Category	Number instructors	Classes/ week	Hours/ week	Obs
Overall	8	20	32	357
Province				
Bagmati	8	19	24	57
Gandaki	8	18	22.5	25
Karnali	7.5	24	18	26
Koshi	9	24	36	77
Lumbini	8	18	36	61
Madhesh	9	18	33	68
Sudurpaschim	8	18	36	43
Geography				
Tarai	8.5	18	36	173
Hilly	8	22	25	132
Mountain	8	24	24	52
Municipality Type				
Metropolitan City	8	20	20	17
Sub-Metropolitan City	8.5	18	38	12
Municipality	8	18	31	168
Rural Municipality	8	21	36	160

On average instructors' industry experience is quite low, with only quarter of them possessing any— the exception of note being Metropolitan Cities, where the rate of industry experience is 39%. Likewise, Metropolitan Cities have the highest rate of instructors holding industry jobs alongside their teaching positions at 22%. This rate is typically more than 10 percentage points higher than in any other municipality type and the overall mean of 12 percent.

Instructors in CEHRD schools are for the most part employed in temporary contracts, signed by three quarters of them. Figure 28.b) shows that the rate of temporary staff ranges between 70 and 88 percent for all municipalities; interestingly, employment is more secure in municipalities than cities, where fewer instructors are permanent. Table 7 indicates that the overall teaching load consists of 20 classes per week lasting 32 hours. These working conditions are similar across all provinces, geographical regions, and municipality types.

Figure 28: Majority instructors highest qualification (a) and instructor statistics by geographical characteristics (b) [CEHRD], n=359
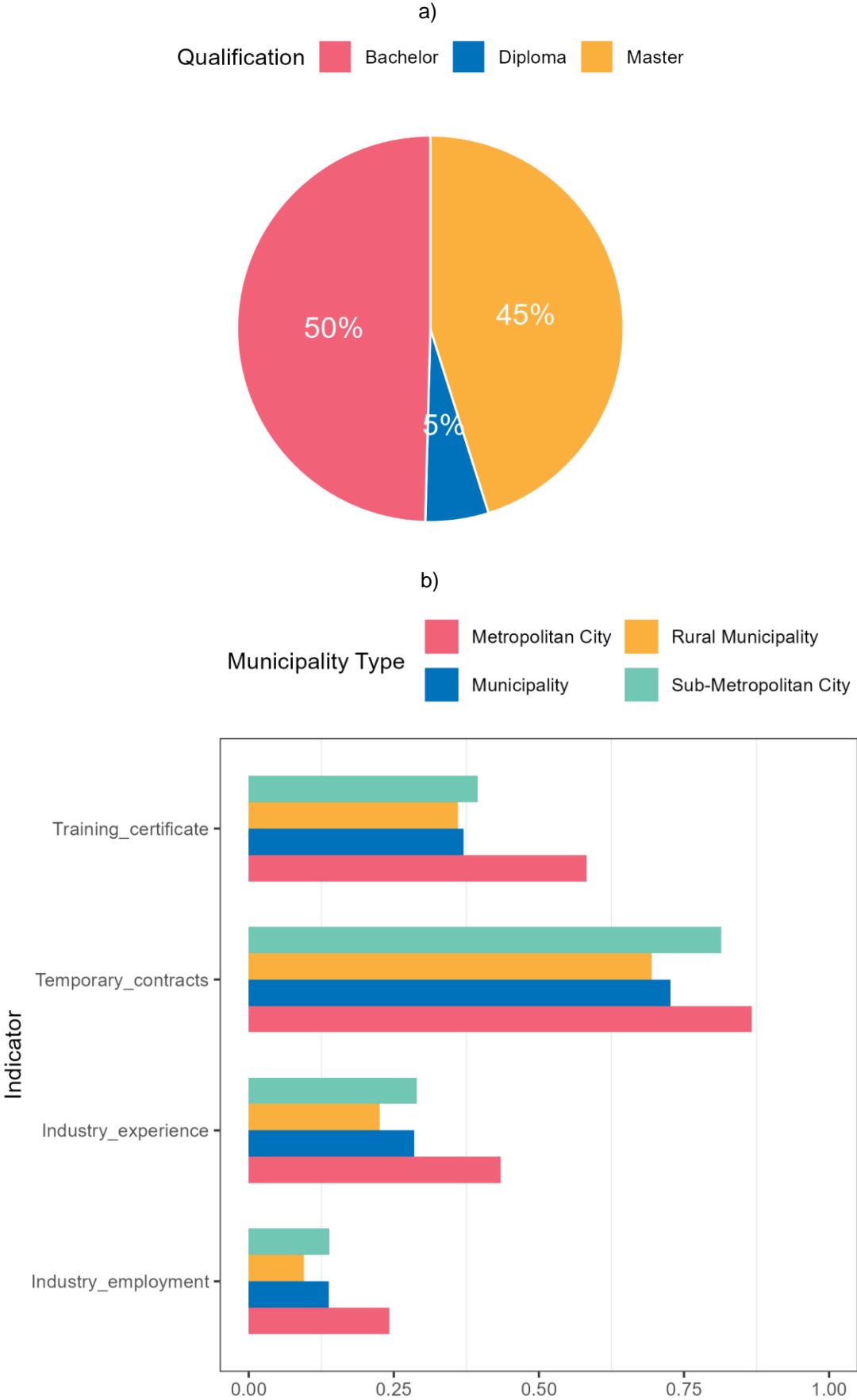
Note: *Training_certificate* is the rate of instructors holding a training certificated; *Temporary_contracts* is the rate of instructors in temporary contracts; *Industry_experience* is the rate of instructors with industry experience, *Industry_employment* is the rate of instructors employed in industry

4.7 Student learning

Learning

Most CEHRD students spend considerably longer in the classroom than in the workplace—almost double the time. This proportion is relatively constant throughout all municipality types (Figure 29.b), yet it varies more extensively across provinces. It is further important to note that due to labour regulations, most of the time spent in the workplace is observational, with little hands-on activity.

Figure 29: Student learning hour/week by province (a) and by municipality type (b) [CEHRD], n=359

a)

b)
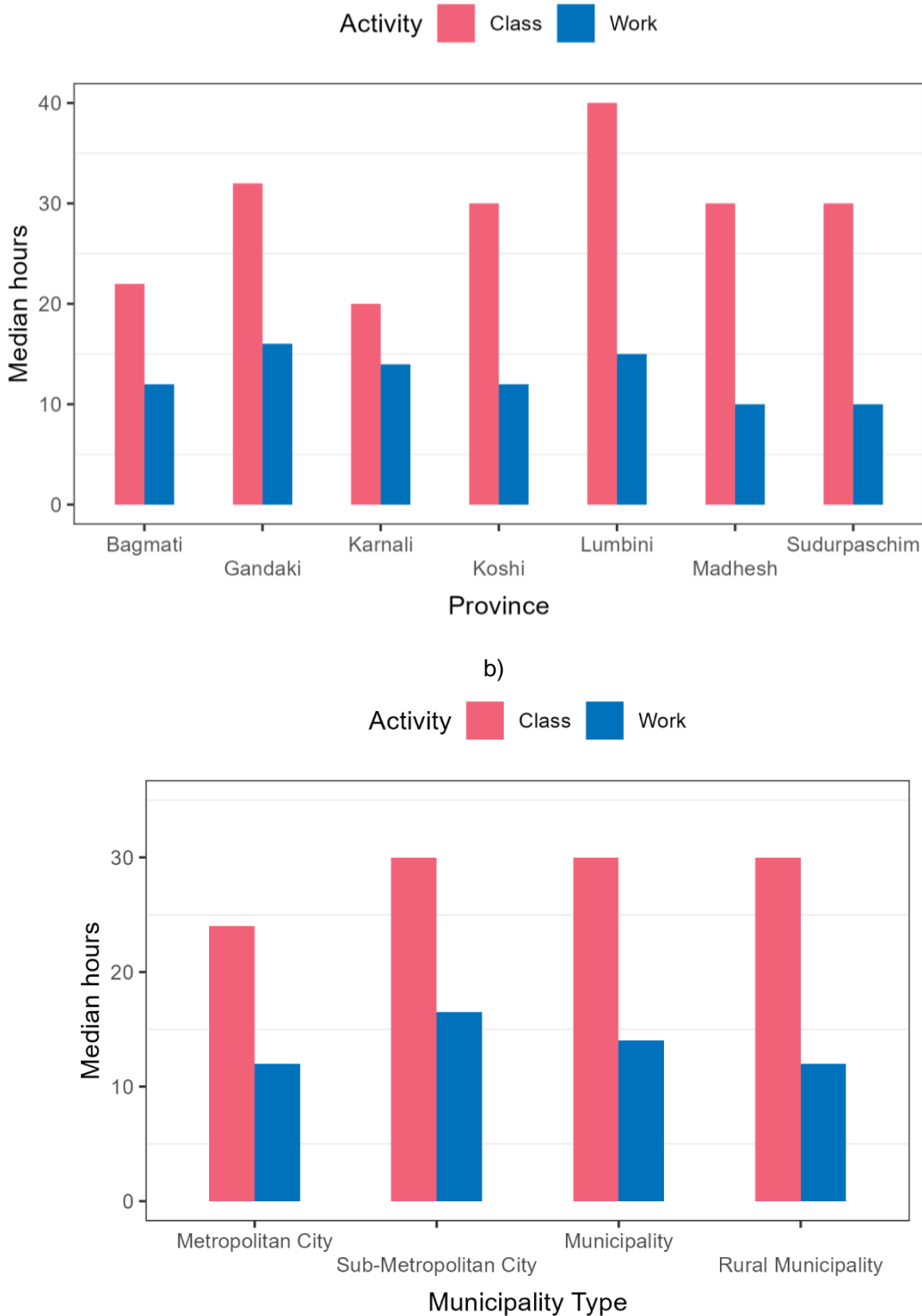
Lumbini has the most classroom activity with 40 median hours and only 15 of workplace learning (Figure 29.a). On the other end of the spectrum, Karnali presents the lowest difference between classroom and workplace with only 6 hours. This gap is four hours longer in Bagmati, where students attend 22 hours in class versus 12 at work. However, for the rest of the province the time spent learning in the classroom more than doubles the duration of the workplace experience.

Teaching procedures

Figure 30 depicts how often four essential practices in education are implemented in CEHRD schools, the practices in question are: whether instructors have access to the necessary teaching materials at all times, if they teach to a defined lesson plan and they receive training and support to develop it and, lastly, whether teachers are required to log their classes in a logbook.

Figure 30: Schools processes overall (CEHRD), n=359
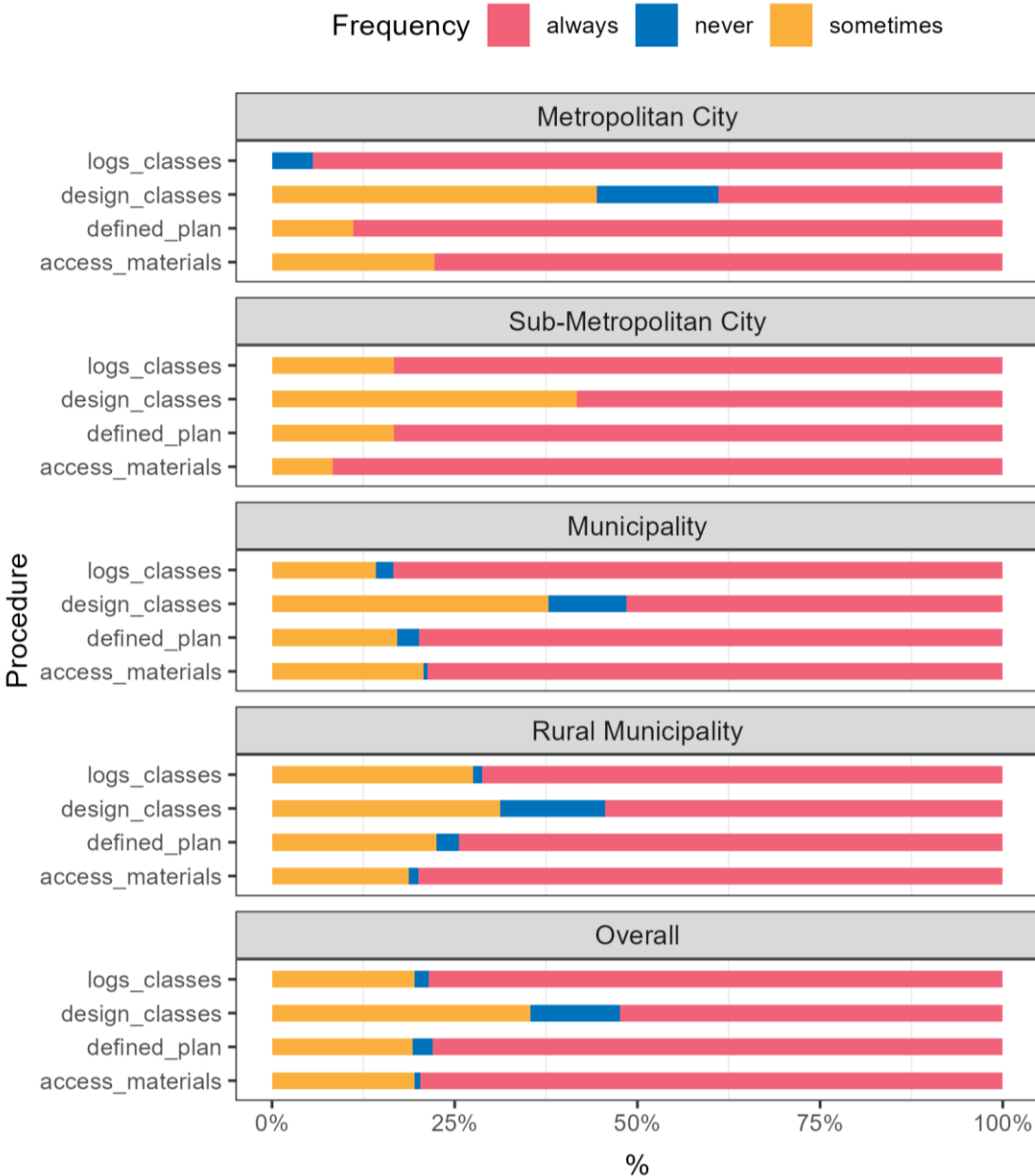
The 'Overall' pane of Figure 30 shows that they are all for the most part well-embedded in the school regular activities, with around 80% of schools consistently applying all of them. The notable exception is support for instructors in class design, which only a little more than half of the schools always comply with.

We can also see in the figure that the implementation of these practices is generally consistent across municipalities, although some are better at adhering to them. For instance, 92% of schools in Sub-Metropolitan cities consistently provide access to materials, compared to 78% in Metropolitan City schools, and 80% in the other municipalities. 89% of Metropolitan City schools also report always following a defined teaching plan, and 94% always logging their classes. Sub-Metropolitan schools follow these protocols slightly less frequently, at around 84%. Rural Municipality schools lag in these areas, with only 74% adhering to a defined teaching plan and 71% logging their classes. Additionally, as mentioned before, support for lesson design is the aspect where CEHRD schools fall short, with only around half the schools across municipalities providing this support at all times.

4.8   Funding

Sources

In Figure 31, we can see that the federal government through the CEHRD—the body within MoEST responsible for the schools—is the chief source of funding in the system by an enormous, albeit smaller, margin than one would expect. Schools rely on these resources to cover three quarters of their financial needs. The remaining costs are covered by other government

Figure 31: School funding overall (CEHRD), n=364
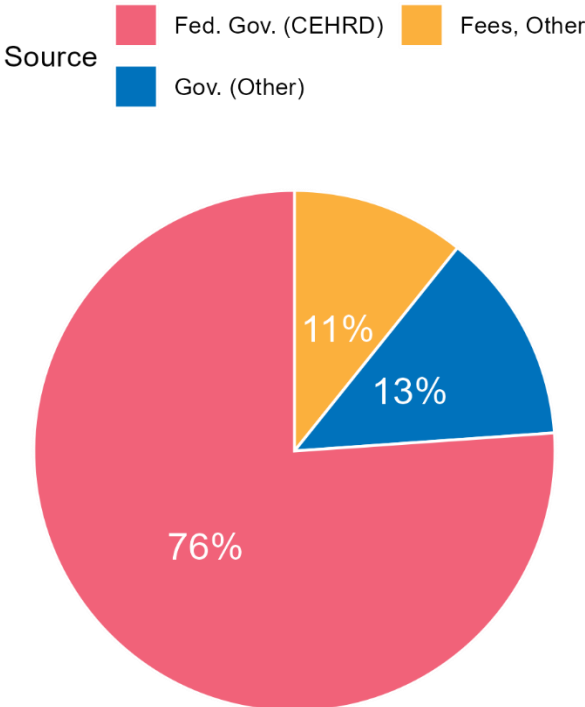
sources (13%), student fees (8%) and contributions from donors (3%). The fact that respondents indicate that student fees make up a small, but nevertheless substantial proportion of school income, is concerning in a school context where students should be receiving instruction free-of-charge.

Figure 32: School funding by province (CEHRD), n=364
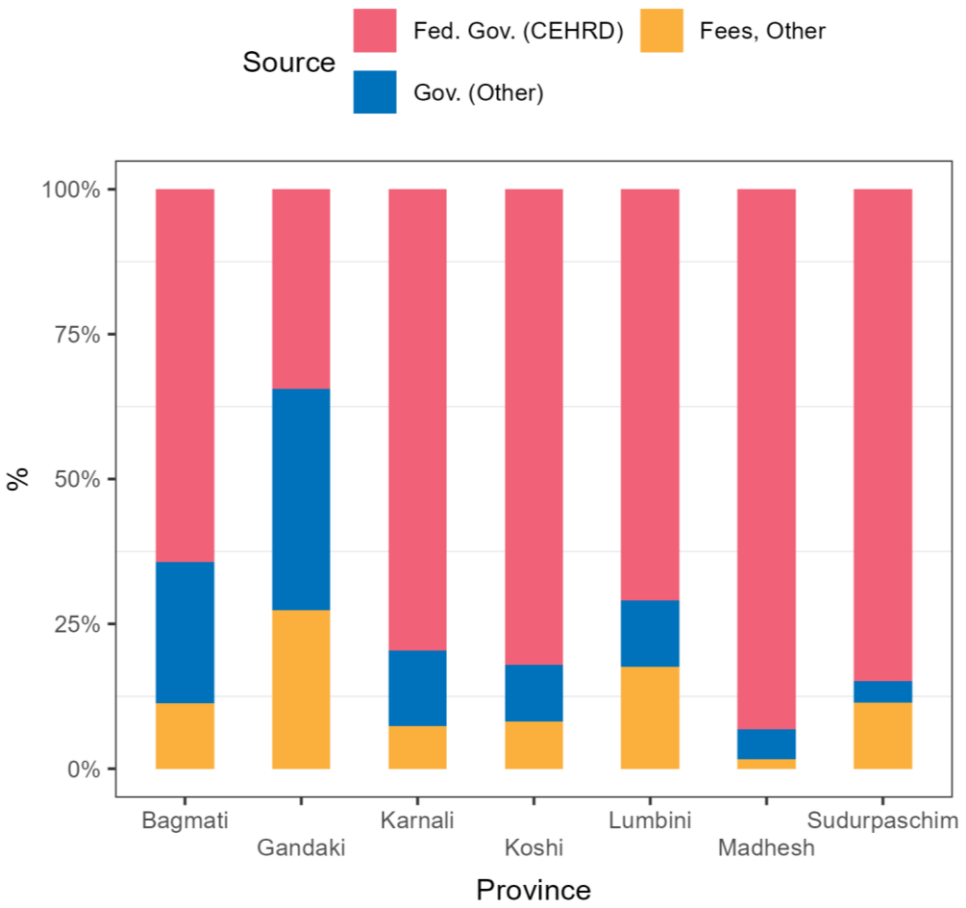
The funding portfolio of CEHRD schools is fairly similar across provinces and in keeping with the overall picture (Figure 32). Nevertheless, there are some noticeable differences across provinces. Funding is almost entirely dependent on the CEHRD in Madhesh (93%), which contrasts with the relative independence of Gandaki's schools from this body; the latter province derives most of its funding from other government sources. The rest of the provinces mimic to a large extent the general distribution of sources in the country described in Figure 31).

Schools in Sub-Metropolitan Cities are nearly entirely funded by the CEHRD (Figure 33), with only 8% of their budget coming from other government sources and even less (2%) from their own resources. Schools in other municipality types present similar funding portfolios, slightly more balanced in the manner of the country as a whole.

Figure 33: School funding by province municipality type (CEHRD), n=364
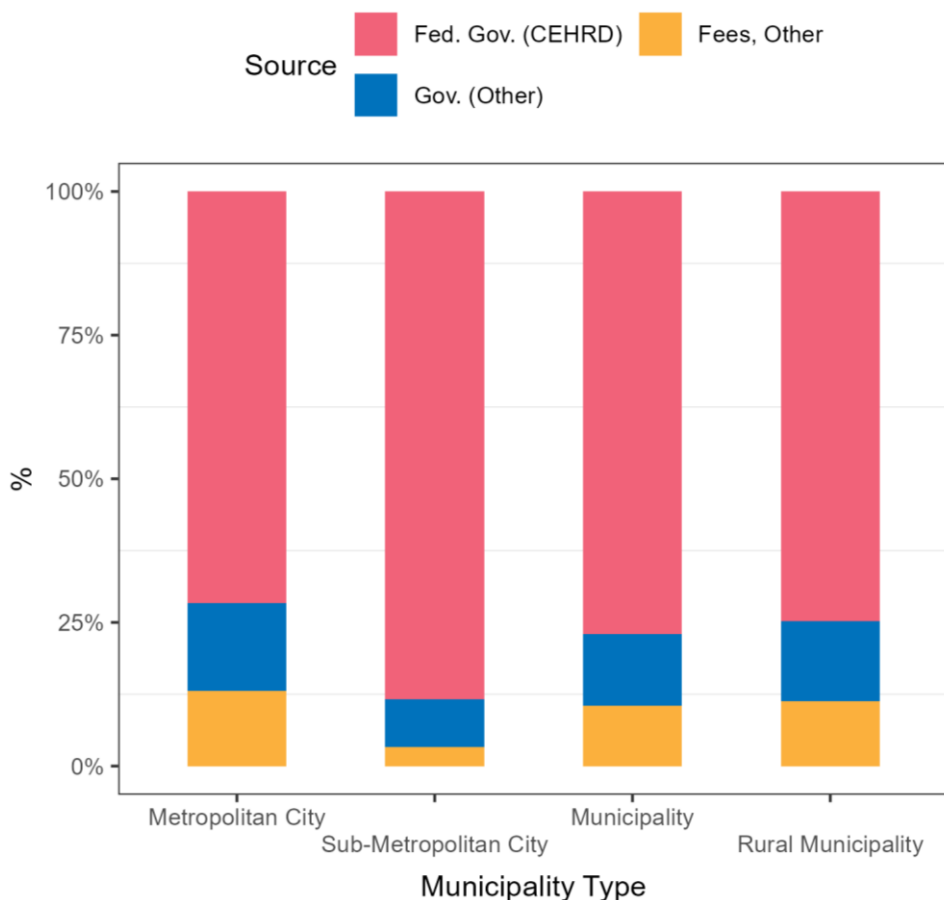
Problems

Table 8 indicates that 70% of CEHRD schools in Nepal keep balanced budgets and possess sufficient funds at their disposal. Among the 30% of schools facing financial issues, half of them reported a deficit of 900,000 rupees or more in the last financial year (Figure 34.a)).

There is notable variation in the financial situation of schools across provinces. Schools in Koshi and Lumbini are in relatively good financial health, with 78% and 87% respectively having sufficient funds (Table 8). Other provinces, excluding Gandaki, range from 60% to 78% in terms of meeting their financial needs. Gandaki, however, lags significantly behind, with only about 44% of schools securing adequate funding.

Table 8: Funding statistics (CEHRD)

Variable	Sufficient funds		Shortfall (NPR)	
Category	Mean	Obs	Median	Obs
Overall	70%	359	900,000	107
Province				
Bagmati	66%	59	1,100,000	20
Gandaki	44%	25	1,050,000	14
Karnali	77%	26	850,000	6
Koshi	78%	77	1,000,000	17
Lumbini	87%	61	550,000	8
Madhesh	60%	68	900,000	27
Sudurpaschim	65%	43	500,000	15
Geography				
Tarai	72%	174	1,000,000	49
Hilly	68%	132	600,000	42
Mountain	69%	52	1,400,000	16
Municipality Type				
Metropolitan City	67%	18	1,000,000	6
Sub-Metropolitan City	92%	12	450,000	1
Municipality	64%	169	1,000,000	61
Rural Municipality	76%	160	600,000	39

Table 8 also suggests that schools at different geographical regions are in a comparable financial situation, funding currently obtained is sufficient for 72% of schools in the Tarai region, followed by 69% in Mountain areas and 68% in Hilly districts. Sub-Metropolitan schools are the most solvent, with 92% of schools having sufficient funds, Rural Municipalities follow with 76% of schools in good financial health. On the other hand, Regular Municipalities and Metropolitan Cities present the lowest percentages of sufficient funding, at 64% and 67%, respectively.

The shortfalls in the system lead to various issues in the affected schools, as shown in Figure 34.b). The most common problem due to insufficient funds is the lack of teaching resources, which impacts the learning experience in 72% of schools. Additionally, 57% of schools report poorly maintained facilities, and 46% face difficulties to enrol students in their desired courses. Instructors are also significantly affected by the lack of funding, as it reportedly prevents them from being hired permanently in 57% of the struggling schools, and also from being hired fulltime (44%), and forces them to work overtime (45%).

Figure 34: Amount funding shortfall (a) and problems (b) [CEHRD], n=107
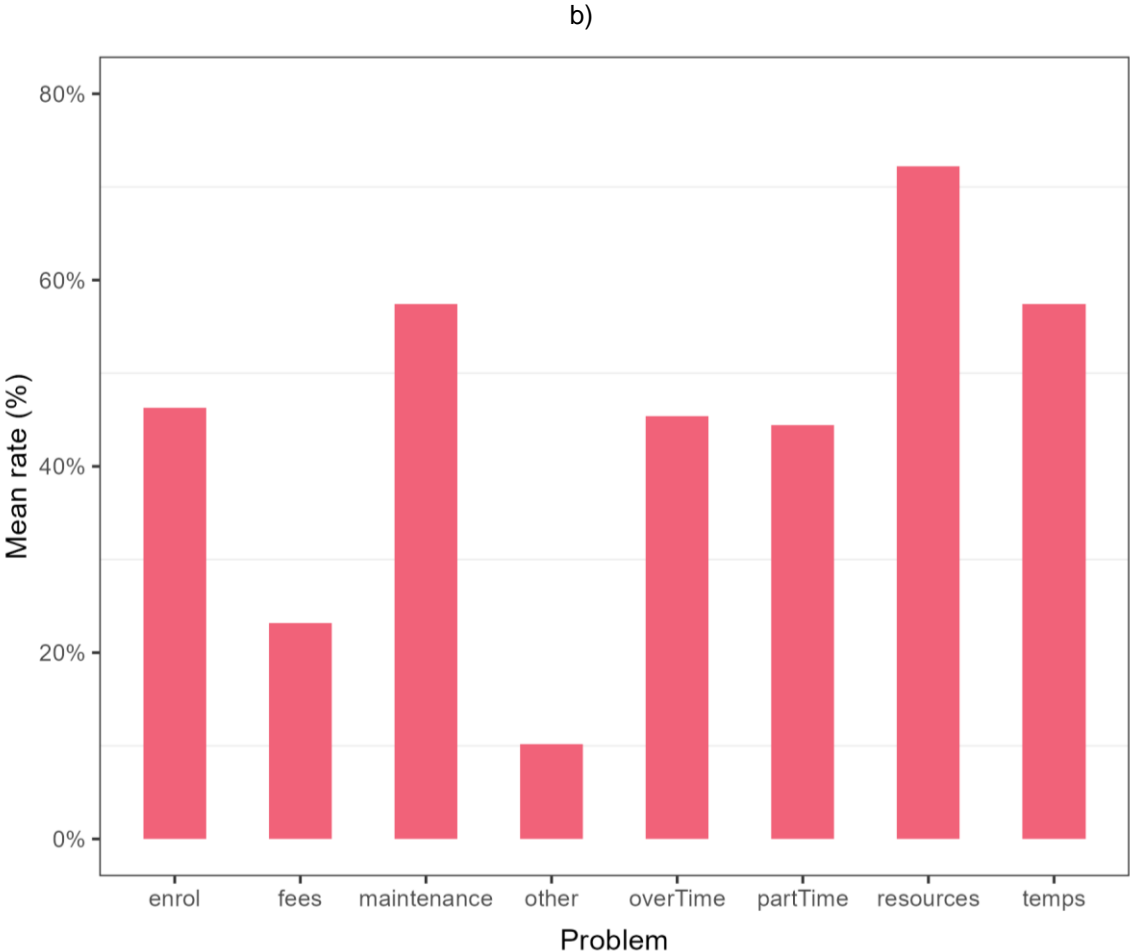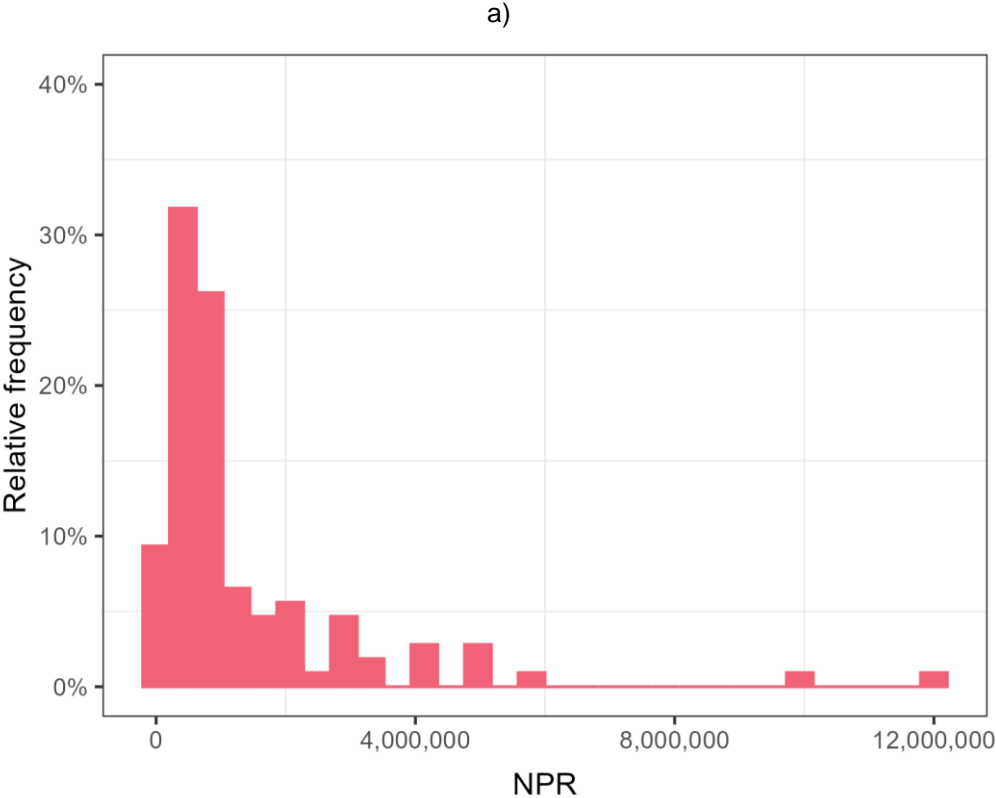
Note: *enrol* enrolment problems; *fees* increase of fees; *maintenance* unable to keep infrastructure; *overTime* instructors take extra classes; *partTime* forced to hire instructors part-time; *resources* lack of resources to teach; *temps* forced to hire instructors in temporary contracts.

5   Governance of TVET

5.1   Satisfaction with governance

In a separate part of the survey, administered to all schools as well as to all the representatives of provincial and local governments and many employers' associations, we asked a series of questions concerning the satisfaction of respondents with the governance of TVET in Nepal, as well as the intensity of, and satisfaction with, relationships with other actors in the system. The questions were an adapted version of those used in Renold et al.'s (2019) investigation of governance of TVET in Switzerland.

We asked respondents to indicate their satisfaction over 10 *dimensions* of TVET in Nepal, each containing several *items* related to specific elements of the governance within the dimension. Respondents could rate each from 1—not at all true—to 5, completely true. The items are deliberately formed so that we may ascertain satisfaction from an objective evaluation of the system by respondents—whether a statement is true or not—rather than asking for subjective satisfaction. The average scores, and standard errors, of all dimensions and items are reported in Table 9.

In general, respondents report moderate-to-high satisfaction with TVET governance in Nepal. Dimension scores rate between 2.94 and 3.17 on the 5-point scale, suggesting that no single dimension stands out as more or less satisfactory for respondents. The standard errors of each of the dimension averages indicate that approximately 95% of responses fall between 2 and 4 on the scale.

More variation can be found in the individual items. Here, scores vary between 2.61 and 3.72, suggesting that the dimension scores are masking more variation in satisfaction within individual items.

The first dimension, **nationally uniform approach**, scores 3.13. Respondents are most satisfied here with *clear national standards for TVET quality and accountability* (3.18), and least with *a single institution coordinates all TVET programs and providers* (2.61). Next, **system renewal** (2.94) refers to the frequency and relevance of development and updating of the system. Here, respondents express most satisfaction with *results of evaluations are used to improve TVET in the future* (3.08), while least so with *TVET is evaluated against important political goals* (2.73).

Information between policy areas (2.98) concerns sharing and coordination between relevant actor groups. All item results for this dimension fall in a narrow range between 2.9 and 3.08. **Information interface** (2.98) refers to the consistent applications of standards and, where relevant, access requirements to education at all different levels. Items in this dimension

show a larger spread of satisfaction, from *higher education institutions offer non-formal programs* (2.73) to *there are uniform education standards for academic secondary* (3.64).

Important in the context of Nepal's federalisation process is the **information between political levels** (2.97). In this case, respondents are most satisfied with *actors' scope of action is closely defined by legal requirements* (3.32), while less so with *TVET leadership uses information campaigns to publicise innovations in the system* (2.94). **Funding** (3.04) shows a larger variation between *TVET providers are expected to achieve set standards in order to maintain funding* (3.39) and *TVET providers receive funding regardless of performance* (2.66).

The **apprenticeship market** (3.17) refers to whether or not apprenticeship or workplace learning places are determined by the local market rather than arbitrarily defined. All item results on this dimension are within a very small band around the overall mean. Quite a wide range in responses is seen in **quality** (3.17), from *training and further education is always available for TVET teachers and instructors* (2.88) and *students earn certificates when they master clear learning outcomes and standards* (3.72).

Information for the apprentices (3.09) shows some discrepancy between *career guidance and counselling is consistent throughout Nepal* (2.77) and *TVET students are aware of their employment prospects* (3.06). Finally, concerning **permeability** (2.95), there is a difference between *all formal education/TVET institutions do recognise informally and non-formally acquired learning* (2.86) and *there are clear next steps (e.g. further/higher education) for all academic and TVET programs* (3.33).

5.2   Satisfaction with network relationships

Survey respondents were also asked to indicate which other actor groups they interact with, and how satisfied they are with these relationships. Results for these items are shown in Figure 35, where relationships are stylised as curves between the actor groups. Thicker curves denote stronger relationships, thinner curves weaker. Red curves denote unsatisfactory relationships, while shades of green are more satisfactory and yellow moderately so. The actors are assigned to a level of governance—we duplicate employer associations and chambers of commerce, as it is not always clear whether these are national, provincial, or local.

"Bottom up" relationships are in general seen as **more intense** than "top down" ones, and overall more satisfactory, although there is some variation here. In general, schools and TVET institutions are satisfied with their relationship to the national government, but less so with interactions with provincial or local governments. Schools report very little interaction with each other and are less satisfied with those they do have. Conversely, employer associations report considerable interaction and are generally satisfied.

Table 9: Dimension and item scores, governance satisfaction, n=1,502

Dimension	Items	Score	*Standard error*
Nationally uniform approach		**3.13**	***0.94***
	TVET is governed by a single set of rules.	2.98	1.22
	Occupational profiles/curricula are nationally consistent.	3.08	1.17
	A single institution (e.g. Ministry) coordinates all TVET programs and providers	2.61	1.13
	All of the relevant actors (e.g. chambers of commerce, TVET schools, etc.) are included in TVET governance	2.76	1.04
	All TVET actors have clear roles and responsibilities	3.10	1.03
	There are clear national standards for TVET quality and accountability	3.18	0.97
	Companies cooperate with TVET schools to offer training.	2.84	1.05
	Disadvantaged groups are specifically encouraged to take part in TVET	3.15	1.01
System Renewal		**2.94**	***0.77***
	TVET is consistently updated and developed	2.84	0.99
	TVET curricula/profiles are consistently evaluated and updated	2.95	0.95
	TVET is evaluated against important political goals	2.73	0.97
	The results of evaluations are used to improve TVET in the future	3.08	0.96
Information between policy areas		**2.98**	***0.76***
	TVET goals apply to all relevant policy areas: education, the economy/business, the labour market, and social policy.	3.05	0.87
	The actors involved in VET/PET represent all relevant policy areas.	2.96	0.90
	Actors from various policy areas regularly communicate through institutionalized dialogue mechanisms	2.90	0.87
Interface management		**2.98**	***0.79***
	There are uniform education standards for primary schools.	3.61	1.00
	There are uniform education standards for academic secondary.	3.64	0.95
	There are uniform education standards for TVET secondary schools.	3.41	0.97
	The entry requirements for education pathways are consistent all over Nepal.	3.35	1.05
	There are formal tertiary-level TVET degrees available.	3.18	1.04
	The lead authority for tertiary TVET coordinates with the lead authority in the higher education sector.	2.99	0.96
	There are non-formal further education programs available.	2.99	1.01
	Higher education institutions (e.g. universities) offer non-formal programs.	2.73	1.07

Dimension	Items	Score	Standard error
Information between political levels		**2.97**	*0.76*
	The legal framework clearly separates the processes of setting standards and implementing them.	3.16	0.88
	Actors' scope of action is closely defined by legal requirements.	3.32	0.94
	TVET tasks are appropriately distributed among levels of government.	3.14	0.96
	Occupational standards and curricula are developed nationally, while training plans are provincial.	3.17	1.00
	Learning places (e.g. schools, companies) have autonomy in the implementation of their training.	3.12	0.94
	Incentives and the legal framework promote cooperation to build TVET system infrastructure.	3.20	0.93
	TVET leadership uses information campaigns to publicize innovations in the system.	2.94	0.98
Funding		**3.04**	*0.88*
	TVET providers receive funding per student	3.01	1.17
	TVET providers receive funding for teachers, materials, etc.	3.14	1.10
	TVET providers are expected to achieve set standards in order to maintain funding	3.39	1.11
	TVET providers receive funding regardless of performance	2.66	1.07
	The appropriate ministry monitors companies' costs and benefits from training	2.88	0.99
	Employer associations or chambers of commerce help manage the system	2.70	0.99
Apprenticeship market		**3.17**	*0.77*
	Students choose their TVET occupations based on what their local TVET school offers	3.22	0.93
	Students choose their TVET occupations based on what local companies offer	3.19	0.89
	TVET providers offer places based on whether employers can offer workplace learning	3.14	0.94
	TVET leadership tries to fix imbalances in training supply and demand	3.14	0.94
Quality		**3.17**	*0.77*
	TVET curricula are adapted to the labor market and set as national standards	3.20	0.92
	Students earn certificates when they master clear learning outcomes and standards	3.72	0.96

Dimension	Items	Score	Standard error
Quality (cont.)		**3.17**	*0.77*
	Examinations allow for different routes to mastery	3.65	0.94
	Students earn certificates based on attending all required courses/modules	3.41	1.12
	TVET graduates can expect their qualifications to be recognised on the labour market	3.58	0.89
	Quality standards are set and implemented by the national TVET authority	3.50	0.87
	Quality standards are set by the national TVET authority and implemented locally	3.43	0.94
	TVET teachers and instructors must meet nationally prescribed standards	3.63	0.93
	Training and further education is always available for TVET teachers and instructors	2.88	1.02
Information for the apprentices		**3.09**	*0.74*
	Career guidance and counseling is consistent throughout Nepal.	2.77	1.06
	All students have access to career guidance and counseling.	2.79	0.98
	TVET students are aware of their employment prospects.	3.06	0.93
	Secondary TVET is free of charge for all	2.99	1.16
Permeability		**2.95**	*0.84*
	There are transparent admission and completion standards for TVET.	3.21	*0.84*
	There are clear mechanisms for moving across academic and TVET programs at the secondary level.	3.22	0.92
	There are clear mechanisms for moving across academic and TVET programs at the tertiary level.	3.21	1.00
	There are clear next steps (e.g. further/higher education) for all academic and TVET programs.	3.33	1.00
	All formal education/TVET institutions can recognize informally and non-formally acquired learning	3.06	0.97
	All formal education/TVET institutions do recognize informally and non-formally acquired learning	2.86	1.00

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 how much variation there is around the average for each item. The number of observations ranges from 1492-1502 depending on the item.

Figure 35: Governance network in Nepal, n=1,502
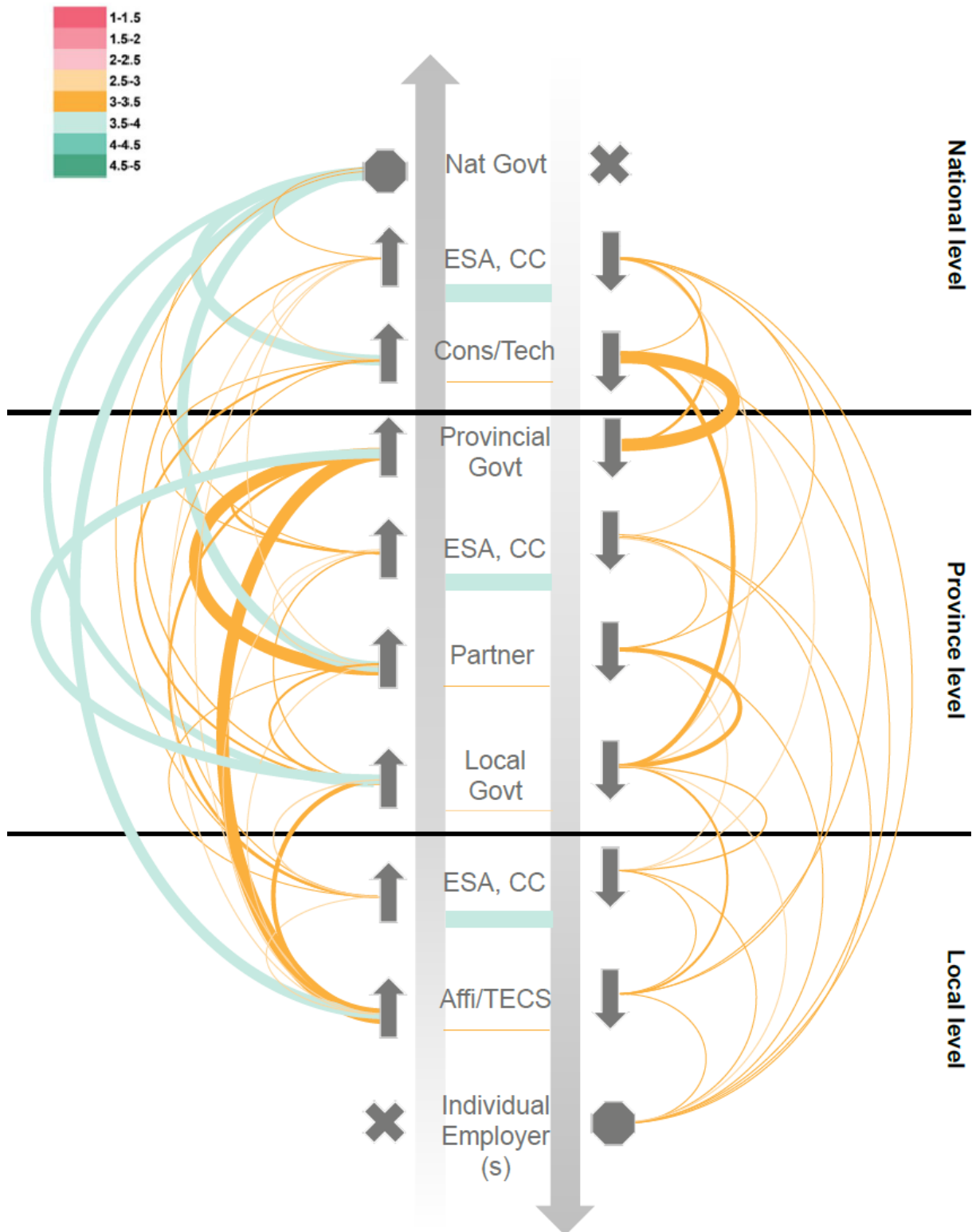
6   Data Quality Issues

This research has faced number of systemic challenges which we report in the following section. The major issues can be categorised into problems with the provided data and difficulty with collecting information.

One of the main stumbling blocks the QualiTY project has encountered is the **lack of a reliable identification system of schools** in Nepal. This problem manifests most tangibly in the absence of unique identifiers, common names and locations for the schools in the data employed by the different actors, included the authorities tasked with overseeing the network of TVET schools. In practice this issue has led to widespread ambiguity about the identity of the specific schools present in the different data sources employed in the QualiTY project. This problem is compounded by the fact that school locations do not appear to be compiled in any central repository. Moreover, the names and identity of the school locations were not uniform across the data sources, which complicates further the identification of schools. CES resorted to mitigate some of these issues by assigning unique identifiers to all stakeholders, including schools, and painstakingly compiling the administrative units they belonged to, with the assistance of KUSOED.[3] Nevertheless, these efforts are only emergency solutions which should not mask the necessity of an official central database of schools, with consistent names and precise geo-location.

An additional feature of this database ought to be updated **information about schools which are active or, conversely, closed**. As reported in the data section, almost a fifth of the missing data is due to school closures; furthermore, 8% of TVET schools reported null enrolment rates. The lack of valid contact details was responsible for 36% of schools which were not interviewed, which speak volumes about the complete isolation of some of these centres and the absence of any oversight. Updated contact details should be available to the authorities that supervise the operations of the schools, and in many cases, provide them with funding. Accreditation procedures may mitigate these issues in the future as the government sets defined operational standards.

The ceSoed consortium also had to deal with **the refusal of numerous schools to respond the survey**, which accounted for more than a third of the missing responses. Unfortunately, the reasons for refusing to take the survey were not systematically recorded and we are unable to learn from these issues, an aspect we will strive to improve on henceforth. Support from education authorities in legitimising the survey and ensuring that school staff are prepared to answer the survey would go a long way in increasing response rates and preparedness.

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[3] We employed lists of administrative units from official sources like the Humanitarian Data Exchange (OCHA, 2024), and verified the school locations by going through local sources (e.g. municipality websites).

On numerous occasions, our enumerator team recorded unfeasible data, like rates which added to more than 100% or weekly hours which accrued to more hours than a week contains. These instances were minor but non-negligible, and they point at errors in the data collection, or at spurious data kept or provided by schools. The latter possibility is corroborated by anecdotal evidence on poor record keeping at the school level, which merits further investigation in future research.

7 Conclusion and Recommendations

The preceding sections have provided a comprehensive picture of the Nepali TVET system. Here, we reflect on the most important lessons and consider the implications for the TVET school system.

TECS and Private schools constitute the bulk of TVET schools (i.e. CTVET-affiliated), with a combined 90% of the sample, excluding CEHRD schools with technical stream programs which we discuss later. Generally speaking, schools are distributed evenly across the country, with the exception of Bagmati, which contains 20% of the schools, 5 percentage points more than any other province. This may be explained by a higher concentration of schools in the region that is closest to CTEVT national headquarters. Almost half the schools are located in Regular Municipalities, typically in the Tarai lowlands, while a quarter of them are in Rural Municipalities and the rest in Metropolitan Cities. The characteristics highlighted indicate that the typical TVET school is run by the community or privately, located away from the bigger urban centres and in the lowlands.

While courses are offered in six categories, the vast majority of programmes are in Engineering, Health and Nursing and Agriculture: the first two categories make up three quarters of the programmes available and have roughly equal weight, whereas agricultural programmes represent about a fifth of the offer. This picture changes substantially when we look at the programmes offered by each type of school and in every kind of municipality. For example, Private schools chiefly run Health programmes and TECS Agriculture ones. In a similar vein, Metropolitan Cities train mostly health professionals and Rural Municipalities focus on agricultural degrees, which is broadly in line with labour market requirements in each.

Underused capacity

We can safely assert that TVET schools possess considerable capacity to cover demand for enrolment, given that enrolment rate across programmes and schools is only slightly more than half of the available capacity on average. TECS, especially, report very low enrolment rates—8 to 18 percentage points lower than other school types—despite having less than half the average capacity of other school types. In addition, we found that there is a considerable difference—20 percentage points—between enrolment in cities and Rural Municipalities, in favour of the former. In general, women made up half of the cohorts enrolled and classified groups a quarter; rates that are fairly stable across schools of all types and locations. These results point to a well of underused capacity which can explain in part the financial problems affecting the system, well-documented in this report.

The weak demand for enrolment may partly stem from the perceived inefficiencies in the system, which fails to produce graduates at a sufficient rate. On average only 40 percent of TVET students managed to graduate during the last completed year in Nepal. Furthermore, over a third of the schools had no graduates in the last completed year, with no students receiving a

diploma in the period. The picture is fairly consistent across schools with disparate characteristics, even though some differences exist across school types—Constituent and Private schools attain graduation rates 10 points higher than the rest, and more than half of their students manage to graduate in the majority of the cases.

Instructors

Instructors are a focal figure in education and their circumstances shed light on the functioning of the TVET system. The vast majority of them appear sufficiently qualified to perform their role, yet they typically lack industry experience. Their numbers are much lower in TECS schools, which employ almost a third of the instructors than the others do. According to their managers, most instructors teach 25 or more hours per week (i.e. 8 hours per day in a 5-day working week), and these long working hours—which do not include preparation or administrative duties—are carried out for three quarters of them in temporary positions. These findings denote the poor working conditions instructors bear, which likely lead to the high rotation levels endemic to the system that diminish the quality of teaching and might also be impacting negatively graduation rates. These concerns about the quality of the instruction are particularly important when one takes into account that student learning is predominantly classroom-based rather than practical, since students spend double the time learning in class than in the workplace.

Funding issues

We also learned that TVET schools rely chiefly on their own income generating activities—mostly fees—to fund their operations, but that public funding still plays a vital role nonetheless for all school types save for private institutions. Constituent schools are unique in that they obtain most of their funding from public bodies, especially, the CTEVT that runs them. While the sources of funding are varied, a common aspect in the system is that they are insufficient to meet the financial needs. Our data highlights the existence of widespread financial struggles across schools, with less than half obtaining sufficient funding to cover their costs. Although the financial stability of schools differs depending on their type and location, the proportion of institutions in trouble remains substantial by any metric and their deficits are sizeable, amounting to a million rupees or more for half the embattled institutions. One can infer from these financial figures that Nepali schools spend resources beyond their means given the deficits run and, more importantly, judging by the results they achieve in terms of enrolment numbers and graduation rates.

CEHRD Schools

As part of our research, we also collected data on CEHRD schools, which run technical stream in conjunction with general education courses within their programmes, as opposed to an exclusive technical curriculum as TVET schools do.

CEHRD-affiliated schools present important differences with respect to TVET schools beyond the content of their programmes. This type of schools are much smaller in number than TVET

schools, with less than half the institutions, and are located to a much larger extent in Rural Municipalities, away from metropolitan areas. Their offer consists mostly of engineering courses (60%), while the remainder are on plant or animal science.

CEHRD schools are remarkably homogenous in contrast with the heterogeneity found among TVET exclusive schools. Their capacity of their programmes is almost the same at around 50 students across all categories, as are their workforces of 8 instructors at the median. Enrolment rates are also fairly uniform, and substantially higher than TVET schools—by close to 20 percentage points overall. CEHRD greatly outperform TVET schools in the number of students graduating too, while the rates are more variable than for other indicators, especially across provinces, the overall difference is of more than 30 percentage points.

CEHRD schools are also on a much firmer financial footing than other TVET schools, with the majority of their funding flowing directly from the MoEST. However, we note that in the survey, CEHRD schools indicated they received on average 8% of their funding from school fees, even though in principle, access to these schools should be free of charge. This finding therefore requires further investigation.

Governance and networks

We analysed how the actors involved in the governance of TVET interact with one another and their satisfaction with the key elements of strong TVET governance. Actors are middlingly to moderately satisfied with their interactions and relationships with other stakeholders. There are two important nuances to this overall finding. First, relationship satisfaction is asymmetrical. On the whole, institutions placed more locally are more satisfied with their relationships with higher-level partners than the reverse. Conversely, actors from federal and provincial level are on average less satisfied with their relationship with those actors at lower levels of government.

This asymmetry is repeated in the second nuance: actors from more local levels report more intense relationships with the stakeholders at higher government levels, though there is some exception with relationships between schools and provincial governments. This suggests that there may be some link between encouraging deeper relationships and the level of satisfaction with interaction between stakeholder groups.

Satisfaction with the various elements of TVET governance is also moderate. While the variation between different areas is small, strong points are the nationally uniform approach, apprenticeship markets and quality, while weaker areas are information sharing and coordination between government levels. In light of the federalisation process, improvement in these areas may make a great contribution to strengthening the governance of the TVET system in Nepal overall.

Caveats

We underline two important caveats to our research. The first concerns CEHRD schools, which are in many ways incomparable to the other school types in the research. This is largely because these schools offer technical stream courses as a part of general education programmes, not complete TVET programmes. As such, the data collected on these schools may not be completely reliable— we are unable to exclude the possibility that respondents commented on the school as a whole, rather than the programme specifically, though questions were geared towards individual programmes.

Secondly, our unit of analysis is at the school level. This makes sense in as much as the aim of the study is to understand the institutional arrangements of the TVET system in Nepal at the beginning of a four-year study. This focus on the school level should not be taken as an estimation of the experience of the "average" TVET participant in Nepal. Our analysis suggests that the weakest schools, in terms of the filled capacity, graduation, financing, and quality of teaching, are also the smaller ones, generally TECS, while larger schools are more able to fill their enrolment capacities, have higher graduation rates and struggle less with financial issues. The median student, is therefore, in a higher-quality TVET institution than the median TVET institution.

Recommendations

The above findings have implications for the Nepali TVET system going forward and the strategy to adopt, which we argue should be threefold. First, schools ought to streamline to avoid offering courses that are poorly attended and of low quality, a measure that could have an immediate impact on financing issues. Such course of action may imply that schools cut back on the number of programmes they offer, or more likely, that the smaller schools which struggle to attract students and are not financially viable be closed or merged to ensure a more effective use of resources; although considerations of accessibility should be taken into account in these decisions.

The second strand of the strategy would be to set carefully considered plans in place that ensure TVET institutions are on a firmer financial footing, since even comparatively financially stable institutions tend to report financial shortfalls, albeit smaller ones. A stronger focus on industry collaboration or substantial exposure to work-based learning may render TVET programmes more attractive, by introducing more practical components. It would also help cut costs for schools, as they would require fewer capital investments in equipment and materials for practical learning, which could instead take place more consistently in the workplace. This funding could then be redirected to other parts of school operations, helping to alleviate some financial pressures.

In addition, TVET instructor careers should be made more attractive by offering better working conditions, more opportunity for permanent contracts and less time spent in the classroom. Again, fostering industry partnership is likely to be part of the solution here— if participants can

spend more time in the company, teachers can spend more time focusing on theoretical elements, reducing classroom time and therefore allowing more time for administration and preparation. Our research shows that companies are open to participating in training under the right conditions (Renold et al. 2024a, 2024b). The Nepali TVET system should grasp that opportunity.

Nevertheless, to tackle all these challenges and implement the proposed strategies, TVET acts must be enacted at both the federal and provincial level. Furthermore, the CTEVT must be restructured in accordance with Nepal's Constitution, which implies that CTEVT shall not be involved in the running of schools, but rather act as the watchdog on TVET in the country.

Our research also unveiled several systemic issues regarding the quality of the data on the TVET school system. First and foremost is the lack of a reliable identification system of schools in Nepal, which casts doubt about the capacity of any actor to accurately define a given institution in a manner that is unambiguous to any other actor in the system. Such uncertainty calls for the development of a central database of schools, with consistent names and precise geo-location. Moreover, this database ought to contain updated information about the schools that are active or, conversely, closed; the latter was a major reason for missing data in our study. CTEVT as the apex institution for TVET in Nepal is uniquely placed to lead this effort.

The data collection team had to deal with the refusal of numerous schools to respond to the survey, in some cases because they did not consider the sharing of data about their institutions as a duty to the education system they are part of. Such behaviour could be mitigated by stronger support from the authorities in legitimising the research, whose main objective is no other than contributing to the improvement of TVET for the entire country. More vocal official support, such as from the CTEVT, can contribute to both improve the preparedness of school staff to answer the survey and increase the response rate.

The quality of the data we managed to collect was sometimes marred by unfeasible values recorded. While these issues might be in part due to errors in inputting the data, they could also point to spurious data kept or provided by schools, which merits further investigation.

Finally, in view of the federalisation process in Nepal, policymakers and stakeholders should take note of the apparent provincial differences in many of the school results. Many of the indicators that are linked to school quality—capacity filled, teacher provision, graduation rates and financial situation—vary considerably by province. More research is required to understand the extent to which these differences are expressly due to provincial factors or if they are more related to other reasons. Nevertheless, clear focus should be on ensuring that outcomes are comparable across the country and providing support to provinces where required to ensure all of them are on equal footing.

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Appendix

Additional figures

Figure A1: EMFQ Direction dimension by School type, n=824

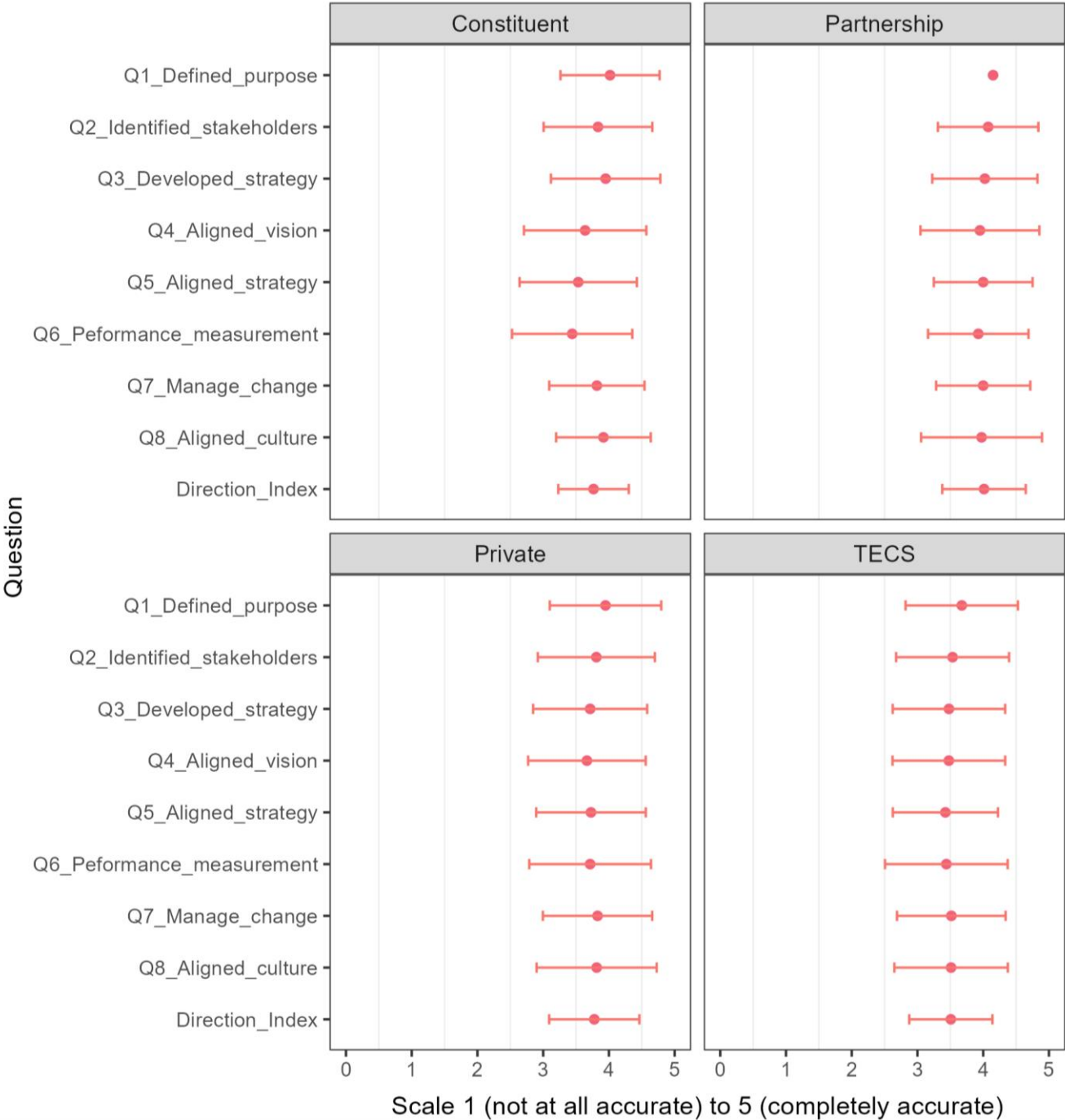Scale 1 (not at all accurate) to 5 (completely accurate)

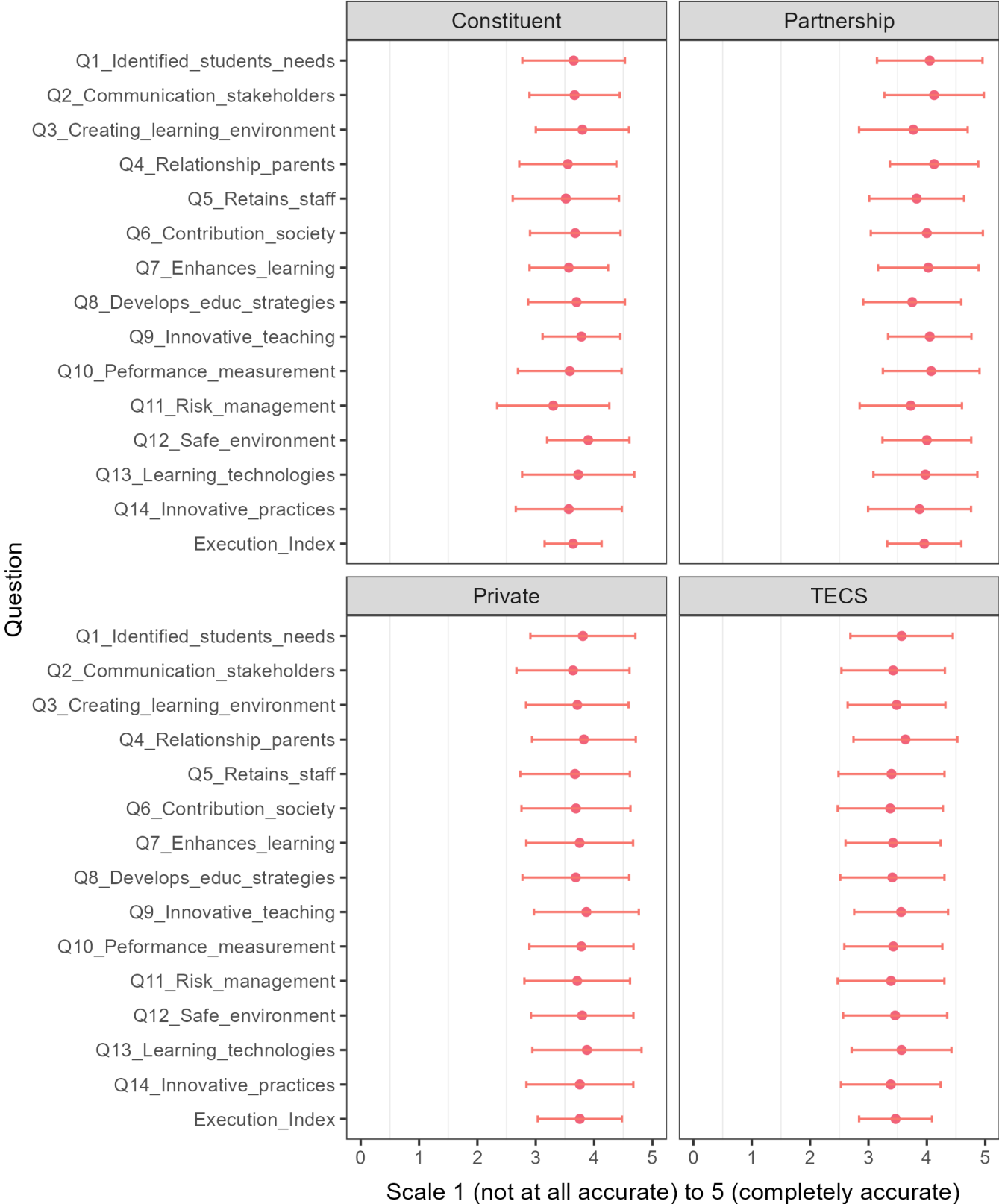Figure A2: EMFQ Execution dimension by School type, n=824

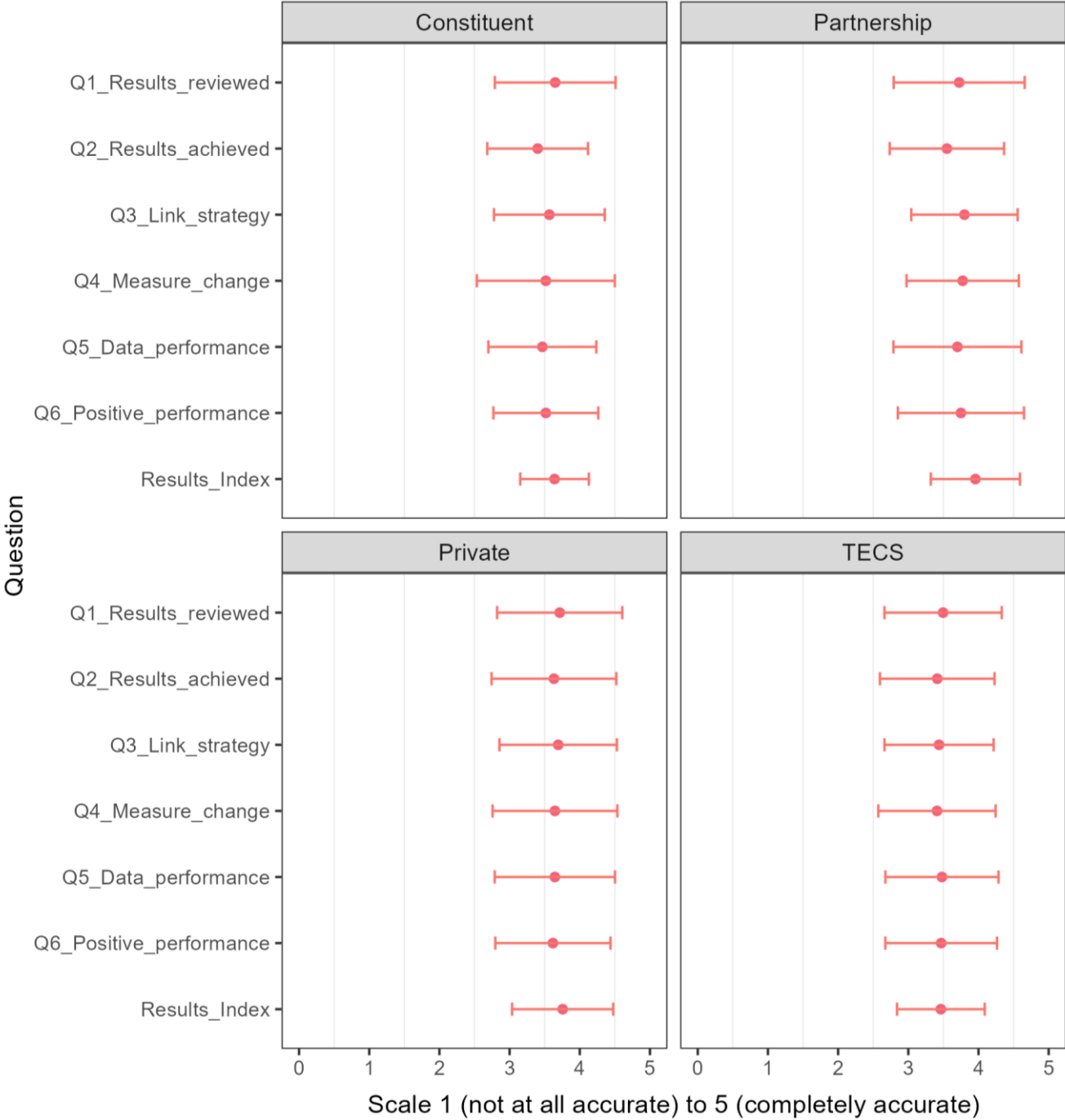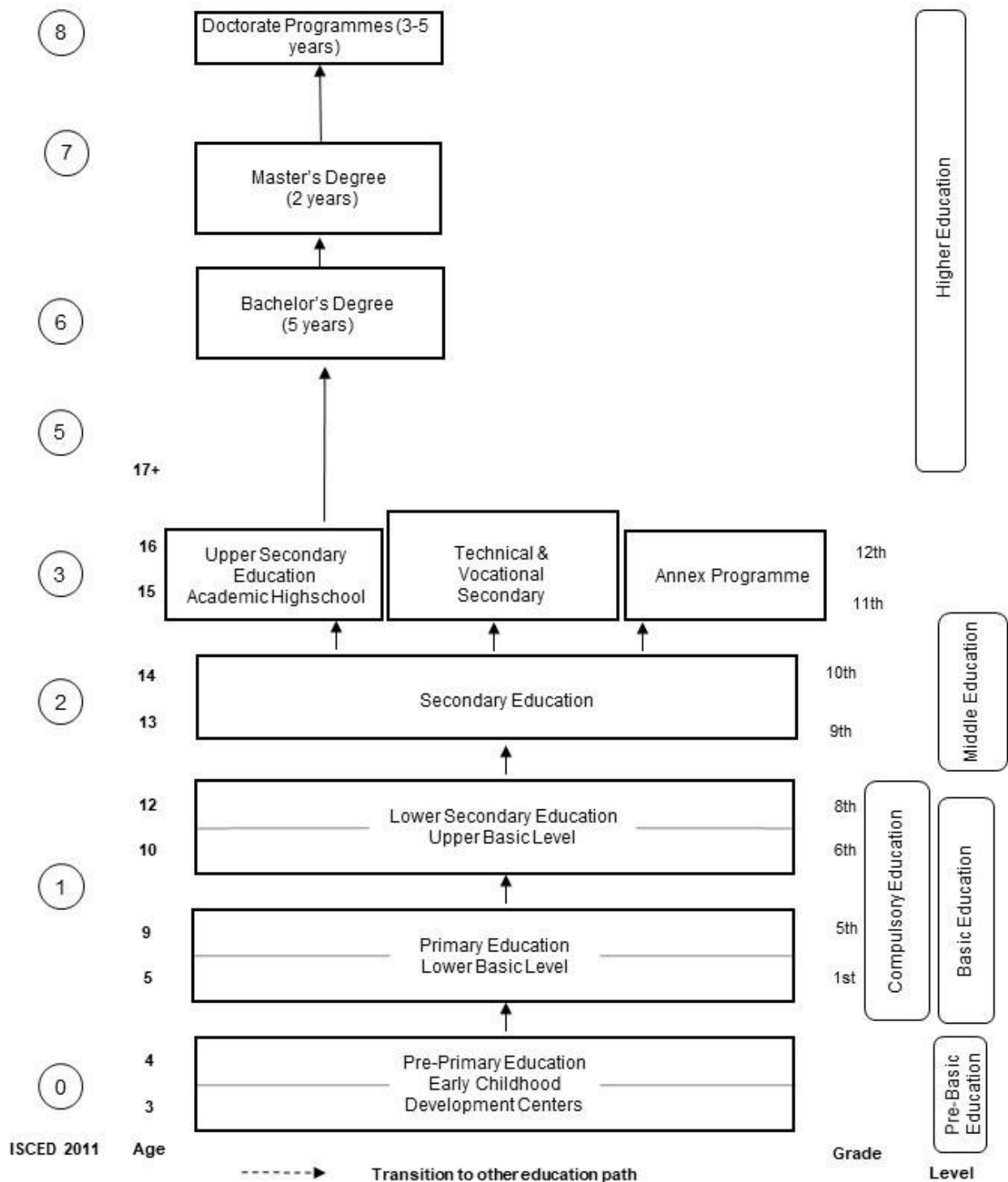Figure A3: EMFQ Results dimension by School type, n=825

Figure A4: Map of Nepal's Educational System

Source: Own figure based on UNESCO (2022)

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