Millennium Challenge Account of Mongolia (MCA-M) Technical, Vocational, and Education Project (TVET)

Baseline Report for the TVET Admissions Survey (2010-2012)

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II. List of Acronyms

Acronym	Definition
ATVET	Agency for Technical and Vocational Education and Training
DQM	Data Quality Monitoring
EEC	Education Evaluation Center
ESOMAR	European Society for Opinion and Marketing Research
GPA	Grade Point Average
IPA	Innovations for Poverty Action
IRIM	Independent Research Institute Mongolia
MCA-M	Millennium Challenge Account Mongolia
MCC	Millennium Challenge Corporation
MECS	Ministry of Education, Culture, and Science
MMCG	Mongolian Marketing Consulting Group
MNT	Mongolian Tugrik
MOU	Memorandum of Understanding
M&E	Monitoring and Evaluation
TVET	Technical and Vocational Education and Training
VET	Vocational Education and Training
VTPC	Vocational Training and Production Center
USD	United States Dollar

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V. Executive Summary

The Vocational Education and Training (VET) Project is one of the six overarching Millennium Challenge Account Mongolia (MCA-M) projects funded by the Millennium Challenge Corporation (MCC). The project aims to alleviate the mismatch that currently exists between the supply and demand for skilled labor by providing young Mongolians with an opportunity to study in a modern vocational educational environment. In order to assess the returns to vocational education for students, MCA-M worked with Innovations for Poverty Action (IPA) to design an admissions lottery and collect baseline socioeconomic information on the applicants, in preparation for a more extensive impact evaluation further on in the project. This baseline report serves three main purposes:

1. To describe how the baseline admissions data was collected;
2. To present the baseline data collected for 2010, 2011, and 2012 applicants to the 10 TVET schools that participated in the impact evaluation; and
3. To demonstrate the use of the data by assessing the efficacy of the lottery in creating similar groups of admitted and non-admitted students.

A. Project Background and Research Design

The overall goal of the VET Project is to improve the vocational educational environment in order to meet the demand for skilled labor in Mongolia. MCA-M plans to address this problem by providing students with access to high quality training in modern industrial skills.

The VET Project has five main components to meet this goal:

1. Reforms to TVET policy and operational framework activities;
2. Creation of skills standards and competencies system activities;
3. Competency-based training system activities;
4. Career guidance system activities; and
5. Improvement of learning environment in selected target schools activities.

In keeping with MCC's commitment to carefully track the results of its projects, IPA was contracted to design and conduct an impact evaluation of the equipment upgrades provided to the schools as part of the fifth component. A key component of the proposed strategy involved identifying the causal effects of attending a VET project school. An admissions lottery approach using an "oversubscription" model was selected as the best way to evaluate the impact of attending a TVET school on student outcomes. In this approach, when schools receive a higher number of qualified applicants than there are slots available, a lottery is used to randomly determine whether each applicant is accepted or not. This method is designed to avoid the problems associated with simply comparing students who attended a school to those who did not. In the standard admissions process, smarter and more motivated applicants are more likely to be admitted to the school, so it is difficult to know if differences in outcomes are due to the school or simply due to the fact that those who attended the school are different in various ways from those who did not attend. The lottery process ensures that those who are admitted are on average very similar to those who are rejected, and thus any differences in outcomes can be confidently attributed to attending the school.

B. Data Collection Process

Since the oversubscription model relies on the fact that there are more applicants than available slots, IPA and MCA-M investigated vocational schools that have been historically oversubscribed. Twelve TVET schools were identified as good candidates for the impact evaluation, and 10 of these agreed to participate[1]. MCA-M and the schools agreed on individualized admissions protocols that allowed the schools to determine their criteria for admissions such as the minimum grade point average (GPA) necessary to qualify for the school and criteria for preferred entry into the school. Table ES 1 lists the participating schools and their locations.

Table ES 1. TVET Schools Participating in the MCA-M Evaluation Randomized Admissions

School	Location
1. Bayan-Ulgii VTPC (Vocational Training and Production Center)	Ulgii City, Bayan-Ulgii Aimag
2. Construction college	Ulaanbaatar, Bayangol district
3. Darkhan-Uul VTPC	Darkhan, Darkhan-Uul Aimag
4. Dornod Phased Technical School	Choibalsan, Dornod Aimag
5. Dornod VTPC*	Choibalsan, Dornod Aimag
6. Gobi-Altai VTPC	Altai City, Gobi-Altai Aimag
7. Mongolian-Korean Technical College	Ulaanbaatar, Khan-Uul district
8. Orkhon VTPC	Erdenet, Orkhon Aimag
9. Ulaangom College	Ulaangom, Uvs Aimag
10. Umnu-Gobi VTPC	Dalanzadgad, Umnu-Gobi Aimag

*Dornod VTPC did not participate in the 2012 lottery

Applicants of participating schools completed a standardized application form developed by IPA that also served as a baseline survey for the impact evaluation. The application form collected information on basic household characteristics, socioeconomic status, educational and work experience, school-specific admissions criteria, and applicants' trade preferences. The applicants indicated their trade preference by ranking the trades available at each school that they were interested in studying in the application form. As part of the application, each applicant also completed a general knowledge test, covering basic mathematical and verbal reasoning. Mongolian Marketing Consulting Group (MMCG) was contracted to administer the admissions survey. MMCG was responsible for training the admissions staff from each school to properly administer the admissions questionnaire and give the entrance exams. The firm was also responsible for reviewing all of the applications received in each school and checking them for accuracy, consistency and coherency. If any information was missing or unclear on the application forms, MMCG followed-up with applicants to clarify. IPA also hired five independent data quality monitors to check whether the data collection activities in the field properly took place and to ensure that the dataset collected was accurate and corresponded to the hardcopies of the collected admissions surveys.

After all applications were submitted, lotteries were held at each participating school to randomly admit applicants to specific trade slots. The number of trade slots available was set by trade-level quotas at each school. The majority of the lotteries were held as public events at the schools for applicants and other interested parties to observe. IPA and MCA-M admitted students by running a computer program that:

[1] These 10 schools will be referred to as evaluation schools in this report.

1. Automatically rejected applicants who did not meet the minimum criteria specified by the school;
2. Automatically admitted applicants who met the school's special criteria for preferred entrance (e.g. having a GPA of over 85%); and
3. Used the student's indication of trade preference in the application forms, to randomly admit or reject the qualified applicants into available slots by trade. [2]

The program was projected on a screen and each step was carefully explained to the audience. After all applicants had been accepted to a trade or rejected by the lottery process, the lists of trades with accepted students and the list of rejected students were provided to school officials who were responsible for publicizing the lottery results to the applicants.

C. Summary of the TVET Applicant Dataset

The dataset collected during the admissions process provides a comprehensive dataset of students who applied to the 10 evaluation schools over a three year period. On average, these schools are in the top third of all vocational schools by total enrollment.[3] While the dataset was originally collected to facilitate the described evaluation, this data will be made available to the public so that other researchers, policy makers, and schools administrators can also utilize the information collected. As part of this report, we provide a summary of available variables as well as a description of all qualified students applying to the evaluation schools.

1. Number of Applicants

The 10 evaluation schools had a total of 12,806 applicants over the course of the baseline survey. The number of applicants decreased over time: there were 5,381 applicants in 2010-11, 3,953 in 2011-12, and 3,472 in 2012-13.[4] Applicants came from all aimags in Mongolia but the city with the most applicants was Ulaanbaatar with 18 percent. Ten percent of all applicants applied for 1-year programs, which focus only on hands-on technical training and require prior completion of secondary school, while the remainder applied to 2/2.5-year programs, which include academic classwork and graduates receive a secondary education certificate along with the vocational education certificate. Of the applicants that participated in the lottery, 92 percent of applicants applying to 1-year programs were accepted, while 77 percent of applicants applying to 2/2.5-year programs were accepted. The 1-year program trades that accepted the most applicants were Construction, Cook and Food Production, and Automobile Repair, while the 2/2.5-year trades that accepted the most applicants were Construction, Construction Plumbing and Welding, and Automobile Repair.

2. Applicant Characteristics

The average age of an applicant was 16.5 years. About 60 percent of applicants were male and 73 percent were of Khalkh ethnicity, which is the majority ethnicity in Mongolia. Eighty-eight percent of applicants had completed the ninth grade (required for most 2/2.5-year trades) at the

[2] Applicants who were automatically admitted to the schools are included in the summary statistics but not included in the balance tests section. As are students qualified for the school, but choose only trades for which they were unqualified.

[3] This information was attained from the table in Appendix B.

[4] This is most likely the result of the overall decrease in the number of graduates from basic and high school which occurred during this time.

time of application, while 8 percent had completed grade 11 (required for the 1-year trades). The average GPA was 74 out of 100. Applicants scored very low on the entrance exams with an average of 34.3 percent. Only five percent of applicants had any paid work experience prior to applying to vocational schools. Over 45 percent of applicants desired to work in government, while 18 percent wanted to work for a private company and 16 percent wanted to be self-employed after graduating from an evaluation school. When asked about alternative plans if they were not accepted into the evaluation schools, 78 percent responded that they plan to apply to other educational programs.[5]

3. Applicant's Household Characteristics

Overall, applicants came from poor families, with just over half of household heads working at the time of application. Seventy five percent of applicant households had a total monthly income of less than 300,000 MNT (Mongolian Tugrik) (215 USD)[6], while the average household size was 5.2 members. Applicants' households on average were thus significantly poorer than the average Mongolian household, which had a monthly income of 454,000 MNT (324 USD) based on the Household Socio-Economic Survey of 2011.[7] Sixty percent of all applicants lived in a ger, and 43 percent had a family member who herded livestock. In terms of household assets, over 90 percent of households had a television, 57 percent owned a refrigerator, and 27 percent had an automobile of some kind.

4. Gender Analysis

There are some clear differences between the characteristics of female and male applicants. Female applicants tend to come from poorer and more rural families, with less educated heads of households than their male counterparts. While 26 percent of household heads of male applicants completed a vocational or bachelor's degree, only 20 percent of household heads of female applicants completed the same degree. Looking at household income, 30 percent of male applicants' households had monthly income above 300,000 MNT (215 USD) while only 18 percent of households with a female applicant earned above the same amount. Almost across the board, households with male applicants owned more types of assets than did households with female applicants. Lastly, 65 percent of females lived in gers while 57 percent of males did, further suggesting that female applicant households were poorer.

Females and males had very different trade preferences and different alternative plans if they were not accepted into an evaluation school. The top three trades that females ranked as their first choice were Cook/Food Production, Construction Decoration, and Sewing. Male applicants ranked Automobile Repairs/Usage, Welding, and Construction Plumbing as their top three trades. Fifty-three percent of females stated that they would continue with high school if they were not accepted to the evaluation school, most likely to prepare for a bachelor's degree. However, only 40 percent of males chose to do the same. Instead, the majority of male applicants (57%) preferred to apply to another TVET school if they were not admitted into an evaluation

[5] As described in Section VI below, if students are able to enroll in other non-evaluation VET project schools, this could pose a threat to the study. This risk will be assessed throughout the evaluation, starting with the 2013 Graduate Follow-Up Survey.

[6] Using Oct. 2012 exchange rate of 1,400 MNT to 1 USD

[7] Batkhuyag, Badrakh. "Statistics Show That Household Income Has Increased." *Mongolia Business and Mongolian Daily Business News RSS*. Business Mongolia, 10 June 2011. Web. 15 Dec. 2012.

school. Males also had higher expectations of their future earnings than females, expecting to earn 60,000 MNT more per month than their female counterparts if accepted into their first choice trade.

D. Balance Tests

The admissions lotteries created two groups: those who were admitted to a trade at the school to which applied (the "treatment" group) and those who were not admitted (the "control" group). The lottery was designed to determine randomly whether each student would be accepted or not. This should ensure that students in the treatment group and the control group are very similar to each other on average. This would not be the case in a standard admissions process where those who appear to be better students are most likely to be admitted. In practice, however, random differences, although unlikely, can result from the lottery process. And while we cannot compare the students along all dimensions, we can use the information from the admissions survey to assess the similarities of the two groups using the answers provided by the applicants. If these two groups are similar along these dimensions, it provides supporting evidence that the lottery process did indeed work as intended.

To test the effectiveness of the lottery process at creating a control group with the same characteristics as the treatment group, a series of statistical tests were conducted on the key socioeconomic and demographic variables collected in the admissions survey. The treatment and control groups do not differ significantly. These results imply that the lottery was successful in creating comparable treatment and control groups, and thus comparing the applicants between these groups in the future will allow for an estimate of the causal impact of attending an evaluation school.

E. Conclusion and Next Steps in the Evaluation

The admissions survey dataset described in this document gives extensive information on the demographic, educational, and economic background of all applicants to the 10 evaluation schools. The schools represent areas from all around Mongolia, including students from every aimag, and have a more ethnically diverse set of students than the country as a whole. As a result, this dataset could be of significant use to anyone interested in generating statistics on potential applicants to vocational schools in Mongolia, including other researchers, government officials, and even school administrators.

To assess the impact of TVET education on student's employability and wages, students will be surveyed after their graduation from TVET institutions. The student-level outcomes post-graduation are being captured in the Graduate Follow Up Survey; the first round of Graduate Follow Up Survey on the students in the 2010 Admission was collected in Spring and Summer 2013. Graduate Follow Up Surveys are planned for students in 2011 admissions and students in 2012 admissions in Spring 2014 and Spring 2015, respectively. The data from Graduate Follow Up data collection will be analyzed to detect any noticeable divergence in wages and employability between admitted and non-admitted students, and to see if the students remained compliant to their admissions lottery outcome. Specifically, the Graduate Follow Up Survey of the 2010 cohort collected in Summer 2013 will be analyzed to assess the degree to which the rejected complied with the results of the lottery. Tracking Surveys that collect up-to-date contact information and some basic education and employment outcome information are also planned for current students to aid in locating these students post-graduation. Data from the Administrative

Survey, which collects school-level characteristics and project implementation details, will also be analyzed to assess the generalizability of the data from evaluation schools to all project schools.

Additionally, many of the schools that participated in the admissions lottery process have decided that they want to continue using this method to admit students. If they continue with this plan, these future lotteries could provide an excellent source of random variation to future researchers on vocational education, in addition to being the basis of new impact evaluations.

VI. Introduction

In Mongolia, a mismatch currently exists between the supply and demand for skilled labor. This was brought on partly as a result of an outdated educational environment. In response, the Millennium Challenge Account of Mongolia (MCA-M), with funding and technical oversight from the Millennium Challenge Corporation (MCC), designed the Vocational Education and Training (VET) Project to help correct this imbalance in supply and demand, while improving the employment prospects of young Mongolians, by providing access to high quality training in modern industrial skills. The project's main activities were to strengthen the country's vocational education policy, improve teacher training and professional development, update and improve the national curriculum, and provide technical and vocational schools with upgraded instructional equipment.

In order to evaluate the results of this effort, MCC contracted Innovations for Poverty Action (IPA) to design and conduct an impact evaluation using the methodology of the randomized control trial. As part of this effort, MCA-M conducted a survey of all the students who applied for admissions to the 10 evaluation schools participating in the research project. The admissions survey served as a basis for the random admissions lottery and as a baseline survey for the evaluation. It is also a unique, comprehensive database of all students who applied to participate in the evaluation schools over a three year period that will be available for use by other researchers.

This document summarizes the characteristics of this dataset. First, we provide a brief description of the project to provide the context in which the data were collected in Section II. Section III details the process by which the data were collected. Section IV then provides a description of the students in the dataset and a tabulation of the most important variables. Then in Section V, we use the baseline data to assess the outcome of the lottery process, checking the internal validity of the comparison of students who were and were not offered admission to the evaluation schools. Lastly, Section VI summarizes the report's conclusions and next steps.

The following terms are used to refer to different types of schools throughout the report:

1. *VET Project*: MCA-M's project that is being implemented for vocational schools
2. *Project school*: Refers to schools that received assistance from the VET Project
3. *Evaluation school*: Refers to the 10 schools that are part of MCA-M's randomized admissions impact evaluation
4. *TVET school*: Refers to all vocational schools in Mongolia in general regardless of their project recipient status or evaluation status

VII. Project Background

A. Background on Participating Evaluation Schools

The existing national network of TVET schools may provide a means of helping Mongolia produce the types of skilled workers demanded by its modernizing economy. For this reason, there has been a push from policymakers to increase the number of trained technical and vocational teachers and boost the enrollment levels of TVET schools. As Table 1 below demonstrates, enrollment rates appear to be increasing in recent years, especially at state-owned schools.

Table 1. TVET Schools Student Enrollment (2009 – 2012)[8]

	2009- 2010	2010- 2011	2011-2012
Students at TVET Schools	44,681	46,071	48,134
Students in the city	17,962	18,976	18,720
Students in the countryside	26,719	27,095	29,414
Students at State-Owned Schools	33,386	34,711	37,227
Students at Private Schools	11,295	11,360	10,907
New Student Enrollment	19,754	19,358	19,417
9th Grade Enrollment	13,952	13,186	11,116
11th Grade Enrollment	3,426	2,865	4,094
Graduates from TVET Schools	14,836	18,705	N/A
Teachers at All Schools	2,033	2,084	2,093

TVET schools can be either private or state-owned. State-owned schools were formerly directly under the authority of the Ministry of Education and the Agency for Technical and Vocational Education and Training. After the recent parliamentary elections in 2012, vocational education is now under the Ministry of Labor. The ministry appoints the school directors and deputy directors, who are in charge of the day to day management decisions. On the other hand, private schools have their directors appointed directly by their board members. Private schools generally have the same internal structure as state-owned schools and are subject to most of the same rules, regulations, and subsidies as state-owned schools.

There are generally two types of vocational education training programs available for students who have completed basic education in Mongolia – a 2/2.5-year program for students that have only completed nine years of studies in the national education system and a 1-year program for student who have completed all 11 years of their secondary school studies. The 1-year programs concentrate solely on vocational training and students receive a vocational education certificate upon graduation. The 2/2.5-year programs offer a mix of basic academic courses and vocational training, and students receive both a secondary education and a vocational education certificate upon graduation.

Entering a TVET program is made more attractive by the government's policy granting a 45,000 MNT (approximately 32 USD) monthly stipend to all enrolled students that are under the age 24 at both state-owned and private TVET schools. State-owned TVET schools are free of charge and fully funded by the government. In 2005, Mongolian TVET schools also started running adult training programs, mainly with the purpose of re-training unemployed and underemployed adults for new jobs.

There are 72 TVET institutions scattered throughout Mongolia – 21 of which are private and 51 of which are state-owned.[9] Every provincial capital hosts at least one state-owned TVET school. The average school hosts approximately 670 students, employs approximately 30 teachers, and provides instruction in approximately 14 trades. Most TVET school facilities contain classrooms, for teaching theoretical courses, and a series of larger workshop areas where trade specific activities can be practiced and performed. More details on the key features of each school can be seen in Appendix B.

[8] AVET provided the information.
[9] This information was attained from the table in Appendix B.

B. Overview of Project Components and Activities

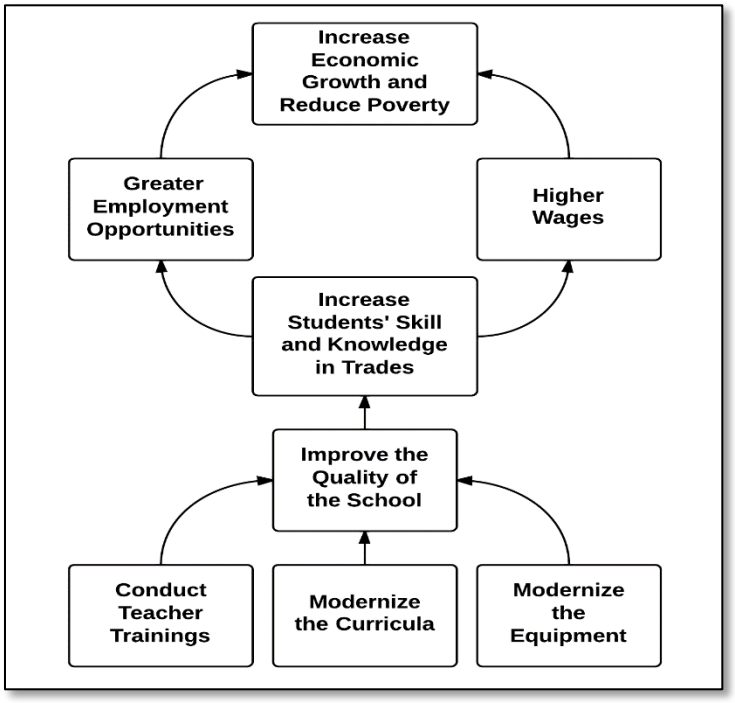
The MCA-M VET Project aims to improve and strengthen the Mongolian educational system with the overall goal of stimulating economic growth and reducing poverty. It has pursued this goal by ensuring that students at technical and vocational schools are receiving training in modern industrial skills to prepare them to meet the labor market demands in key developing industries in Mongolia. The VET Project targets both private and state-owned technical and vocational schools. To accomplish these goals, the MCA-M VET Project activities encompass the following five inter-related activities: [10]

1. *Reforms to TVET policy and operational framework activities*: Aims to strengthen the policy and operational framework, to create an efficient governance and standard setting mechanism, and to secure private sector participation for TVET
2. *Creation of skills standards and competencies system activities:* Focuses on the establishment of skills standards and a competency-based qualification training system and to install these innovations in training institutes
3. *Competency-based training system activities:* Implements the new competency-based training system in TVET schools
4. *Career guidance system activities:* Provides career guidance and employment information services
5. *Improvement of learning environment in selected TVET schools activities:* Supplies selected schools with essential equipment, instructional technology and media

Figure 1 below demonstrates how the desired overall impact will result from the activities listed above. It starts with the goal of the VET Project, which is to improve the foundation of vocational education in Mongolia by strengthening its teachers, curricula, and equipment, resulting in an overall quality enhancement of Mongolian education. Better education produces students that are more skilled and better prepared to join Mongolia's developing work force. The resulting higher employment rates and wages should both stimulate the economy and reduce poverty rates. A more detailed program logic diagram is included in Appendix A.

[10] Compact Amendment page #14, "Annex I – Summary of Program – C. Vocational Education Project, 2. Activities"

Figure 1. Estimated Impact from VET Project Activities



C. TVET Evaluation Design

Due to the nature of the different activities, MCC decided to focus on identifying the effects of the fifth activity described above, and in particular, assess the effects of the new equipment provided to schools. The details of the full evaluation strategy are available in the TVET Evaluation Design Document. However, of the several possible strategies for identifying the effects of the equipment upgrades, each depends on being able to identify causally the effects of attending a VET project school.

To identify this effect, one needs to compare students who have attended a project school to those who have not. However, the current admissions process makes such comparisons. For example, Mongolian TVET students have different levels of education, motivation, and skills, and the brightest, wealthiest and best connected students are much more likely to be admitted to TVET schools. If the students admitted to the project schools are smarter, better connected or more motivated to begin with, simply comparing the outcomes of these admitted students to the outcomes of those who were not admitted would introduce upward bias into our impact estimates as smarter, better connected or more motivated individuals tend to have better outcomes regardless of education. The VET Project could have potentially exacerbated this situation by providing project schools with more resources, generating even more competition among students for admission.

The evaluation strategy for the VET Project solves "selection" problems like these by introducing random variation into the admissions process. Specifically, an "oversubscription" model was used because it would be the simplest and least invasive method for introducing such variation. The "oversubscription" model is a very common evaluation strategy for education interventions – one that has been used successfully to evaluate numerous education programs,

including projects in Washington DC and Colombia.[11] This model relies on the fact that many schools are already oversubscribed – i.e. receive more applications than they have the resources to accept. When schools are significantly oversubscribed, a randomized lottery process can easily and ethically be used to grant or deny admission within a pool of qualified applicants. In the case of Mongolia's TVET schools, the oversubscription model is particularly appropriate given that school directors and admissions specialists often express uncertainty about which criteria should be used to allocate the limited admissions slots among qualified students. In this context, lottery-based admissions would serve the dual purpose of generating sound research and providing a fair and transparent way to allocate resources.

As a result, qualified applicants were randomly admitted to the schools. Random assignment should lead to the creation of two virtually identical groups at the baseline. As a result, any changes observed between the two groups over time can be attributed to enrollment in the project schools. Baseline data was collected via the admissions survey at the time applicants applied to the schools, before they were assigned to treatment and control groups. In addition to providing an overview of this dataset, this report uses the baseline data to check that the two groups, treatment and control, are in fact similar and comparable.

D. Admission Selection Process

The admissions process negotiated between IPA and MCA-M and the participating evaluation schools proceeded as follows in accordance with the Admissions Regulations of each individual school:

1. Application

To assist with the admissions process, IPA subcontracted the firm, Mongolian Marketing and Consulting Group (MMCG), a research and consulting firm and member of the European Society for Opinion and Marketing Research (ESOMAR),[12] which provided support in the collection of applications and performed the data entry of information gathered through the application forms. The application forms required applicants to rank their trade preferences, which were then used in the lottery process described below to determine which applicants were admitted to each trade.[13]

[11] See: Attanasio, Orazio, Adriana Kugler, and Costas Meghir. (2011) Subsidizing Vocational Training for Disadvantaged Youth in Colombia: Evidence from a Randomized Trial. *American Economic Journal: Applied Economics*, 3(3): 188–220; as well as Linden, Leigh, Carla Herrera, and Jean Baldwin Grossman. (2011) Achieving Academic Success After School: A Randomized Evaluation of the Higher Achievement Program. Working Paper, University of Texas-Austin.

[12] The European Society for Opinion and Marketing Research (ESOMAR) is an organization dedicated to encouraging, advancing and elevating market research worldwide.

[13] While the schools did not differ greatly in terms of the information collected from applicants, schools did differ in terms of the timing and the approaches used to collect applications. See Appendix C for a detailed description of the timeline and approaches employed by each of the schools. Most of the schools held two separate rounds of admissions—one in mid-May through early July and a second in late August. Additional information about the data collection process can be found in Section III A.

2. Admissions Lotteries

Lotteries were held in every school for each admissions round.[14] The majority of the lotteries were held as public events at the schools for applicants and other interested parties to observe. Several schools, however, decided instead to hold the lotteries as closed events in the MCA-M office in Ulaanbaatar. Before lotteries were held, MCA-M and IPA confirmed with the schools the final number of slots available for each trade, as well as the following criteria that factored into the lottery process.

a. Minimum and Trade-Specific Criteria

Each of the schools set the minimum criteria that applicants must meet to be considered qualified for admissions into the school and thus eligible to be included in the lottery. Some schools also had specific minimum criteria that applicants must meet to be admitted into certain trades. For instance, some schools required that applicants were of a certain age to be admitted to trades that were particularly physically demanding.

b. Preferred Status

Some schools also expressed the desire to guarantee admissions for high caliber applicants that met certain criteria such as having a GPA of 85 or greater and/or participating in state Olympiads. Some schools also requested that applicants with guaranteed employment as well as disabled and disadvantaged applicants, such as orphaned applicants or applicants below a certain poverty threshold, likewise be granted preferred status for admissions. Consequently, all students meeting these criteria requested by the schools were identified and guaranteed admissions into the schools.

c. Duplicates

In order to ensure that all applicants received a fair and equal chance of being selected for admissions, and that no one applicant had a higher chance of being selected, it was determined that applicants who participated in a spring admissions round would not be eligible for the fall admissions round lottery at the same school. Also the admitted lottery participants at one school were not allowed to participate in a lottery at another evaluation school. Analysis of follow up data is necessary to see schools adhered to these procedures.

3. Lottery Steps

After confirming all the details with the schools, IPA prepared a computer program to randomly assign applicants into trade slots based on the trade preferences indicated by rankings in the application form. For example, if there were three applicants eligible for the lottery who ranked the construction trade as their first choice and there were only two spaces available, the computer program randomly assigned two out of the three applicants into the construction trade. The remaining applicant then goes through the same process for their second ranked trade. The example above also illustrates that the way in which applicants ranked the trades in the application form affected their probability of getting accepted. Once prepared, the lottery observers witnessed each of the required steps of the lottery computer program via a projection screen to ensure that the process was transparent. Each step was thoroughly explained during the

[14] See Appendix C for the dates of each of the lotteries.

lottery event. After every step, a hard copy was printed and signed to verify and document the process. After all applicants had been accepted or rejected by the lottery process, the lists of trades with accepted students and the list of rejected students were provided to school officials who were responsible for publicizing the lottery results to the applicants. The entire list of lottery steps can be found in Appendix D.

VIII. Data Collection

A. Contracting

To ensure that schools implemented this process properly and that school admissions staff was not overburdened by the additional requirements, MMCG was contracted to provide support in the collection of applications.[15] MMCG was also responsible for reviewing all of the applications received in each school and checking them for accuracy, consistency, and coherence. In the case that any information was missing or unclear on the application forms, MMCG followed-up with applicants to clarify the issue. In addition, they performed the data entry of information gathered through the application forms. If the applicant was under the age of 16, which is the legal age of majority in Mongolia, the legal guardian had to sign the written consent form.

MMCG was an ideal candidate because they had the ability to rapidly mobilize a sufficient number of qualified staff and place them in the schools that were to participate in the study. The firm also possessed strong data management skills and were capable of entering and processing large amounts of data in a limited time period.

B. Selection of Participating Schools

Since random assignment of admissions required that some students be accepted while others are rejected, only those schools that were identified as historically oversubscribed were recruited for participation in the evaluation. According to investigations conducted by IPA and confirmed by MCA-M, at least twelve of the project schools short-listed for participation in the MCA-M project routinely turned away a number of students because they simply did not have enough resources to serve all applicants.

As part of the recruitment process, the MCA-M Monitoring and Evaluation (M&E) team along with the IPA field team held a number of informational workshops for the Ministry of Education, Culture, and Science (MECS), the Agency for Technical and Vocational Education and Training (ATVET), TVET school directors and staff, secondary school staff, local government officials, and other stakeholders. MCA-M M&E and IPA staff also met individually with each of the recruited schools to discuss the logistics of being a part of the evaluation. Ten of the twelve schools recruited ultimately decided to participate in the evaluation. As explained in the TVET Evaluation Design document, Dornod VTPC participated in the study in 2010 and 2011 but decided to drop out in 2012. Therefore, there are nine schools that participated in all three admissions lotteries (2010, 2011, and 2012) and one school that only participated in the first two years (2010 and 2011). In 2011, the 10 TVET schools that participated in the evaluation made up 23 percent of all students in a TVET program in Mongolia. Table 2 and Figure 2 give an overview of the participating schools and their locations.

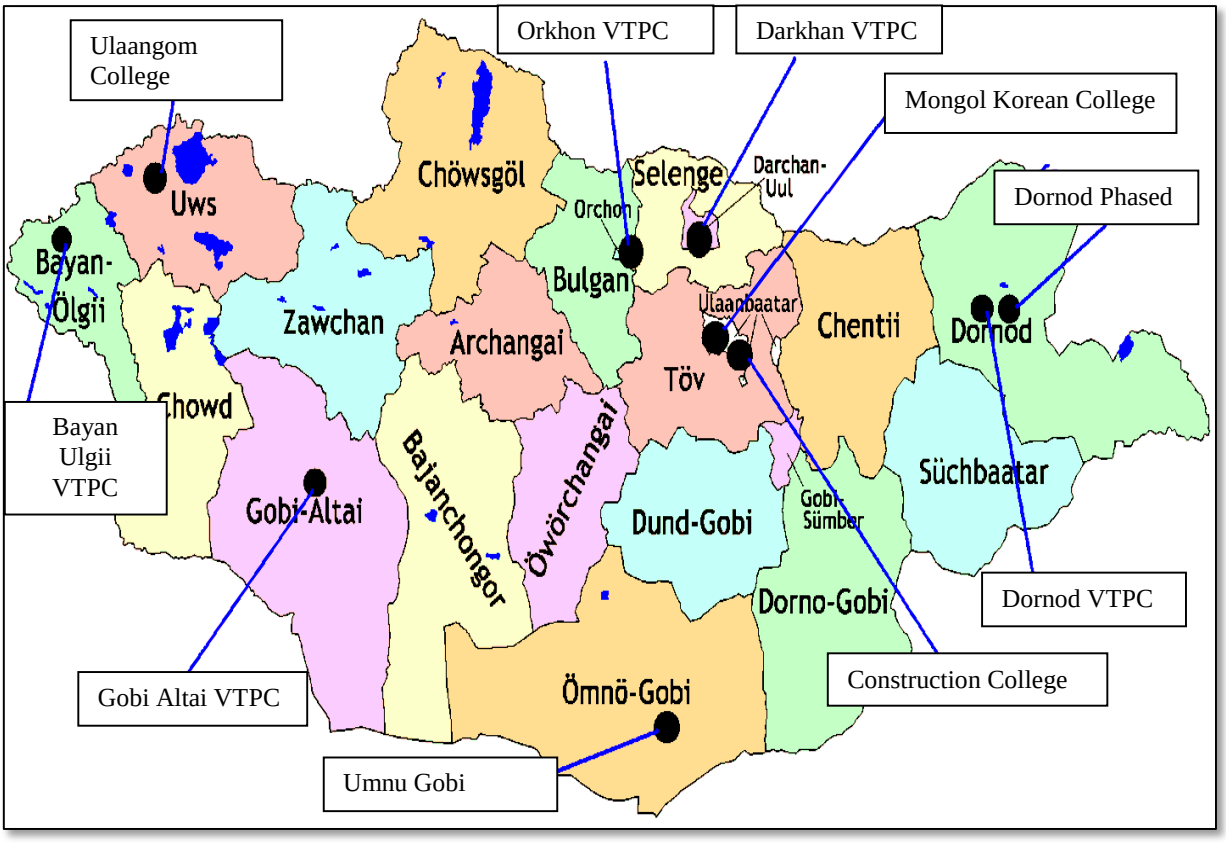
[15] MMCG was subcontracted by IPA for the first Admissions survey in 2010 and again in 2011 after MCA-M terminated a contract with BK, but was contracted directly by MCA-M in 2012.

Table 2. TVET Schools Participating in the MCA-M Evaluation Randomized Admissions

School	Location
Bayan-Ulgii VTPC (Vocational Training & Production Center)	Ulgii City, Bayan-Ulgii Aimag
Polytechnic College (former Construction college)	Ulaanbaatar, Bayangol district
Darkhan-Uul VTPC	Darkhan, Darkhan-Uul Aimag
Dornod Phased Technical School	Choibolson, Dornod Aimag
Dornod VTPC*	Choibolson, Dornod Aimag
Gobi-Altai VTPC	Altai City, Gobi-Altai Aimag
Mongolian-Korean Technical College	Ulaanbaatar, Khan-Uul district
Orkhon VTPC	Erdenet, Orkhon Aimag
Ulaangom College	Ulaangom, Uvs Aimag
Umnu-Gobi VTPC	Dalanzadgad, Umnu-Gobi Aimag

*Dornod VTPC did not participate in the 2012 lottery

Figure 2. Map of Mongolia with TVET Schools Participating in the MCA-M Evaluation Randomized Admissions



MCA-M signed a Memorandum of Understanding (MOU), an example of which can be seen in the TVET Evaluation Design document, with each of the 10 evaluation schools that outlined the school's decision to participate in the evaluation and the responsibilities of MCA-M and the schools. MCA-M and the schools also agreed on individualized admissions protocols that included the following:

1. The school's desired timeline for accepting applications to the school;
2. The school's minimum criteria that all accepted students must meet (see Section II D2 for more detail);
3. The school's criteria for applicants that should receive preferred status (see Section II D2 for more detail);
4. A list of the trades taught at each of the schools; and
5. Any specific criteria that must be met for admissions into specific trades (see Section II D2 for more detail), and the estimated number of slots available for each of the trades taught.

Admissions protocols were updated each year allowing schools to learn from the experience of previous years.

C. Questionnaire Development

After the initial 12 schools were identified, MCA-M M&E unit organized a workshop on the Impact Evaluation Design for the VET Project which was held on March 29, 2009 and involved two representatives from each of the 12 schools. During the workshop, information was shared with the schools about the evaluation. The workshop also acted as a forum for the schools to share their input about the application process. Following the workshop, MCA-M M&E team along with IPA staff visited each of the schools to encourage their participation. During these visits, MCA and IPA identified all of the admissions practices of each school. They then created a unified instrument that included slight variations to accommodate the idiosyncratic admissions requirements of particular schools, after which they got each of the schools to agree to the new application form. The final product was a 10 page application form, which also acted as the admissions questionnaire. The instrument was not pilot tested in 2010 due to time constraints; however it was extensively reviewed by the admissions staff prior to being finalized. For 2011 and 2012 admissions, the instrument was piloted in vocational schools in Tuv aimag and Ulaanbaatar that were not part of the evaluation. No changes were made as they were not necessary.

The test that accompanied the application was developed by the Education Evaluation Center (EEC), part of MECS, under a consulting contract with IPA. They were chosen for three main reasons. First, EEC had extensive experience developing tests, especially for different schools in Ulaanbaatar. This was a result of their prior experience developing the nationwide tests for the university entrance exam and applying international standards to Mongolia's testing system. Second, they were the only organization that could develop standardized entrance tests in a short period of time. There was a rush to develop the tests due to the admissions deadlines. Third, the official support of EEC and MECS was crucial in setting up the randomized admissions process. Due to this partnership with MCA-M and IPA, MECS helped disseminate information about the randomized admissions process to all the participating schools and aimag-level education departments. The entrance exam tests were piloted prior to the first round of admissions in 2010 and revised accordingly.

D. Description of Questionnaire

The application forms contained questions regarding key demographic and socioeconomic information, as well as contact information that will be used to locate students in the future for follow-up surveys. The application forms also included a section where applicants were asked to

rank the trades that they wished to study starting with their most preferred trade. Applicants were instructed not to rank any trades that they did not wish to study. While the idea of ranking trades was accepted as a new approach of assigning applicants to trades by the school's staff, the applicants, and the local education departments, the principle method of assigning applicants into trades was kept the same as the traditional approach. The key difference between the two approaches was that in the new method, the applicants were asked to rank the trades up front rather than selecting from a list of trades that still had openings available after they had been accepted. During the lottery process, the applicant was eligible only for trades that they had ranked. An overview of the admissions application can be seen in Table 3 below, while the full application form is included in Appendix E along with a list of the individual questions that were added for each particular school in Appendix F.

Table 3. Admissions Application Overview

Application Structure	Description
Consent Release Form	This section was needed to ensure that the applicants understood what was being asked of them and gave their consent to participate in this survey.
Application Form	This section was needed to get general demographic and employment information about the applicant.
Household information	This section was needed to get socio-economic information about the applicants' households.
Applicant's Contact information	This section was needed to obtain applicants' contact information so they could be located at a future date to continue the study.
Tracking information	This section was needed to obtain contact information about the applicants' family so the applicant could be located at a future date to continue the study.
Trade	This section was needed to obtain applicant's preferences for trades offered by the school. The section also asked about applicant's perceptions on expected salary and length of time finding a job after graduation if accepted into that trade.
Alternatives	This section was needed to obtain information about the applicants future plans in the event that they are not accepted into any program.
School Criteria	This section was needed by the schools to identify unqualified applicants. This section also contained questions that related to the trade-specific requirements that applicants must meet in order to be eligible for certain trades.

As part of the application, each applicant also completed a paper-and-pencil general knowledge test covering basic mathematical and verbal reasoning. Each student had roughly 40 minutes to complete the test. The General Knowledge test was developed to measure the applicants' strengths and weaknesses in the following four areas:

1. *Verbal Ability*: Ability to understand analogies and follow detailed written instructions;
2. *Numerical Ability*: Basic arithmetic, number sequences and simple mathematics or IQ testing questions;
3. *Technical & Mechanical Reasoning*: Questions designed to assess applicants' knowledge of physical and mechanical principles; and
4. *Essay Writing*: Writing skills and to learn the applicants understanding of their top ranked trades and their motivations for applying to them.

E. Questionnaire Administration

MMCG placed staff at each of the schools to coordinate and assist the schools' admissions committees with the collection of applications. MMCG held a public outreach event at each of the schools to inform potential applicants and local stakeholders about the modified admissions process.

The exact dates and admission process varied from school to school. However overall, schools employed two basic approaches to collecting the applications. First, all applicants for both admissions rounds physically came to the school to apply in person. Applicants filled out an application form with the assistance and supervision of the school's admissions staff and MMCG staff. MMCG placed field staff in the schools for the duration of application period and oversaw the application process on a daily basis. Second, during the spring admissions rounds, applicants did not physically go to the evaluation schools to apply. Instead, all spring applications were collected from secondary school students in their respective soums. In 2010, MMCG organized training for soum secondary school staff, but due to time constraint, did the data collection themselves. In the following two school years, MMCG conducted training for the vocational school admissions committee in survey data collection and organized public events to draw potential applicants to apply at the schools. However, the secondary school teachers and vocational schools staff and not MMCG administered the general knowledge test to applicants. The applications and test booklets were then sent back to Ulaanbaatar for review and data entry. Schools that employed this approach also held a second round of admissions in August, for which the first approach method was used for gathering applications. All August applicants were required to come in physically to the evaluation schools to apply.

Table 4 below shows when schools participated in the two rounds of admissions each year as well as the number of applicants that went through the admissions process from each school in each round.

Table 4. Number of Applicants by Year and Round of Lottery*

School Name	2010 Round 1 Number of Applicants	2010 Round 2 Number of Applicants	2011 Round 1 Number of Applicants	2011 Round 2 Number of Applicants	2012 Round 1 Number of Applicants	2012 Round 2 Number of Applicants
Gobi Altai VTPC	378	-	319	59	430	6
Dornod Phased Technical School	544	135	268	158	159	136
Dornod VTPC**	210	132	-	92	-	-
Darkhan VTPC	184	346	114	194	52	149
Orkhon VTPC	484	14	307	29	238	42
Bayan Ulgii VTPC	-	406	137	119	113	148
Umnu Gobi VTPC	277	126	211	46	178	46
Construction College	595	25	415	326	373	329
Mongol Korean College	350	279	380	257	296	230
Ulaangom College	-	565	332	90	264	158
Total by Year	3,022	2,028	2,483	1,370	2,103	1,244

*Note that not every school conducted two rounds of lotteries every year
**Dornod VTPC dropped out of the study after the 2011 round 2 lotteries

F. Data Quality Monitoring

In order to ensure the quality of the data collection process, IPA and MCA-M contracted for data quality monitoring (DQM) services. In 2010, IPA hired five individuals as independent contractors. In 2011, MCA-M contracted "Business Mind" LLC, a local survey firm, through a fixed budget procurement process to conduct all DQM activities. In 2012, MCA-M contracted Independent Research Institute Mongolia (IRIM), a local survey firm, through a fixed budget procurement process to conduct all DQM activities.

These activities served two primary purposes. First, the DQM staff checked whether the surveys were administered correctly. Specifically, DQM staff conducted field visits to check whether MMCG properly administered the admissions survey and delivered outreach activities to potential applicants. Second, the DQM staff checked that the electronic dataset delivered to MCA-M accurately represented the information collected by enumerators in the paper survey forms. Because of the need to rapidly prepare the data for the lotteries, two rounds of manual checks were conducted for every school. The interim manual check took place prior to each school's lottery to ensure that all the variables relevant to the lottery were correct. The full check, conducted after the lottery, then checked the dataset as a whole.

1. Field Monitoring

It was the responsibility of the DQM contractor or consultant to monitor the data collection firm's activities in the field. The data collection contractor for TVET admissions was not only responsible for administering the application form but was also in charge of organizing several outreach and training activities. These activities included developing and broadcasting aimag-wide advertisements about the application process for an evaluation school through local radio, TV, and posters; introducing the randomized admissions process to applicants and their parents; training the admissions staff of different schools to fill out the application forms and to administer the entrance exams; and organizing the logistics for the lottery event. The DQM staff members were responsible for monitoring the progress for all of these activities to ensure that they all took place. In Dornod, Gobi Altai, and Uvs aimags, the data collection firm was responsible for going to every soum of the aimags to recruit applicants and collect their application forms. In the other seven schools, the data collection firm was still responsible for broadcasting advertisements throughout the whole aimag but stayed in the evaluation schools to collect application forms since applicants had to come to the schools in order to apply.

2. Interim Manual Check

Prior to every lottery, the data collection contractor sent preliminary admissions datasets and scanned questionnaires for every single applicant. IPA, MCA-M, and the DQM contractors then conducted a manual check on the preliminary data. Given the importance of these variables in the admissions process, every single variable used in the lottery was compared to the admissions surveys for each applicant. These variables included the full name of the applicant, age, GPA, entrance exam scores, trade rank preferences, and special criteria variables which were set by the school for preferred admissions. The data collection contractor then corrected identified errors and provided a final lottery-ready admissions datasets.

3. Full Manual Check

The interim manual check only identified errors for the variables relevant to the lotteries. Once the lotteries were completed, IPA, MCA-M, and DQM staff members conducted a thorough manual check of the entire dataset. IPA randomly selected roughly 10 percent of all entered values in a dataset. The selected entered values were checked against the values in hard copy questionnaires. IPA followed a strict criterion to ensure that the error rate, or the number of mismatches between the hard copy questionnaires and entered values, did not exceed 0.5 percent. The checks were done by school and if the error rate for the dataset of any school exceeded this value, the data collection contractor had to re-enter the dataset for the given school and another round of manual checks were conducted. This process was repeated until every dataset had an error rate below 0.5 percent.

IX. Analysis of Admissions Survey

A. Summary Statistics of TVET Applicants

This section describes the characteristics of applicants who met the minimum criteria set by each evaluation school and were either automatically admitted due to their qualifications or were part of the randomized admissions lottery. The applicants who were part of randomized admissions lottery included applicants who had zero percent and 100 percent probability of admissions. Some applicants were virtually guaranteed admissions because there were fewer applicants than available spots in the selected trade. Applicants with zero percent probability of admissions met the minimum criteria but chose trades that they were unqualified for. All students who were part of the randomized admissions lottery along with students who had preferred admissions status were included in the analysis set for this section.

1. Number of Applicants by School

The 10 evaluation schools which went through the randomized process organized by MCA-M and IPA between 2010 and 2012 had a total number of 12,250 qualified applicants. Table 5, below, provides a breakdown of the number of applications received by each school and the overall percentage they made up of the total sample, in addition to the number of students accepted to these schools. There were 556 applicants rejected automatically due to not meeting the minimum requirement for admissions; they were excluded from the lottery and not considered part of the applicant pool for the purpose of this report.

Table 5. Number and Percentage of Qualified Applicants by School

School	Number of Applicants	Percent of Applicants (%)	Accepted Automatically	Accepted via Lottery	Rejected Automatically	Rejected via Lottery
Gobi Altai VTPC	1,192	9.7	22	840	23	330
Dornod Phased	1,400	11.4	98	924	101	378
Dornod VTPC	434	3.5	43	302	83	89
Darkhan VTPC	1,039	8.5	97	893	7	49
Orkhon VTPC	1,114	9.1	47	739	70	328
Bayan Ulgii VTPC	923	7.5	20	850	19	53
Umnu Gobi VTPC	884	7.2	96	650	7	138
Construction College	2,063	16.8	25	1,510	46	528
Mongol Korean College	1,792	14.6	0	1,195	193	597
Ulaangom College	1,409	11.5	73	1,223	7	113
Total	12,250	100	521	9,126	556	2,603

2. Numbers of Applicants by Residency

The administrative unit with the most applicants was Ulaanbaatar (17.9%), which is the largest administrative unit in Mongolia and has two schools participating in the evaluation process. Three aimags (Uvs, Dornod, and Gobi-Altai) each provided over 10 percent of the applicants to the schools in the sample, while relatively small numbers of applicants came from each of the other aimags. Additional information can be found in Table 6 below.

Table 6. Applicants' Residency Location

Aimag	Frequency	Percentage
Ulaanbaatar*	2,192	17.9
Uvs*	1,539	12.6
Dornod*	1,425	11.6
Gobi-Altai*	1,259	10.3
Umnu-Gobi*	926	7.6
Bayan-Ulgii*	897	7.3
Orkhon*	734	6.0
Darkhan-Uul*	570	4.7
Sukhbaatar	472	3.9
Selenge	430	3.5
Tov	296	2.4
Arkhangai	241	2.0
Bulgan	240	2.0
Ovorkhangai	229	1.9
Khovsgol	167	1.4
Zavkhan	143	1.2
Khentii	130	1.1
Dundgobi	127	1.0
Bayankhongor	83	0.7
Khovd	80	0.7
Dornogobi	45	0.4
Gobi Sumber	13	0.1
Total	12,238	100

* Indicates aimag contains a school participating in the study

3. Numbers of Applicants by Cohort/Year

Applicants for the 2/2.5-year TVET programs far outnumbered those for the 1-year programs. This is partially driven by the fact that a large number of schools do not offer 1-year programs and that many 1-year programs require applicants to have a high school certificate and an age requirement that the majority of applicant were too young to meet.[16] Adult training and short-term training programs do not have such criteria. Even schools that do offer 1-year programs do not offer them for all trades. Regardless, the 2/2.5-year track was more popular across all schools and trades. This can be seen by the fact that there are 11,033 applicants who are in 2/2.5-year programs compared to the 1,207 applicants in a 1-year program. The breakdown is shown in Table 7 below.

[16] It should also be noted that the applicants for the adult trainings and the short-term trainings that vocational schools offer were not included in the study.

Table 7. Number of Applicants by Program*

	1-Year Program		
	Rejected	**Accepted**	**Overall**
Frequency	106	1,101	1,207
Percentage	8.8	91.2	100
	2-2.5 Year Program		
	Rejected	**Accepted**	**Overall**
Frequency	2,490	8,543	11,033
Percentage	22.6	77.4	100

* 10 applicants applied for a 6 month program

Looking at Figure 3, which shows the differences between the numbers of applicants per year, it is clear that the first year of the admissions survey, had the largest group and that the numbers of applicants decreased over time. There were 5,050 applicants in 2010, 3,853 applicants in 2011, and 3,347 applicants 2012. This is most likely the result of the overall decrease in the number of graduates from basic and high school which occurred during this time. These numbers can be seen in Figure 4 below. In addition, the number of students going to educational institutes, colleges and universities increased over the same period, as shown in Figure 5. These two issues could have been the reason behind the decline in admissions applicants.

Figure 3. Number of Applicants by Year

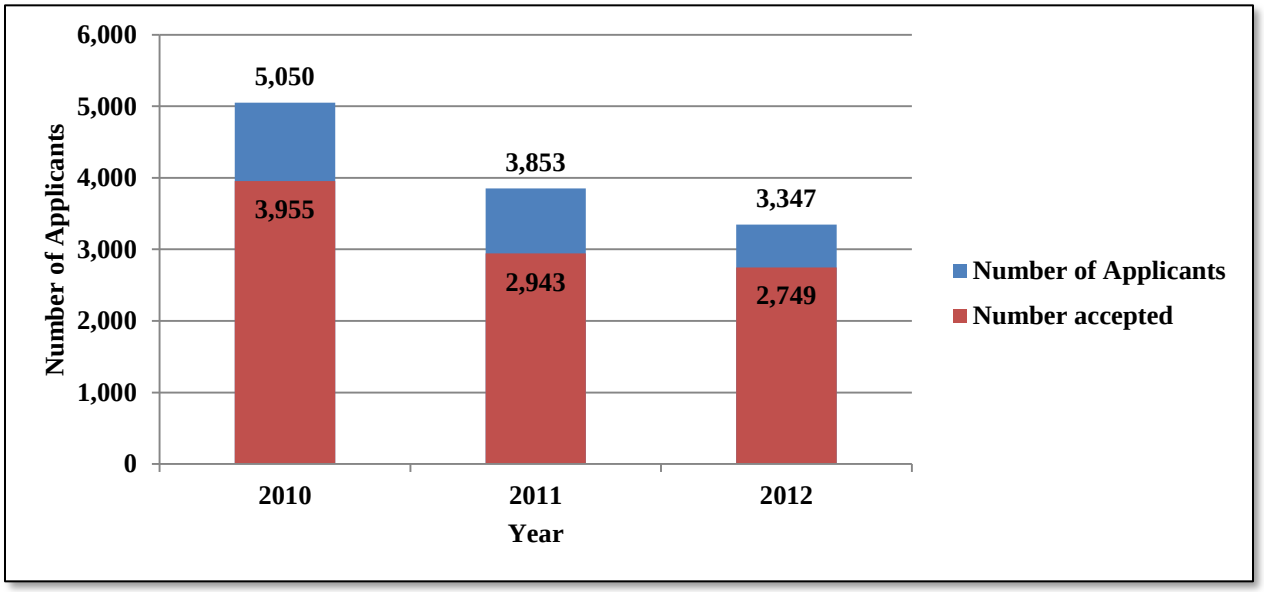


Figure 4. Number of General Education Graduates (1,000s)[17]

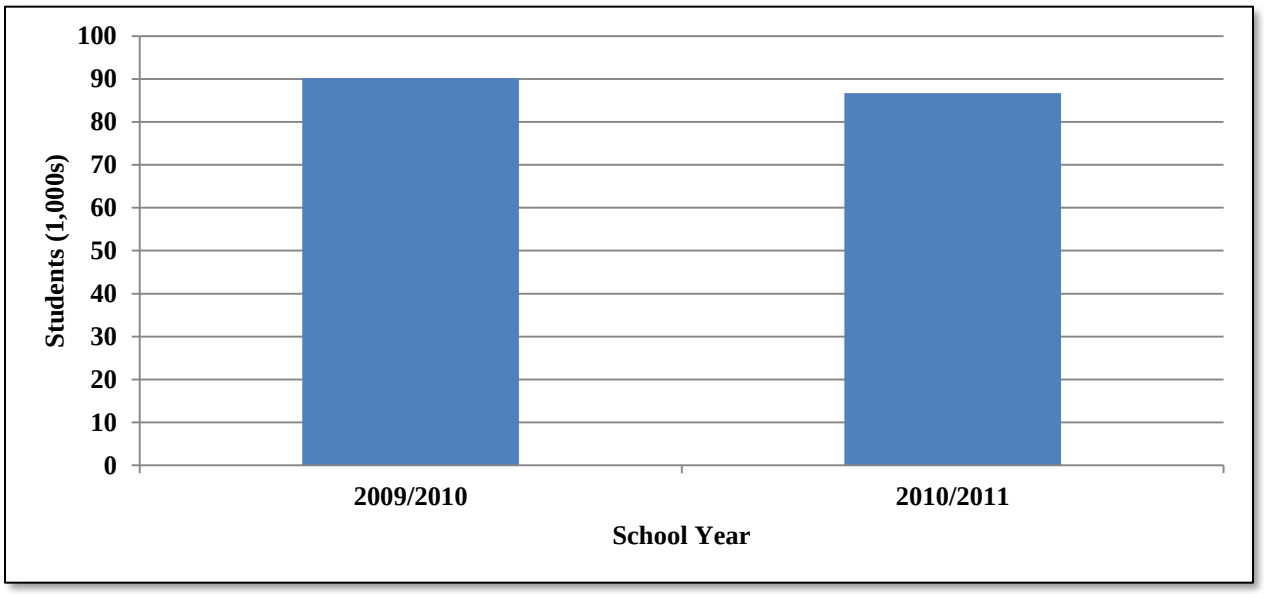
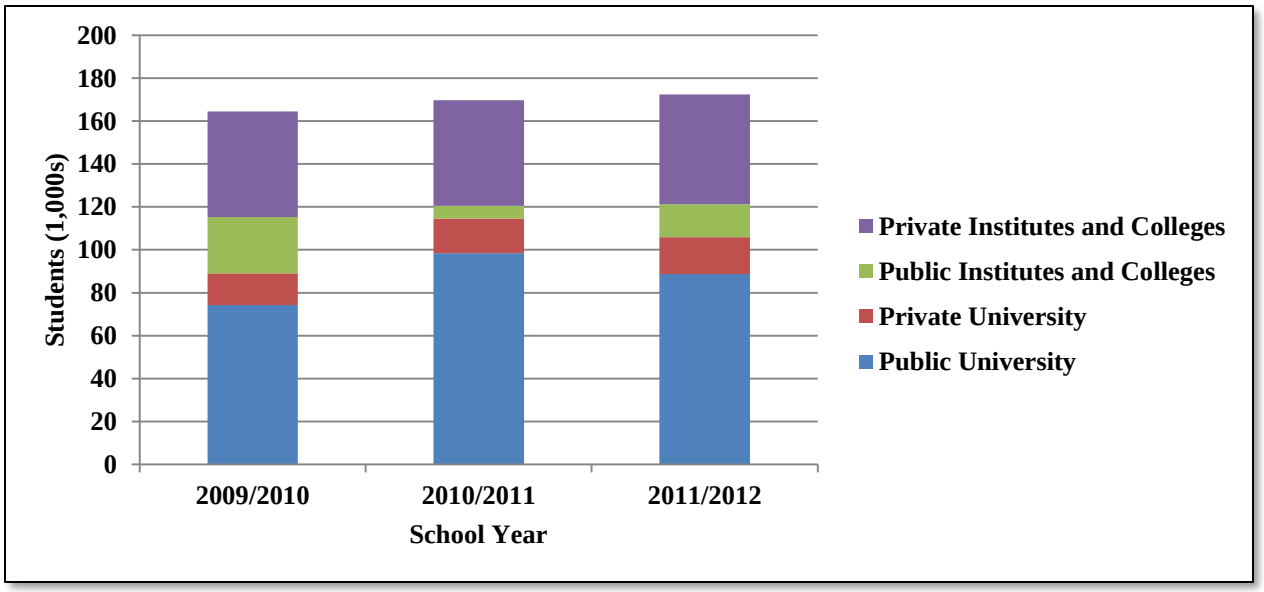


Figure 5. Number of Students Attending Public and Private Institutes, Colcolleges and Universities (1,000s)[18]



4. Number of Applicants by Trade

Table 8 below provides details on the number of applicants who were automatically accepted and those who were randomly accepted via the lottery in each trade. The most common trades in the 2/2.5-year program – the trades that had the highest number of accepted applicants – were construction related trades (construction and construction plumbing and welding). The most common trades in the 1-year program were the construction trade and the cook and food

[17] "Mongolian Statistical Yearbook 2011." Ulaanbaatar: *National Statistical Office of Mongolia*, 2012. 316-17. Print.
[18] "Mongolian Statistical Yearbook 2011." Ulaanbaatar: *National Statistical Office of Mongolia*, 2012. 316-17. Print.

production trade. The table provided only has the ten most common trades; the entire list can be seen in Appendix G.

Table 8. Number of Applicants Accepted into the Ten Most Common Trades, by Program Length*

2/2.5-Year Trades			1-Year Trades		
Trade Name	**Number of Accepted Applicants**	**Percent of Accepted Applicants**	**Trade Name**	**Number of Accepted Applicants**	**Percent of Accepted Applicants**
Construction	664	8.2	**Construction**	139	14.0
Construction Plumbing, Welding	601	7.4	**Cook, Food Production**	138	13.9
Automobile Repairs and Usage	592	7.3	**Automobile Repairs and Usage**	83	8.4
Electric, Gas Welding	546	6.7	**Hairdresser, Beautician**	75	7.6
Construction Decoration	527	6.5	**Construction Decoration**	59	6.0
Wood and Household Carpenter	521	6.4	**Construction Montage**	59	6.0
Cook, Food Production	490	6.0	**Environment Protection**	40	4.0
Sewing, Sewing Production	474	5.8	**Heavy Machine, Machinery Repairs**	40	4.0
Construction Montage	395	4.9	**Computer Operator (Secretary)**	40	4.0
Computer Operator (Secretary)	360	4.4	**Hairdresser (only)**	40	4.0

*The entire list can be found in Appendix G

5. Trade Popularity

Table 9 looks at the most popular trades – those most frequently ranked as the first choice trade by applicants – for applicants broken up into 2/2.5-year trades and 1-year trades. The most popular trades in the 2/2.5-year programs were the auto mechanic trade and the construction trade. The most popular trades in the 1-year program were the cook and food production trade and the hairdresser or beautician trade. The table provided has only the ten first choice trades; the entire list can be seen in Appendix H.

Table 9. Top Ten Trades Ranked as Applicants' First Choice, by Program Length*

2/2.5-Year Trades			1-Year Trades		
Trade Name	**Number of Applicants Who Ranked Trade as #1 Choice**	**Percent of Applicants**	**Trade Name**	**Number of Applicants Who Ranked Trade as #1 Choice**	**Percent of Applicants**
Automobile repairs, usage	1,327	11.5	**Cook, Food Production**	188	15.1
Construction	1,105	9.5	**Hairdresser, Beautician**	106	8.5
Computer Operator (Secretary)	938	8.1	**Construction**	99	7.9
Construction Decoration	930	8.0	**Automobile repairs, usage**	90	7.2
Cook, Food Production	898	7.8	**Accountant- financial assistant**	76	6.1
Welding	848	7.3	**Construction montage**	65	5.2
Construction Plumbing	820	7.1	**Circuit repair**	54	4.3
Construction montage	657	5.7	**Construction Decoration**	51	4.1
Sewing, sewing production	579	5.0	**Heavy machine equipment technician**	48	3.8
Wood and Household Carpenter	396	3.4	**Hairdresser (only)**	41	3.3

*The entire list can be found in Appendix H

B. Socio-Economic Status and Activities of Applicants

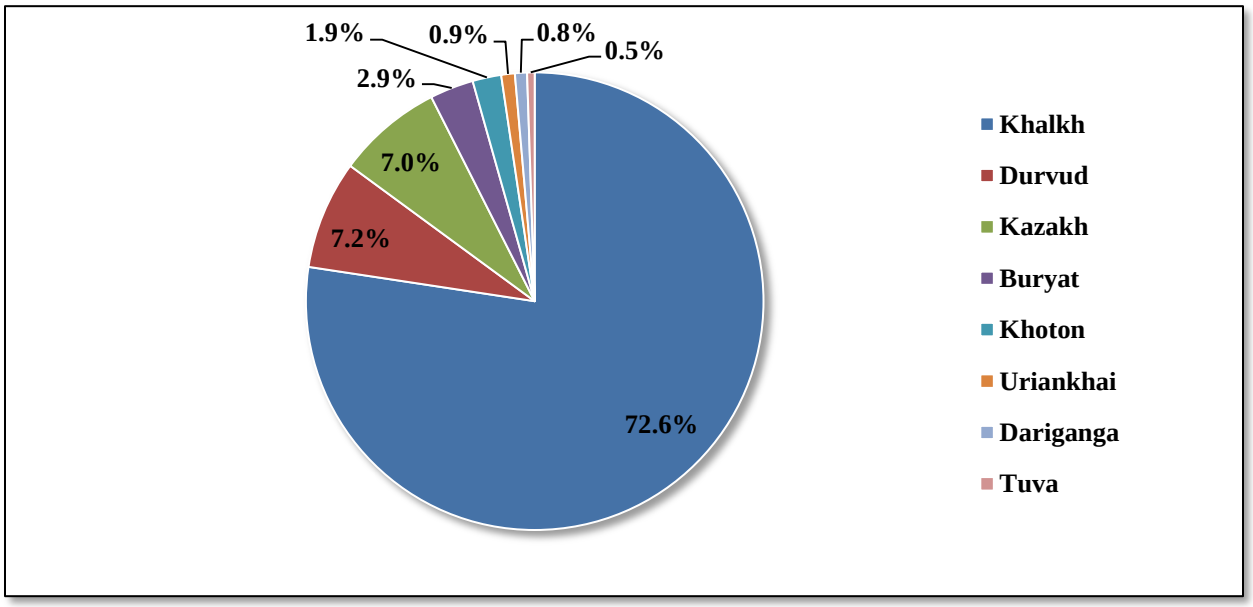
1. Basic Applicant Characteristics

The summary statistics presented in the following sections represent the applicants who met the schools' admissions criteria; it includes applicants who were accepted automatically due to preferred status and applicants who were part of admissions lottery. The average age of the applicant was between 16 and 17 years old. Males applied in slightly higher numbers than females. Approximately one percent of applicants were married or had children, while just over three percent had disabilities. Table 10 below provides additional summary statistics on the socioeconomic background of applicants. Figure 6 shows the breakdown of the ethnicity of applicants. The vast majority of applicants are of the Khalkh ethnicity (72.6%) with the Durvud ethnicity being a distant second (7.2%), followed by Kazakh (7%). Minority ethnicities are overrepresented in the sample, as Khalkh Mongolians constitute 82% of the population of Mongolia.[19] It should be noted that there are schools located in Uvs and Bayan-Ulgii aimags which is where the majority of Durvud and Kazakhs are settled geographically.

Table 10. Average Basic Applicants Characteristics

Variables	Overall
Applicant Age (Years)	16.5
Percentage of Male Applicants	60.2
Percentage of Married Applicants	0.9
Percentage with Children	1.1
Percentage of Applicants with Disability	3.2

Figure 6. Ethnicity of Applicants



[19] "Ястан үндэстний тоо." Registration Mongolia, n.d. Web. 20 Dec. 2012. <http://www.registrationmongolia.com/index.php?option=com_content&view=article&id=122:2009-06-19-06-31-47&catid=162:tand&Itemid=262>.

2. Education and Work Experience

Tables 11 and 12 summarize the applicants' educational experience. The average applicant had nine years of formal education and a GPA of 74 on a 100 point scale at the last school they attended. The average overall score for an applicant on the entrance exam was 34 percent. The applicants, on average, scored the highest on the essay section with 39 percent and lowest on the logic and problem solving section with an average score of 31 percent.

Table 11. Average Highest Level of Education Completed by Applicant at the Time of Application (Percentage)

Highest Level of Education (%)	1-Year	2/2.5-Year	Overall
Secondary Grade 8	0.5	2.9	2.6
Secondary Grade 9	16.3	95.6	87.7
Secondary Grade 10	3.7	0.3	0.6
Secondary Grade 11	72.2	0.9	7.9
Vocational	6.3	0.04	0.7
Total	100	100	100

Table 12. Grade Point Average (GPA) and Entrance Exam Scores*

Variables	Overall
GPA (%)	74
Total Score (%)	34.3
Section 1. Mathematics (%)	36.5
Section 2. Logic and Problem Solving (%)	31.0
Section 3. Reading (%)	31.8
Section 4. Essay (%)	38.8

* The numbers were quite similar for both 1-year and 2.5-year applicants. However, 1-year applicants had a slightly higher GPA on average than 2.5-year applicants.

Tables 13 reviews the applicants' work experiences. Just over five percent of applicants had prior paid work experience. Of those five percent, about 30 percent worked for a family business. Those that worked received on average 237,000 MNT per month and worked on average 220 hours.

Table 13. Applicants' Work Experience*

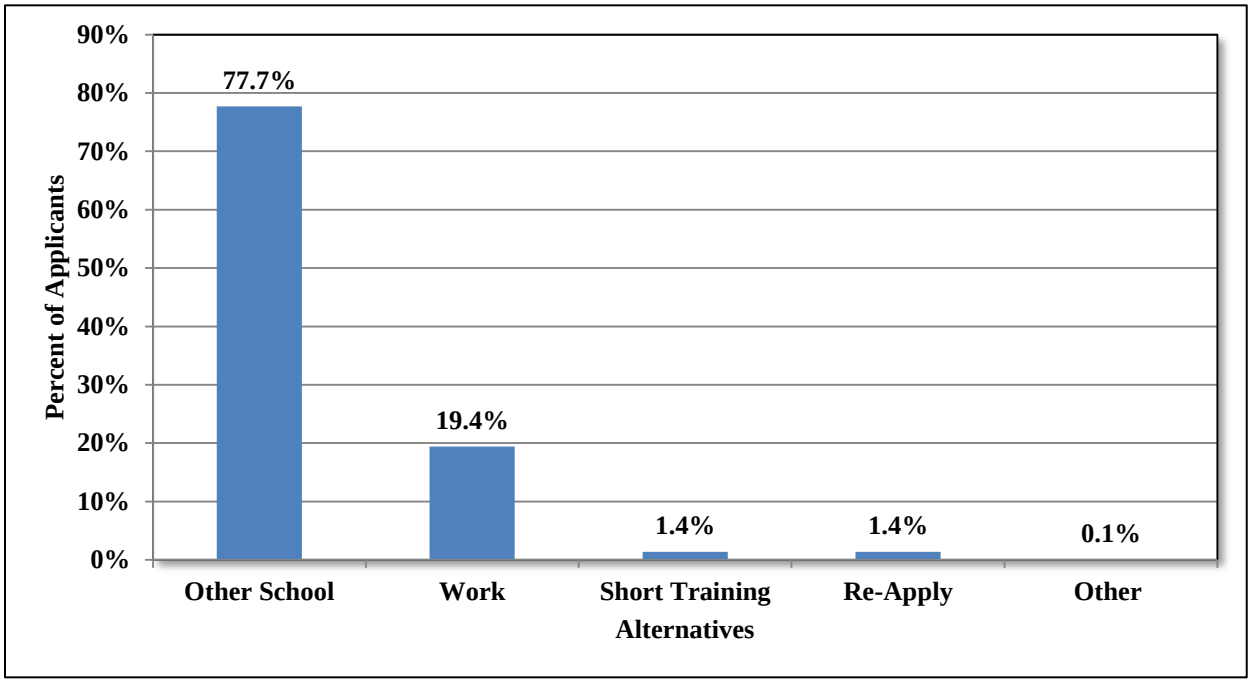
Variables	Overall
Percentage with Paid Work Experience	5.3
Percentage Worked for Family Business if Applicant Worked	30.4
Salary Received per Month if Applicant Worked (in 1000s of MNT)	237
Hours Worked per Month if Applicant Worked	220

* The numbers were quite similar for both 1-year and 2.5-year applicants. However, there were a higher percentage of 1-year applicants with paid work experience.

3. Employment and Education Prospects

Figure 7 below lists applicants' alternative plans if they are not accepted by the lottery process. The majority (78%) of students said they would go to another school. The second highest response was that they would find a job and work (19%). The remaining applicants said they would apply to a short-term training program or re-apply to the same school the following year.

Figure 7. Alternative Plans if Not Accepted During the Lottery



For applicants who indicated that they would attend a different school if they were not accepted in the lottery process, just over half said they would attend a vocational school, as can be seen in Table 14. Most of the remainder said they would attend high school, while less than four percent would attend university. Twelve percent of these applicants indicated that they would work while attending the other school.

Table 14. Plans for Studying if Not Accepted

		Frequency	Percentage
Type of School	**Another Vocational School**	4,719	50.6
	High School	4,197	45.0
	University	348	3.7
	Other	69	0.7
	Will work while studying	1,069	11.7

Table 15 examines the income (from any source) applicants expected to receive while attending the evaluation school, if accepted. Almost all applicants (94%) said they would have some income if accepted, while the average expected monthly income was 49,000 MNT. This is not surprising, since the government provides a monthly stipend of 45,000 MNT to all students attending evaluation schools.

Table 15. Income of Applicants while attending an evaluation school

Variables	Overall
Percentage Who Will Receive Income (%)	94
Average Income per Month (in 1000s of MNT)	49

Table 16 shows applicants' desired sector of employment after graduation. The majority of applicants wanted to work in the government sector (46.8%) after they graduated. The next two most popular sectors were the private sector (18%) and self-employment (16.7%). Additionally, 0.8 percent of all applicants had guaranteed employment after graduation.

Table 16. Desired Employment Sector after Graduation from evaluation schools*

Employment Sector	Percent
Government (%)	46.8
Private Company (%)	18.0
Self-Employed (%)	16.7
Will Not Work (%)	10.6
NGO (%)	5.0
International Org. (%)	2.6
Other Sectors (%)	0.3

*The numbers were quite similar for both 1-year and 2.5-year applicants.

Applicants were much more optimistic about their employment prospects if they were admitted to their first-choice trade compared with not being admitted to any trade. As can be seen in Table 17, applicants expected to spend 0.9 fewer months (27 fewer days) searching for a job if they were admitted to their first choice trade, and expected to earn a monthly wage that was 54,000 MNT (about 31 USD) higher. These findings indicate that applicants were aware of the labor market benefits of vocational education.

Table 17. Expected Employment Prospects

	Average Expected Months Searching for Job	Average Expected Monthly Wage (MNT)
If Admitted to First-Choice Trade*	2.5	352,000
If Not Admitted to Any Trade	3.4	294,000

*For applicants who are admitted, these numbers apply to the time after graduation

C. Household Information

1. Household Member Characteristics

Table 18 summarizes the household size and household head characteristics. The average number of people living in the applicant's household is 5.2 household members. The majority of household heads completed grade eight or grade ten, while only roughly eight percent of heads total completed grades 9 or 11.

Table 18. Average Applicant Household Size and Household Head Characteristics

Variables	Overall
Number of People Living in Applicant Household	5.19
A Household Member Raises Livestock (%)	43.2
Household Head Worked at Time of Application (%)	55.1
Highest Education Level of Household Head:	
Secondary Grade 8 (%)	34.3
Secondary Grade 10 (%)	20.9
Secondary Grade 11 (%)	2.2
Vocational (%)	18.7
Bachelor (%)	4.7
Masters (%)	0.1
Non-official education (%)	0.2
No education (%)	0.6

2. Household Income and Assets

Overall, the applicants are from poor families as summarized in Table 19, with just over half of household heads working at the time of the application. According to Household Socio-Economic Survey of 2011 conducted by Mongolia's National Statistics Office, the national

average household monetary income was 453,000 MNT,[20] or roughly 324 USD.[21] Only 16.2 percent of the applicants' households had a monthly average income of between 300,001 MNT (~215 USD) and 500,000 MNT (~357 USD), while only 9.8 percent of households had an income of more than 501,000 MNT per month.

Table 19. Household Monthly Income

Monthly Income	Percentage
Below MNT 50,000 (%)	6.3
Between MNT 50,001 and MNT 100,000 (%)	16.2
Between MNT 100,001 and MNT 200,000 (%)	29.2
Between MNT 200,001 and MNT 300,000 (%)	22.4
Between MNT 300,001 and MNT 500,000 (%)	16.1
Greater than MNT 500,001 (%)	9.8

Almost all applicant households owned a television as shown in Table 20. Vacuum cleaners, motorcycles, automobiles of any kind, and satellite dishes were each owned by over 30% of households. The least common appliances were automobiles and computers. Nonetheless, one fifth of the households had a computer, which is quite high given that most of the applicants are not from Ulaanbaatar.

Table 20. Applicant Household Appliance and Transportation Vehicle Ownership

Appliance or Vehicle	Percent
Television (%)	93.6
Refrigerator (%)	57.1
Laundry machine (%)	48.3
Motorcycle (%)	34.4
Satellite dish (%)	32.0
Vacuum cleaner (%)	29.7
Automobile (%)	27.0
Computer (%)	20.2

3. Household Residency Status

Table 21 summarizes applicants' residency status and home structure type. Almost all applicant households owned their homes and almost 60 percent lived in gers. While gers have been traditionally used by nomadic herders, gers are also a common form of housing in city and town areas including Ulaanbaatar. About one third of the applicant households lived in private apartments while the remaining households lived in public apartments, which are typically of lower quality than private apartments, or other forms of housing such as sheds, houses, nursing homes and orphanages.

Table 21. Applicant Living Arrangements

Variables		Percent
Residency Status	**Own (%)**	96.8
	Rent (%)	3.0
Household Structure Type	**Ger (%)**	59.8
	Private Apartment (%)	33.9
	Public Apartment (%)	5.1
	Other (%)	1.1

[20] Batkhuyag, Badrakh. "Statistics Show That Household Income Has Increased." *Mongolia Business and Mongolian Daily Business News RSS*. Business Mongolia, 10 June 2011. Web. 15 Dec. 2012.
[21] Using Dec. 2012 exchange rate of 1,400 MNT to 1 USD

D. Gender Analysis

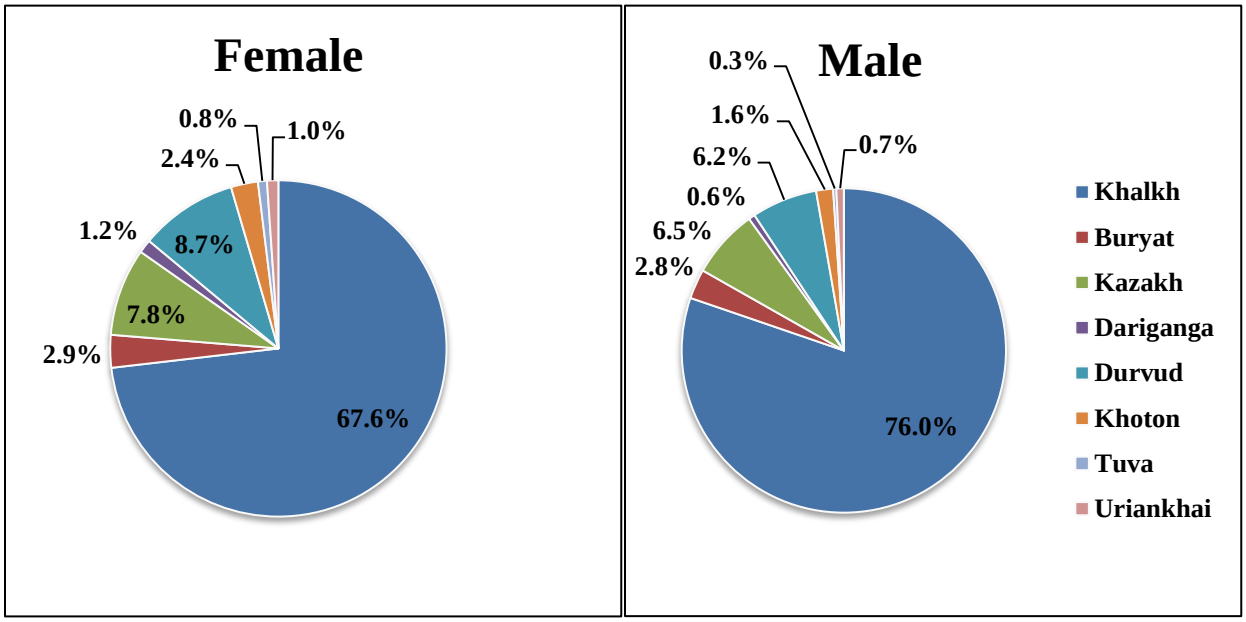
1. Basic Applicant Characteristics by Gender

Table 22 and Figure 8 describe the applicant's basic characteristics and ethnicity, respectively, by gender. Female applicants were approximately 5.5 months older than males, on average, and more females (but still fewer than two percent) were married or had children. More females than males had some kind of disability at the time of the application by about one percentage point. Substantially more males than females (76% versus 68%) were of the majority Khalkh ethnicity.

Table 22. Average Basic Applicant Characteristics by Gender

Variables	Female	Male
Applicant Age (Years)	16.72	16.27
Percentage of Married Applicants (%)	1.6	0.5
Age of Married Applicants (Years)	21.7	20.4
Percentage with Children (%)	1.9	0.5
Age with Children (Years)	22.3	20.2
Percentage of Applicants with Disability (%)	3.9	2.7

Figure 8. Average Ethnicity of Applicants by Gender (Percentage)

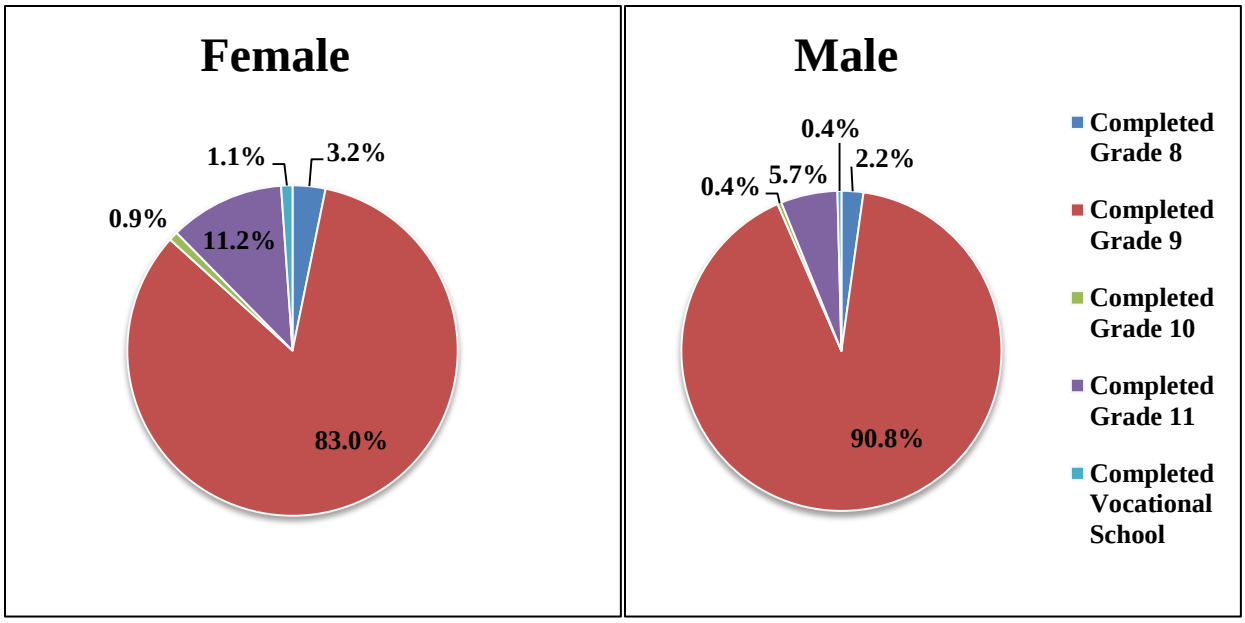


2. Education and Work Experience by Gender (includes test scores and GPA)

Figure 9 illustrates the applicant's education level. A higher percentage of male applicants finished the ninth grade, while a higher percentage of females finished the eleventh grade. This could be an indication that more females plan to pursue a college degree in the future. This is consistent with a common finding that overall, more Mongolian females attend college than their male counterparts.[22]

[22] Benson, Linda, Ph.D. "Mongolian Women in an Era of Transition." http://www.ucis.pitt.edu/mongolia/pdfs/lbenson_essay.pdf. N.p., n.d. Web. 20 Oct. 2012.

Figure 9. Average Highest Level of Education Completed by Applicant at the Time of Application by Gender (Percentage)



While female applicants had a higher average GPA by 1.6 percentage points, they scored 0.6 percentage points lower overall on their entrance exam score as illustrated in Table 23. Females scored higher in the essay section by 10 percentage points but male applicants scored higher in mathematics and logic and problem solving sections. Female and male applicants shared almost the same average for the reading section.

Table 23. Grade Point Average (GPA) and Entrance Exam Scores by Gender

Variables	Female	Male
GPA (%)	75.3	73.7
Total Score (%)	34.0	34.6
Section 1. Mathematics (%)	33.6	38.4
Section 2. Logic and Problem Solving (%)	28.7	32.5
Section 3. Reading (%)	31.9	31.7
Section 4. Essay (%)	44.8	34.8

The most striking point from Table 24 is that females who had paid work experience before applying, had worked, on average, 15.7 more hours per month, while they earned 78 thousand MNT (about 56 USD) less per month than their male counterparts. Furthermore, a higher percentage of males worked for pay than females by the time of the application by 1.4 percentage points. Thirty-two percent of males who had work experience worked for their family business while only 27 percent of females did.

Table 24. Applicants' Work Experience by Gender

Variables	Female	Male
Percentage with Paid Work Experience	4.4	5.8
Percentage Worked for Family Business if Applicant Worked	26.9	32.2
Salary Received per Month if Applicant Worked (in 1000s of MNT)	185.6	263.7
Hours Worked per Month if Applicant Worked	230.5	214.8

Table 25 examines applicants' post-graduation job preferences and the expected income to be received while attending evaluation schools broken down by gender. The most common job sector preference after graduating from an evaluation school for both genders was government, which was selected by nearly half of both males and females. The only recognizable difference in the preference of male and female applicants is that a slightly higher percentage of males wanted to work for a private company compared to female applicants, while a slightly higher percentage of females wanted to be self-employed. Both female and male applicants expected to receive about 50,000 MNT per month upon admission into evaluation schools and about 94 percent of both males and females expected to receive some kind of funding.

Table 25. Desired Job Sector Post Graduation of Evaluation Schools by Gender

Variables	Female	Male
Percentage with Guaranteed Work after Graduation (%)	3.1	4.7
Percentage Who Want to Work in Government (%)	46.8	46.8
Percentage Who Want to Work in NGO (%)	5.2	4.8
Percentage Who Want to Work in Private Company (%)	16.1	19.3
Percentage Who Want to be Self-Employed (%)	18.9	15.3
Percentage Who Want to Work in International Org. (%)	2.8	2.5
Percentage Who Plan Not to Work (%)	9.9	11.0
Percentage Who Want to Work in Other Sectors (%)	0.3	0.3
Funds Received by Applicants Upon Admissions into evaluation school by Gender		
Percentage Who Will Receive Funds (%)	94.3	94.0
Funds to be Received (in thousands of MNT)	50.5	48.2

3. Household Information by Gender

Table 26 summarizes household size and household head characteristics by gender of applicant. Female applicants lived in slightly larger households, with 5.4 people on average compared with 5 for males. Overall, household heads with a male applicant are more educated than household heads with a female applicant as summarized in Table 26. Table 26 displays the same pattern as described in Table 18 with over half of household heads completing grades eight or 10 while only six to seven percent of both male and female applicant household heads completed grades nine or 11. Interestingly, household heads with a male applicant had a higher percentage of those who completed vocational or bachelor's degrees than did household heads with a female applicant, on average.

Table 26. Average Applicant Household Size and Household Head Characteristics by Gender

Variables	Female	Male
Number of People Living in Applicant Household	5.4	5.0
Highest Education Level of Household Head:		
Secondary grade 8 (%)	36.2	33.0
Secondary grade 10 (%)	18.9	22.2
Secondary grade 11 (%)	2	2.3
Vocational (%)	16.4	20.3
Bachelor (%)	3.3	5.6
Masters (%)	0.2	0.1
Non-official education (%)	0.2	0.1
No education (%)	0.6	0.6

Table 27 illustrates household heads' employment status and monthly income broken down by gender. Household heads of male applicants were more likely to work by eight percentage points than household heads of female applicants. Female applicants were more likely to live in households where at least one member herded livestock. Overall, household income appears to

be more evenly distributed among households with a female applicant while a higher number of households with a male applicant were in the higher income categories. Caution is warranted in interpreting these results; since the applicants typically were not the primary income earners in their households, they may not have full knowledge of their household's income. Thus, observed differences may be due to differing perceptions between boys and girls of their household's income rather than actual income differences.

Table 27. Household Head Employment Status and Average Household Monthly Income by Gender

Employment and Income Status	Female	Male
Household Head Worked at time of Application (%)	50.8	58
Household Member Raises Livestock (%)	48.1	39.9
HH Income below MNT 50,000 (%)	8.0	5.2
HH Income between MNT 50,001 and MNT 100,000 (%)	18.9	14.4
HH Income between MNT 100,001 and MNT 200,000 (%)	32.6	26.9
HH Income between MNT 200,001 and MNT 300,000 (%)	21.9	22.7
HH Income between MNT 300,001 and MNT 500,000 (%)	13.1	18.1
HH Income Greater than MNT 500,001 (%)	5.5	12.7

Table 28 shows that almost across the board, households with male applicants owned more types of assets than did households with female applicants. The only assets that female applicant households owned more of were satellite dishes and motorcycles, appliances which would be more closely associated to applicants who live in gers. The most commonly owned asset for both female and male applicant households was a TV with over 90 percent ownership for each gender. There are big gaps between male and female household asset ownership status. For example 54.8 percent of male applicant households owned at least one laundry machine while only 38.4 of female applicant households did; 25.1 percent of male applicant households owned at least one computer, while only 12.6 percent of female applicant households did.

Table 28. Applicant Household Appliance and Transportation Vehicle Ownership by Gender

Employment and Income Status	Female	Male
Automobile (%)	22.7	29.9
Computer (%)	12.6	25.1
Laundry machine (%)	38.4	54.8
Motorcycle (%)	36.4	33
Refrigerator (%)	47.8	63.2
Satellite dish (%)	33.2	31.1
Television (%)	91.5	95
Vacuum cleaner (%)	20.9	35.5

Table 29 summarizes applicant household's residency status and type of home by gender. Residency status is almost identical: 97 percent of households with a female applicant and 96.6 percent of households with a male applicant owned their home while the rest rented their homes. One major difference between the genders is that there are more female applicant households who lived in gers (65%) than male applicant households did (56%). On the other hand, more male applicant households lived in either a regular or public apartment structure (42.5%) than did female applicant households (33.8%) providing further evidence those male applicant households tended to be wealthier than female applicant households.

Table 29. Applicant Residency Status and Applicant Household Structure by Gender

Variables		Female	Male
Residency Status	**Own (%)**	97	96.6
	Rent (%)	2.8	3.2
Household Structure	**Ger (%)**	65	56.3
	Regular Apartment (%)	30.2	36.4
	Public Apartment (%)	3.6	6.1
	Other Structure (%)	1.1	1.1

4. Number of Applicants by Gender and Trade

Table 30 gives a breakdown of applicants accepted and rejected into the evaluation schools by gender. Overall there were more male applicants (7,369) than female applicants (4,881). However, a slightly higher percentage of female applicants were rejected (22%) than male applicants (20.7%). Female and male applicants were accepted via randomized lottery to very different trades. Tables 30 and 31 list the top ten 1-year and 2/2.5-year trades that applicants got accepted to respectively by gender. The only trades in the top ten lists for 1-year trades that were common between the two genders are Computer Operator, Construction Decoration, and Construction; for the 2/2.5-year trades, the common trades were Computer Operator and Construction. It appears that female applicants got accepted to trades that require less heavy manual labor work than male applicants. The top three 1-year trades for female applicants were Cook/Food Production, Hairdresser/Beautician, and Construction Decoration; the top three 2/2.5-year trades were Sewing, Cook/Food Production, and Construction Decoration. The top three trades among male applicants for 1-year trades were Construction, Automobile Repairs and Usage, and Construction Montage; for 2/2.5-year trades, they were Construction Plumbing and Welding, Automobile Repair and Usage, and Electric and Gas Welding.

Table 30. Applicants Acceptance and Rejection Numbers by Gender

	Female Applicants			Male Applicants		
	Rejected	**Accepted**	**Overall**	**Rejected**	**Accepted**	**Overall**
Frequency	1,079	3,802	4,881	1,524	5,845	7,369
Percentage	22.1	77.9	100	20.7	79.3	100

Table 31. Number of Applicants Accepted into 1-Year Trades by Gender

Rank	Trade Name	Number of Accepted Females	Percent of Accepted Females	Trade Name	Number of Accepted Males	Percent of Accepted Males
1	**Cook, Food Production**	130	21.6	**Construction****	99	19.8
2	**Hairdresser, Beautician**	66	11.0	**Automobile repairs, usage**	79	15.8
3	**Construction Decoration****	44	7.3	**Construction montage**	48	9.6
4	**Construction****	40	6.7	**Electric, Gas Welding**	37	7.4
5	**Hairdresser (only)**	36	6.0	**Heavy Machine, Machinery Repairs**	36	7.2
6	**Sewing, sewing production**	35	5.8	**Circuit repair**	19	3.8
7	**Environment protection**	33	5.5	**Construction Plumbing**	18	3.6
8	**Computer Operator (Secretary)****	26	4.3	**Construction Decoration****	15	3.0
9	**Leather art**	25	4.2	**Electrical machine installer**	15	3.0
10	**Soft material tailor, sewer**	23	3.8	**Computer Operator (Secretary)****	14	2.8

** Shared by both genders

Table 32. Number of Applicants Accepted into 2/2.5-Year Trades by Gender

Rank	Trade Name	Number of Accepted Females	Percent of Accepted Females	Trade Name	Number of Accepted Males	Percent of Accepted Males
1	**Sewing, sewing production**	448	14.0	**Construction Plumbing, Welding**	584	10.9
2	**Cook, Food Production**	429	13.4	**Automobile repairs, usage**	576	10.8
3	**Construction Decoration**	390	12.2	**Electric, Gas Welding**	539	10.1
4	**Computer Operator** (Secretary)**	213	6.7	**Wood and Household Carpenter**	507	9.5
5	**Construction****	202	6.3	**Construction****	462	8.6
6	**Hairdresser, Beautician**	160	5.0	**Construction montage**	330	6.2
7	**Weaving machine operator**	86	2.7	**Concrete Reinforcement**	197	3.7
8	**Shoe making**	82	2.6	**Lathing**	163	3.0
9	**Trade worker**	75	2.3	**Light Industry Machinery Repairs, Welding**	158	3.0
10	**Environment protection**	69	2.2	**Computer Operator** (Secretary)**	147	2.8

**Shared by both genders

5. Trade Popularity by Gender

The difference in trade preferences between female and male applicants is shown in Tables 33 and 34. Females tended to rank trades that required less heavy manual labor first than did males. The common trades between female and male applicants' top ranked trades for 1-year trades are Construction, Construction Montage, and Computer Operator. Female applicants ranked Cook/Food Production, Hairdresser/ Beautician, and Construction Decoration for 1-year trades; male applicants ranked Automobile Repairs and Usage, Construction, and Accounting as the top three trades. For 2/2.5-year trades, female applicants ranked Cook/Food Production, Construction Decoration, and Sewing as the top three while the top three trades for males were Automobile Repairs/Usage, Welding, and Construction Plumbing. Not all applicants had option of ranking any of the trades offered at their application school. Four out of the ten evaluation schools offered trades that were gender-specific, and only applicants of the specified gender were considered for those trade programs.

Table 33. Top Ten 1-Year Trades Ranked as Applicants' First Choice by Gender

Rank	Trades	Female	Percent of Female Applicants	Trades	Male	Percent of Male Applicants
1	**Cook, Food Production**	178	26.5	**Automobile repairs, usage**	85	15.9
2	**Hairdresser, Beautician**	92	13.7	**Construction****	66	12.3
3	**Construction Decoration**	38	5.7	**Accountant- financial assistant**	62	11.6
4	**Sewing, sewing production**	37	5.5	**Heavy machine equipment technician**	43	8.0
5	**Hairdresser (only)**	36	5.4	**Circuit repair**	38	7.1
6	**Construction****	33	4.9	**Welding**	36	6.7
7	**Construction montage****	29	4.3	**Construction montage****	36	6.7
8	**Leather art (hand-made art)**	26	3.9	**Secretary**	22	4.1
9	**Computer Operator (Secretary)**	25	3.7	**Construction Plumbing**	18	3.4
10	**Trade worker**	23	3.4	**Electrical machine installer**	16	3.0

**Shared by both genders

Table 34. Top Ten 2/2.5-Year Trades Ranked as Applicants' First Choice by Gender

Rank	Trades	Female	Percent of Female Applicants	Trades	Male	Percent of Male Applicants
1	**Cook, Food Production**	792	18.9	**Automobile repairs, usage**	1,315	19.2
2	**Construction Decoration****	592	14.1	**Welding**	834	12.2
3	**Sewing, sewing production**	559	13.3	**Construction Plumbing**	803	11.8
4	**Computer Operator** (Secretary)**	531	12.6	**Construction****	790	11.6
5	**Hairdresser, Beautician**	330	7.9	**Construction montage**	611	8.9
6	**Construction****	315	7.5	**Computer Operator** (Secretary)**	407	6.0
7	**Environment protection**	130	3.1	**Wood and Household Carpenter**	392	5.7
8	**Soft material tailor, sewer**	125	3.0	**Construction Decoration****	338	4.9
9	**Leather, suedette material tailor, sewer**	122	2.9	**Light Industry Equipment Repairs, Welding**	161	2.4
10	**Print Design**	101	2.4	**Agricultural farmer, driver**	120	1.8

** Shared by both genders

6. Alternatives by Gender

There are minimal differences between the alternative plans if applicants were not accepted through the lottery between genders as shown in Table 35. Seventy-seven and 78 percent of females and males respectively plan to attend another school; 20.2 and 18.8 percent of females and males respectively plan to work directly. Less than two percent of either female or male applicants plan to re-apply to the same evaluation school they applied to if they were not initially accepted.

Table 35. Alternative Plans if Not Accepted During the Lottery by Gender

Alternative	Female		Male	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Other School	3,698	76.8	5,628	78.3
Work	970	20.2	1,354	18.8
Short Training	78	1.6	94	1.3
Re-Apply	58	1.2	110	1.5
Other	11	0.2	4	0.1
Total	4,815	100	7,190	100

Among applicants who stated that they will apply to another school if not accepted to the evaluation school they initially applied to, 41.3 percent of females planned to attend another vocational school compared to 56.7 percent of males as seen in Table 36. While just over 52 percent of the female applicants planned to attend high school, only 40 percent of male applicants planned to do the same. As mentioned earlier, females seemed to be more likely to pursue university degrees than males did. Less than 6 percent of either females or males planned to go directly to university. The low figure can most likely be attributed to the requirement of completing 11 years of education prior to applying for university programs.

Table 36. Plans for Studying if Not Accepted by Gender

		Female		Male	
		Frequency	**Percentage**	**Frequency**	**Percentage**
Type of School	**Another Vocational School**	1,527	41.3	3,192	56.7
	High School	1,944	52.5	2,253	40
	University	202	5.5	146	2.6
	Other	28	0.8	41	0.7
	Will work while studying (%)	352	9.7	717	12.9

Table 37 looks at the expected months of searching for a job and expected wage per month if applicants were not accepted to their initial evaluation schools, compared to if they were accepted to their first choice trade. Overall, female applicants had slightly more negative employment expectations than did male applicants. In the case of not being admitted to any trade, females expected to spend about same time as males, 4 months, finding a job and earn 35,000 MNT less per month. In the case of being admitted to their first trade, females expected to spend 0.1 months (4 days) longer than males finding a job, and earn 26,000 MNT less per month.

Table 37. Expected Employment Prospects if Not Accepted by Gender

	Female		Male	
	Expected Months Searching for Job	**Expected Monthly Wage (MNT)**	**Expected Months Searching for Job**	**Expected Monthly Wage (MNT)**
If Admitted to First-Choice Trade*	3.95	228,000	3.82	254,000
If Not Admitted to Any Trade	3.90	208,000	3.94	243,000

*For applicants who will study, these numbers apply to the time after graduation

X. Balance Tests

As described in more detail in Section II C above, the admissions lotteries created two groups: those who were admitted to the school they applied to (the "treatment" group) and those who were not admitted (the "control" group). The lottery was designed to randomly determine whether each student would be accepted or not. This was designed to ensure that students in the treatment group and the control group are very similar to each other on average. This would not be the case in a standard admissions process where those who appear to be better students are most likely to be admitted. If these two groups are then similar in all respects, except that one group was offered admissions to an evaluation school, then we can conclude that any differences that emerge between the two groups are then the result of being admitted to an evaluation school. In practice, however, systematic differences, although unlikely, can result from the lottery process. And while we cannot compare the students along all dimensions, we can use the information from the admissions survey to assess the similarities of the two groups using the answers provided by the applicants. If these two groups are similar along these dimensions, it provides supporting evidence that the lottery process did indeed work as intended.

In a simple lottery in which students are assigned to be either admitted or not admitted with equal probability, the process of checking for balance between the groups is just to compare the average characteristics of the accepted students with those of the students who are not offered admissions. In the TVET admissions lotteries, however, all students did not have the same probability of being admitted because the probability of being admitted depended on the ranking of trades. Applicants with different trade rankings have different probabilities of being accepted.

This variation in the probability of acceptance requires us to use statistical techniques to hold the probability of acceptance constant while comparing admitted and non-admitted students.[23] To do this, we use a linear regression technique.[24] This corrects for the fact that some applicants are overrepresented in the treatment group because their trade ranking made them more likely to be admitted.

Table 38. Treatment Status of Applicants

Treatment Status	Number	Percent
Treatment	5,464	42.67
Control	2,603	20.33
Not Randomized	4,739	37.01
Total	12,806	100

The results of these comparisons are presented in Table 39. For the key socioeconomic and demographic variables collected on the admissions survey, the second column of the table gives the mean level of the variable for all applicants who were assigned to the control group. The third column gives the average difference of the variable between the treatment and control groups.[25] Of the 45 variables tested, there are 9 variables that display statistically significant differences. For example, number of household members of the applicants from the treatment group are smaller than the number of members from households of the applicants in the control group, but only by 0.13 members (significant at the one percent level), and 1.4% fewer treatment households had monthly incomes above 500,000 MNT (significant at the 10 percent level). However, none of these differences are large enough to suggest that the two groups are meaningfully different from each other. This is consistent with what one would expect from such a random assignment procedure. Overall, the evidence suggests that the lottery process functioned as expected.

[23] Only those students who had a probability of acceptance less than 100% are included in the balance tests below while the descriptive statistics presented in the sections above only represent those who qualified for the randomized lottery and those who were automatically enrolled. Only students who had a probability of acceptance less than 100% are included in the balance tests is because in some schools with relatively few applicants compared to available slots, some students were admitted with absolute certainty even though they nominally participated in the lottery. Thus, there was no true randomness in the assignment of these students to the treatment group. Additionally, some of the qualified applicants met the school-specific minimum criteria for "preferred" status and were automatically admitted. Table 38 shows the breakdown of all applicants by whether they were in the Treatment Group, the Control Group, or were not randomized and thus not included in either group for the purpose of analysis.

[24] Specifically, linear, quadratic and cubic forms of the probability of acceptance by lottery were added into a linear regression, with school-year-program fixed effects. Formally, the model estimated is of the form:

$y_{ijkl} = \alpha_{jkl} + \beta TREATMENT_{ijkl} + \gamma_1 z_{ijkl} + \gamma_2 z_{ijkl}^2 + \gamma_3 z_{ijkl}^3 + \epsilon_{ijkl}$

Where y_{ijkl} is the value of the variable being tested, z_{ijkl} is the probability of being in the treatment group for applicant i in school j, year k, and program l, α_{jkl} is the school-year-program fixed effect and ϵ_{ijkl} is an idiosyncratic error term. The estimated values of β are reported in the rightmost column of Table 39. The task of using linear regression to control for probability of acceptance is not entirely straightforward and a choice must be made between several potential models. Though this paper reports the results of the specification above, the main findings are robust to using alternative regression models including inverse probability weighting.

[25] Since each lottery was conducted by school for each year and each program (1-year vs. 2/2.5-year programs), the estimates include controls ("fixed effects") for each year-school-program combination.

Table 39. Results of Balance Tests

Variable	Mean[1]: Control Group	Difference[2]: Treatment–Control (std. error)
Age	16.16	-0.00
		(0.03)
Male (%)	59.14	0.20
		(1.24)
Has A Disability (%)	3.57	-0.01
		(0.47)
Has Prior Work Experience (%)	4.35	-0.31
		(0.54)
Applicant Years of Schooling	9.04	-0.02*
		(0.01)
Applicant GPA (Out of 100)	74.04	0.01
		(0.17)
Percent Correct on Entrance Exam (Math section)	37.6	-0.93
		(0.57)
Percent Correct on Entrance Exam (Logic and Problem Solving section)	31.02	0.11
		(0.50)
Percent Correct on Entrance Exam (Reading section)	31.78	-0.00
		(0.69)
Percent Correct on Entrance Exam (Essay section)	39.88	-0.24
		(0.66)
Percent Correct on Entrance Exam (Overall)	34.89	-0.29
		(0.38)
Head of Household is Applicant's Father (%)	76.28	-2.07*
		(1.15)
Household Head Years of Schooling	8.84	0.06
		(0.06)
Household Head is Employed (%)	57.07	-2.26*
		(1.26)
Number of Household Members	5.1	-0.13***
		(0.04)
Lives in Ger (%)	61.86	-1.07
		(1.18)
Owns Home (%)	96.43	0.02
		(0.49)
A Family Member Practices the First Choice Trade (%)	7.15	0.30
		(0.71)
Monthly Family Income is Below 50,000 MNT (%)	5	1.17*
		(0.62)
Monthly Family Income is Between 50,000 and 100,000 MNT (%)	13.65	0.47
		(0.93)
Monthly Family Income is Between 100,000 and 200,000 MNT (%)	25.91	-0.49
		(1.18)
Monthly Family Income is Between 200,000 and 300,000 MNT (%)	21.49	0.10
		(1.10)

***** Significant at 99% level**
**** Significant at 95% level**
*** Significant at 90% level**
[1]The second column gives the average value for the control group
[2]The third column gives the coefficient on the "Treatment" indicator variable from a linear regression as described in the text

Table 39 (Continued)

Variable	Mean[1]: Control Group	Difference[2]: Treatment–Control (std. error)
Monthly Family Income is Between 300,000 and 500,000 MNT (%)	17.14	0.81
		(0.98)
Monthly Family Income is Over 500,000 MNT (%)	11.78	-1.40*
		(0.77)
Expected Monthly Income While in School (1000's of MNT)	44.78	-0.20
		(0.37)
Expected Monthly Income After Graduation if Admitted to First Choice Trade (1000's of MNT)	358.58	-17.72***
		(4.51)
Expected Time Spent Searching for a Job After Graduation if Admitted to First Choice Trade (Months)	2.36	0.01
		(0.06)
Will Attend Another School if Not Admitted (%)	78.88	1.38
		(1.05)
Expected Monthly Income After Graduation if Not Admitted (1000's of MNT)	290.75	-5.98
		(4.98)
Expected Time Spent Searching for a Job if Not Admitted (Months)	3.33	0.02
		(0.12)
A Household Member Owns Livestock (%)	40.05	-1.28
		(1.26)
Number of Cows Owned	3.01	-0.18
		(0.20)
Number of Goats Owned	34.52	-1.11
		(1.82)
Number of Horses Owned	3.98	-0.06
		(0.27)
Number of Sheep Owned	30.44	-3.06
		(1.91)
Number of Camels Owned	0.79	-0.11
		(0.09)
Owns an Automobile (%)	29.53	-1.24
		(1.22)
Owns a Computer (%)	24.44	-0.27
		(1.05)
Owns a Clothes-Washing Machine (%)	52.71	2.35*
		(1.27)
Owns a Motorcycle (%)	33.31	-0.96
		(1.19)
Owns a Refrigerator (%)	61.11	-0.27
		(1.21)
Owns a Satellite Dish (%)	30.37	-1.63
		(1.21)
Owns a Television (%)	94.83	-1.26*
		(0.65)
Owns a Vacuum Cleaner (%)	33.64	1.22
		(1.20)

***** Significant at 99% level**
**** Significant at 95% level**
*** Significant at 90% level**
[1]The second column gives the average value for the control group
[2]The third column gives the coefficient on the "Treatment" indicator variable from a linear regression as described in the text

XI. Remaining Risks to the Study

While the results in the previous section suggest that the lotteries successfully generated comparable sets of students who were admitted and rejected from the evaluation schools, there still remain several potential risks to the evaluation:

A. Insufficient Power

We based the power calculations used to select the sample size on a number of assumptions, including, for example, the distribution of wages and employment rates of TVET program graduates. If these assumptions prove overly optimistic, the estimates of the treatment effects could prove too imprecise to detect meaningful changes in these outcomes. This could happen, for example, if the variance of graduates employment rates or wages proves larger than expected.

B. Lottery Compliance

According to the evaluation design, admissions to the 10 evaluation schools were randomized for qualified applicants and some applicants were admitted to their preferred trades while some applicants were rejected. We expect some students not to comply with the outcome of the lottery. However, if admitted students choose not to attend or rejected students are able to enroll in violation of the lottery in sufficiently large numbers, the power of study could be significantly diminished. Our first opportunity to assess whether students comply with the lottery will be the Graduate Follow-Up Survey conducted for the 2010 cohort in 2013. This data will be analyzed in the fall of 2013.

C. External Validity

In addition to the risks to internal validity, there are aspects of the evaluation that may compromise the study's external validity. Because the randomization relied on oversubscription of the evaluation schools, the evaluation schools may differ in meaningful ways from the non-evaluation schools. The school characteristics being collected as part of the 2013 Administrative Survey will allow us to compare the 10 evaluation schools to the other project schools. We plan to use these characteristics and their correlation with the observed treatment effects to estimate the impact of the equipment upgrades at all project schools.

XII. Conclusion and Next Steps

The admissions survey dataset described in this document gives extensive information on the demographic, educational, and economic background of all applicants to a selection of 10 schools. The schools represent areas from all around Mongolia, including students from every aimag, and have a more ethnically diverse set of students than the country as a whole. Slightly less than half of students come from herder households. These facts suggest that although the sample comprises a non-random sample of schools, the dataset provide information on a wide range of Mongolian students interested in a vocational education. As a result, this dataset could be of significant use to anyone interested in generating statistics on potential applicants to vocational schools in Mongolia, including other researchers, government officials, and even school administrators.

The data also suggest that the ongoing evaluation of the evaluation schools is progressing successfully. Using the dataset on all applicants to the schools, we conducted a series of statistical tests that verify the viability of the proposed research design, confirming that the admissions lotteries successfully created similar groups of admitted and non-admitted students. Subsequent surveys to track and provide outcome data on students has already begun. We conducted a tracking survey for the 2010 cohort in 2012 and recently completed the first follow-up survey for that cohort as well. We also recently completed a tracking survey for the 2011 cohort. The next step in the evaluation process will be to analyze these data to reassess the compliance rates and overall power of the study. We will also assess the final round of the administrative survey to assess the likely external validity of the work.

Finally, since many of the schools that participated in the admissions lottery process have decided that they want to continue using this method to admit students, the results presented in this report suggest that this strategy is a viable approach for assessing these schools in the future. If they continue with this plan, these future lotteries could provide an excellent source of random variation for additional research on vocational education, including additional impact evaluations.

XIII. Bibliography

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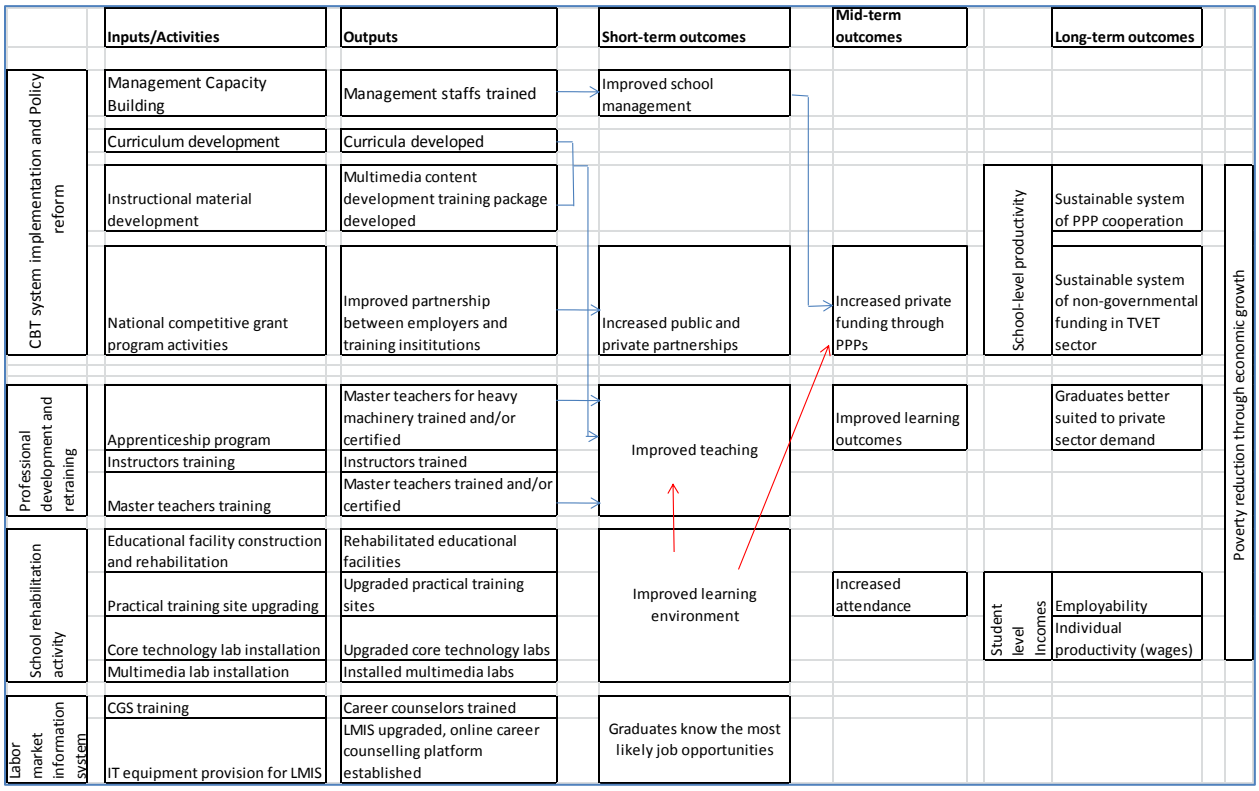
XIV. Appendices

A. TVET Program Logic



B. 72 TVET Schools' Total Number of Students, Teachers, and Trades (2011-2012)*

Category	School Name	# of Students	# of Teachers	# of Trades	MCA Intervention			
					Grant	Training	Equipment	Infrastructure
State-Owned VTPC	Arkhangai VTPC	764	46	24	√	√	√	√
	Bayan-Ulgii VTPC	1218	56	18		√	√	√
	Bayankhongor VTPC	1681	56	29		√		
	Bulgan VTPC	527	39	15	√			
	Gobi- Altai VTPC	893	54	23		√	√	√
	Dornogobi VTPC	743	40		√	√		
	Dornod VTPC	493	34	18				
	Dornod Phased VTPC	1046	45	27	√	√	√	√
	Dundgobi VTPC	862	41	30	√	√	√	√
	Zavkhan VTPC	914	47	25		√		
	Umnu Gobi VTPC	809	40	31	√	√	√	√
	Selenge VTPC	370	20	10			√	√
	Selenge Shaamar VTPC	326	22	16				
	Tuv VTPC	557	25	14		√	√	√
	Tuv Shaamar VTPC	405	18	12				
	Khuvsgul VTPC	929	38	27	√			
	Khentii VTPC	832	37	31	√			
	Orkhon VTPC	1027	44	32	√	√	√	√
	Darkhan VTPC	1229	59	19	√	√	√	√
	Darkhan Urguu VTPC	1380	51	32	√	√		
	Nalaikh VTPC	1066	49	19	√	√	√	√
	Gobisumber VTPC	697	32	15		√	√	√
	Selenge Zuunkharaa VTPC	557	27	9				
	Art and Production VTPC	1574	81	41				
	Tumur zam VTPC	607	16	10				
	Tuv Erdeme Soum VTPC	300	13	9				
	Selenge Sant VTPC	211	25	8				
	Bulgan Agricultural VTPC	100	12					
Private VTPC	Donbosco VTPC	315	24	10				
	Abuka VTPC	396	21	7				
	Arkhangai Bulgan VTPC	493	13	13				
	Bayankhongor Ulziit VTPC	437	9	5				
	Anima VTPC	39	4	3				
	Amidrakh Ukhaan VTPC	183	10	7	√			
	Khamag Mongol VTPC	740	17	11				
	USI VTPC	50	6	3	√			

Category	School Name	# of Students	# of Teachers	# of Trades	MCA Intervention			
					Grant	Training	Equipment	Infrastructure
	Baz School VTPC	739	21	9				
	INI VTPC	37	9	2				
	Dornogobi Tumurzam VTPC	155	10	4				
	Altangorkhi VTPC	60	4	2				
State-Owned College	**Music and Dance College**	197	84	7				
	Zavkhan Music and Dance College	76	27	6				
	Mongol Korean College	1968	77	27	√	√		
	Mongol Korean College in Bayanchandmani	448	36	11	√			
	Ulaangom College	1515	72	35	√	√	√	√
	Khovd Politechnical College	1499	68	35			√	√
Private College	**Mongol Farming College**	220	12	7	√			
	Khangai College	510	11	13				
	Construction Technological College	1088	31	12	√			
	Technical and Technological College	1864	54	31	√	√	√	√
State-Owned Institute	**Culture Institute**	33	4	1				
	Tumur zam Institute	654		7				
Private Institute	**New Civilization Institute**	328	17	5				
	Mongol Business Institute	160	10	3				
	Technology Institute	2534	90	20				
	Monos Institute	65	10	1				
	Enerel Institute	285	16					
State-Owned University	**MUST- Uvurkhangai Technology University**	1487	51	27	√			
	MUST- Sukhbaatar Technology University	593	19	27				
	MUST- Technology University	138	11	4				
	MUST- MIS University	621	17	9				
	MUST- UDTS University	105	2	1				
	MUST- Ulaanbaatar Politechnic College	1833	71	20			√	√
	MUST- Darkhan Politechnical University	632	22	20				
	MUST- Bor- Undur VTPC	333	12	7				
	Agirultural University- Darkhan	51	8	1				
	Agirultural University- Orkhon	440	23	8				
	NUM- Food University	240	10	7				

Category	School Name	# of Students	# of Teachers	# of Trades	MCA Intervention			
					Grant	Training	Equipment	Infrastructure
	Health- Gobi-Altai University	671		6				
	Health- Dornogobi University	299		5				
	Health- Darkhan University	1277		7				
Private University	**Ikh Zasag University**	209	13	2				

*Highlighted schools are participants in the impact evaluation study.

C. Timeline and Application Collection Approach, by School

	Approach A							Approach B		
Timeline of Activities	**Bayan-Ulgii VTPC**	**Construction College**	**Darkhan-Uul VTPC**	**Mongol Korean College**	**Orkhon VTPC**	**Ulaangom College**	**Umnugovi VTPC**	**Dornod Phased VTPC**	**Dornod VTPC**	**Govi-Altai VTPC**
ROUND 1										
Field Staff & Admissions Committee BEGIN collecting applications	n/a	4-Jun	7-Jun	10-Jun	2-Jun	n/a	4-Jun	18-May	18-May	18-May
Field Staff & Admissions Committee STOP collecting applications	n/a	1-Jul	15-Jun	27-Jun	7-Jun	n/a	25-Jun	4-Jun	4-Jun	4-Jun
Public Lottery Event held at the school	n/a	7-Jul*	23-Jun	2-Jul*	17-Jun	n/a	5-Jul*	15-Jun	15-Jun	15-Jun
MMCG Field Staff stay at school until this date to address complaints	n/a	10-Jul	25-Jun	8-Jul	19-Jun	n/a	26-Jun	20-Jun	20-Jun	20-Jun
ROUND 2										
Field Staff & Admissions Committee BEGIN collecting applications	11-Aug	2-Aug	16-Aug	20-Aug	16-Aug	9-Aug	15-Aug	20-Aug	20-Aug	16-Aug
Field Staff & Admissions Committee STOP collecting applications	31-Aug	13-Aug	2-Sep	27-Aug	18-Aug	2-Sep	31-Aug	2-Sep	30-Aug	29-Aug
Public Lottery Event held at the school	5-Sep	24-Aug*	5-Sep	30-Aug*	25-Aug	4-Sep	2-Sep	3-Sep	3-Sep	2-Sep
MMCG Field Staff stay at school until this date to address complaints	9-Sep	27-Aug	8-Sep	2-Sep	30-Aug	7-Sep	5-Sep	6-Sep	6-Sep	5-Sep

* Per the school's request, lottery was not open to the public, but held at the MCA-M office and open only to invited individuals including official witnesses.

D. Lottery Steps

After confirming all the details with the schools, IPA prepared a computer program to randomly assign applicants into trade slots. Lottery observers were able to watch each of the following steps of the lottery computer program via projection screen:

1. The computer program generates a list of all applications received and printed. The printout is stamped and signed by official witnesses designated by the school.
2. The computer program then identifies the unqualified applicants that do not meet the schools' minimum criteria for acceptance (such as having a GPA of 60 and a lower secondary school certificate). The list of unqualified applicants is printed, stamped, and signed by official witnesses.
3. The computer program then identifies all qualified applicants that meet the school's minimum criteria for acceptance. The list of all qualified applicants is printed, stamped, and signed by official witnesses. Only applicants on this list are eligible to be included in the lottery.
4. The lottery process then begins, with only qualified students eligible to be assigned an admissions slot.
    a. First the program identifies applicants with preferred status and assigns them into trade slots according to their preferences.
    b. Then, from the remaining applicants, the program randomly selects applicants one by one and assigns each applicant into his/her top trade preference. To be assigned to a trade, the student must meet the trade specific criteria.
    c. If all the slots in an applicant's top trade preferences are filled, the applicant is assigned their next highest trade preference with an open slot.
    d. This process continues until all trade slots are filled. A final list of accepted students for each trade is printed, stamped, and signed by official witnesses.
5. The remaining applicants that were not selected for admissions through the lottery are displayed. This list is printed, stamped, and signed by official witnesses.
6. Finally, the log of the entire computer program is printed and given to schools. This log is provided to schools so that in case of any disputes as to the lottery's transparency and fairness, interested parties can review the time stamped computer program code.

Schools were responsible for publicizing lottery results to the applicants.

E. Admissions Questionnaire Example

Orkhon TVET Application Form
Part I: MCA-MONGOLIA TVET Project Evaluation Consent Release Form

The school that you (or your legal ward) are applying is participating in a study to improve its effects on students. The study is being conducted by the school, the Millennium Challenge Account of Mongolia (MCA-Mongolia), the Millennium Challenge Corporation (MCC), Innovations for Poverty Action (IPA) and as well as a few other organizations.
We are kindly asking all students applying this year to participate in our study and this document will provide you with an explanation of how the study will affect you (or your legal ward). Please read carefully and decide whether you want to participate or not.
The school which you (or your legal ward) are applying has only limited space to accept students. Hence, only a few is able to get accepted out of many registered applicants. This year the admission spaces will be allocated using a lottery. The lottery will ensure all the qualified applicants with the opportunity to have an equal chance to attend the school and to study in one of their preferred trades. In order to do so, you are required to fulfill the following steps:

1. To complete the attached application form
2. To take a short knowledge test
3. To apply through the lottery regardless whether you or not you agree to participate in the study.

If you (or your legal ward) agree to participate in the study, you are helping us to understand how the design the best programs to support vocational education in Mongolia.
We will contact you in the future to ask questions about your life using the information that you have provided in the application form. Any information that can identify you (or your legal ward) individually will be kept strictly confidential. It will only be known to those conducting the study. Furthermore, the information that you have provided is strictly voluntary and you have the right to stop participating anytime without any punishment.

If you have any questions about the study, you can ask the school representatives, who are operating the school admission process. In addition, if you have any problems or concerns about the study, you should contact IPA's 9500-6365.

Agreement to Participate: I have read the above information; have had the opportunity to have any questions about this study answered.

☐ I agree to participate
☐ I decline to participate

_____ _____ _____

(Printed Name of Applicant) (Date) (Signature)

Consent of Legal Guardian (only for applicants under 16 years of age): I am the legal guardian of the Applicant whose name and signature are listed here. I have read the information above and have been provided with sufficient information about this study.

☐ I agree to allow my ward to participate
☐ I decline to allow my ward to participate

_____ _____ _____

(Printed Name of Legal Guardian) (Date) (Signature)

_____ _____

(Location where Application was Collected) (Name and ID of Coordinator)

_____

(Name of Facilitator that Facilitated the Completion of this Application)

Part II: Application Form

Picture				
	1.	Name		
	2.	Father\ Mother's name		
	3.	Surname		
	4.	ID number/ Birth certification number *(Please circle the type of document and write the number)*	1.ID №	
			2.Birth certification№	
			Please check if the following documentations are provided ☐ ID card ☐ Birth certification ☐ Don't have it now	

5.	Registration number	
6.	Birth date	*(year/month/day)*
7.	Age	
8.	Gender	1. Male 2. Female
9.	Civil status	
10.	Marital status *(choose one)*	1. Single 2. Married 3. Widowed\ Widower 4. Divorced 5. Have a partner
11.	Do you have a child? If yes, how many?	1. Have children → ☐ 2. Don't have a child
12.	Nationality *(choose one)*	1. Khalkh 2. Buriad 3. Kazak 4. Other(write:_____) 98. Don't want to answer 99. Don't know
13.	Primary Residence	1. Aimag/city_____ 2. Soum/district_____ 3. Bag/khoroo_____
14.	Please write down your education level?	1. Primary grade 1 2. Primary grade 2 3. Primary grade 3 4. Primary grade 4 5. Primary grade 5 6. Secondary grade 6 7. Secondary grade 7 8. Secondary grade 8 9. Secondary grade 9 10. Secondary grade 10 11. Secondary grade 11 12. Vocational 13. Bachelor 14. Masters 15. Non-official education Check if documentation is provided ☐ Transcript ☐ Certification ☐ Upper secondary school certification ☐ Don't have it now
15.	About the school that you have recently graduated	1. School name:_____ 2. Address: _____ 3. Year attended: _____ 4. Year graduated:_____ 5. GPA:_____%
16.	Have you ever worked and received salary before?	1. Yes → Please move on to II.17 and II.18. 2. No 98. Don't want to answer Please move on to II.19.

		99. Don't know
17.	If yes, please provide the following information.	1. Employer:_____ 2. Hours worked per month:_____ 3. Salary received per month:_____ 98. Don't want to answer 99. Don't know
18.	Is this part of your family business?	1. Yes 2. No 98. Don't want to answer 99. Don't know
19.	Where do you wish to work upon your graduation?	1. Governmental organization 2. Non-governmental organization 3. Private company 4. Self-employed 5. International organization 6. Not going to work 7. Other: (_____) 98. Don't want to answer 99. Don't know
20.	Has any organization guaranteed you a job?	1. Yes => Please move on to II.21, 22 2. No => please move on to II.23
21.	If yes, please write down its name.	
22.	Have you made any agreement, compact with this organization? (note after looking at the proper documentation)	1. Yes 2. No ☐ Check if documentation is provided.
23.	Do you have any disabilities? (Circle all the relevant information)	1. None 2. Mental 3. Physical 4. Speaking 5. Other: (list:_____) 98. Don't want to answer 99. Don't know ☐ Check if documentation is provided.

Part III: Household information

1.	How many people are currently living in your household?	

<table>
<tr><td>2.</td><td>Who else live in your household except you? Circle the number before the person's name and write how many.</td><td>
<table>
<tr><th></th><th>Related to</th><th>How many[26]</th></tr>
<tr><td>1</td><td>Mother</td><td></td></tr>
<tr><td>2</td><td>Father</td><td></td></tr>
<tr><td>3</td><td>Spouse</td><td></td></tr>
<tr><td>4</td><td>Legal ward (_____)</td><td></td></tr>
<tr><td>5</td><td>Partner</td><td></td></tr>
<tr><td>6</td><td>Your siblings under 18 years of age or younger</td><td></td></tr>
<tr><td>7</td><td>Your siblings 18 years of age or older</td><td></td></tr>
<tr><td>8</td><td>Grandparents</td><td></td></tr>
<tr><td>9</td><td>Your children</td><td></td></tr>
<tr><td>10</td><td>Other relatives</td><td></td></tr>
<tr><td>11</td><td>Others (non-relatives)</td><td></td></tr>
<tr><td>98</td><td>Don't want to answer</td><td></td></tr>
</table>
</td></tr>
<tr><td>3.</td><td>Who is the head of your household? (Please choose one answer)</td><td>1. Mother
2. Father
3. I myself
4. Siblings
5. Spouse
6. Grandfather
7. Grandmother
8. Legal ward (_____)
9. Other (_____)</td></tr>
<tr><td>4.</td><td>Please write down your head of household's full name.</td><td>1. Please write_____
98. Don't want to answer
99. Don't know</td></tr>
<tr><td>5.</td><td>What's the education level of your head of household?</td><td>1. Primary grade 1
2. Primary grade 2
3. Primary grade 3
4. Primary grade 4
5. Primary grade 5
6. Secondary grade 6
7. Secondary grade 7
8. Secondary grade 8
9. Secondary grade 9
10. Secondary grade 10
11. Secondary grade 11
12. Vocational
13. Bachelor
14. Masters
15. Doctor
16. Non-official education
17. None
98. Prefer not to answer
99. Don't know</td></tr>
<tr><td>6.</td><td>What's the trade of your head of household? (please write)</td><td>1. Write: _____
2. Doesn't have trade
98. Don't want to answer
99. Don't know</td></tr>
<tr><td>7.</td><td>Does your head of household work now?</td><td>1. Yes
2. No
98. Don't want to answer } Please move on to III.9
99. Don't know</td></tr>
<tr><td>8.</td><td>If yes, what does he/she do now? (write)</td><td>1. Please write:_____
98. Don't want to answer
99. Don't know</td></tr>
</table>

[26] Grey box indicates no information would be provided given questionnaire logic. The enumerators were not instructed to fill out the box.

9.	Does anyone in your family have one of the following trades? If so, please circle the trade's number and specify the number of household members	
10.	What's your household's average monthly income including all other income sources? (salary, wage, pension and etc)	1. Below 50,000 MNT 2. Between 50,001 MNT and 100,000 MNT 3. Between 100,001 MNT and 200,000 MNT 4. Between 200,001 MNT and 300,000 MNT 5. Between 300,001 MNT and 500,000 MNT 6. Greater than 500,001 MNT 98. Don't want to answer 99. Don't know
11.	Has any member of your household raised livestock, poultry or any other animal?	1. Yes 2. No 98. Don't want to answer 99. Don't know } Move on to III.14
12.	If yes, whose animal do you raise?	1. Your own 2. Other's 98. Don't want to answer 99. Don't know } Move on to III.14
13.	Please write the number of animals you own.	
14.	Do members of your household own any of the following? *(check all the apply*	1. Automobile 2. Motorcycle 3. Computer 4. Television 5. Refrigerator 6. Vacuum cleaner 7. Vending machine 8. Satellite dish 9. None 98. Don't want to answer 99. Don't know
15.	What's the type of your dwelling? (choose one please)	1. Ger 2. Separate apartment 3. Public Apartment 4. Student Dormitory 5. Public Dormitory 6. Non-living Quarters

	Trade	Number
1	Construction	
2	Weaving production	
3	Sewing	
4	Plumbing	
5	Construction woodwork carpentry	
6	Auto machine repair	
7	Carpet industry operator	
8	Carpet industry equipment repair	
9	Typesetting and designing	
10	Food production	
11	Hairdresser	
98	Don't want to answer	
99	Don't know	

	Type of animals	Number
1	Cow	
2	Horse	
3	Camel	
4	Sheep	
5	Goat	
98	Don't want to answer	
99	Don't know	

		7. Other (describe _____) 98. Don't want to answer 99. Don't know
16.	Who does own the dwelling?	1. owns 2. rents 98. Don't want to answer 99. Don't know

Part IV: Applicant's Contact information

We will be able to locate you during the study time within the contact information that you have provided us below. All of your information will be confidential.

1.	Do you own a landline?		Yes → number	
			No	
2.	Cell phone (Please include all your cell phones)	1	Cell phone number	
		2	Cell phone number	
		3	no cell phone	
2.1	Respondent's cell phone number works when miscalled	1	Yes	
		2	Not working at the moment → go to 2.2	
		3	Ringing but phone not present	
2.2	Do you have another phone number we can use to contact you?	1	New number	
		2	New number	
		3	Don't have	
2.3	Have you changed your phone numbers in last 12 months?	1	Yes	If yes, how many times have you changed your cell phone number? ☐☐
		2	No	
2.4	Are you anticipating to change your phone number in the next 12 months?	1	Yes	If yes, how many times have you changed your cell phone number? ☐☐
		2	No	
3.	E-mail address (s)	1	e-mail address	
		2	e-mail address	
		3	No e-mail	
4.	Primary Residence	1. Aimag\City _____ 2. Soum\District_____ 3. Bag\Khoroo_____ 4. Apartment\Street_____ 5. Door number_____ 6. Name of local area _____ 7. Landmarks near address (store, office, water station, etc.) or brief description _____ _____		
5.	Do you always stay at your primary residence?	1. Yes → Please move on to IV.7 2. No		

<table>
<tr><td>6.</td><td>If no, please write down the place you stay.</td><td>1. Aimag\City _____
2. Soum\District_____
3. Bag\Khoroo_____
4. Apartment\Street_____
5. Door number_____
6. Name of local area _____
7. Landmarks near address (store, office, water station, etc.) or brief description
_____
_____
_____
_____
_____</td><td>Seasons to reside at this place:<table><tr><td></td><td></td><td>1.Yes</td><td>2.No</td></tr><tr><td>1</td><td>Spring</td><td>1</td><td>2</td></tr><tr><td>2</td><td>Autumn</td><td>1</td><td>2</td></tr><tr><td>3</td><td>Summer</td><td>1</td><td>2</td></tr><tr><td>4</td><td>Winter</td><td>1</td><td>2</td></tr></table></td></tr>
<tr><td>7.</td><td>List the addresses of all additional places of residence</td><td>Residence 1:
1. Aimag\City _____
2. Soum\District_____
3. Bag\Khoroo_____
4. Apartment\Street_____
5. Door number_____
6. Name of local area _____
7. Landmarks near address (store, office, water station, etc.) or brief description
_____
_____
_____
_____</td><td>Seasons to reside at this place:<table><tr><td></td><td></td><td>1.Yes</td><td>2.No</td></tr><tr><td>1</td><td>Spring</td><td>1</td><td>2</td></tr><tr><td>2</td><td>Autumn</td><td>1</td><td>2</td></tr><tr><td>3</td><td>Summer</td><td>1</td><td>2</td></tr><tr><td>4</td><td>Winter</td><td>1</td><td>2</td></tr></table></td></tr>
<tr><td></td><td></td><td>Residence 2:
1. Aimag\City _____
2. Soum\District_____
3. Bag\Khoroo_____
4. Apartment\Street____
5. Door number_____
6. Name of local area: _____
7. Landmarks near address (store, office, water station, etc.) or brief description
_____
_____
_____
_____
_____</td><td>Seasons to reside at this place:<table><tr><td></td><td></td><td>1.Yes</td><td>2.No</td></tr><tr><td>1</td><td>Spring</td><td>1</td><td>2</td></tr><tr><td>2</td><td>Autumn</td><td>1</td><td>2</td></tr><tr><td>3</td><td>Summer</td><td>1</td><td>2</td></tr><tr><td>4</td><td>Winter</td><td>1</td><td>2</td></tr></table></td></tr>
<tr><td>8.</td><td>Do you live with your parents, guardians?</td><td>1. Yes-If yes then please skip question V.6 and V.12.
2. No</td><td></td></tr>
</table>

Part V: Tracking information

We would like to request the contact information of your parents as well as several individuals who are likely to know you well. This information will only be used for the purpose of locating you. It is important that we are able to locate you in order to inform you of school admissions decisions and to follow-up on the MCA-Mongolia TVET evaluation.

<table>
<tr><td>1.</td><td>Full name of Parent or Guardian 1</td><td colspan="3"></td></tr>
<tr><td>2.</td><td>Relationship to Applicant</td><td colspan="3"></td></tr>
<tr><td rowspan="2">3.</td><td rowspan="2">Does he\she own landline?</td><td>1</td><td>Yes => number</td><td>| | | | | - | - | | | |</td></tr>
<tr><td>2</td><td>No</td><td></td></tr>
</table>

<table>
<tr><td rowspan="3">4.</td><td rowspan="3">Cell phone (Please include all your cell phones)</td><td>1</td><td>Cell phone number</td><td></td></tr>
<tr><td>2</td><td>Cell phone number</td><td></td></tr>
<tr><td>3</td><td>no cell phone</td><td></td></tr>
<tr><td rowspan="3">5.</td><td rowspan="3">E-mail address (s)</td><td>1</td><td>e-mail address</td><td></td></tr>
<tr><td>2</td><td>e-mail address</td><td></td></tr>
<tr><td>3</td><td>No e-mail</td><td></td></tr>
<tr><td>6.</td><td>Primary residence</td><td colspan="2">Residence:
1. Aimag\City _____
2. Soum\District_____
3. Bag\Khoroo_____
4. Apartment\Street_____
5. Door number_____
6. Name of local area_____
7. Landmarks near address (store, office, water station, etc.) or brief description
_____
_____
_____
_____</td><td>Seasons to reside at this place:<table><tr><td></td><td></td><td>1.Yes</td><td>2.No</td></tr><tr><td>1</td><td>Spring</td><td>1</td><td>2</td></tr><tr><td>2</td><td>Autumn</td><td>1</td><td>2</td></tr><tr><td>3</td><td>Summer</td><td>1</td><td>2</td></tr><tr><td>4</td><td>Winter</td><td>1</td><td>2</td></tr></table></td></tr>
<tr><td>7.</td><td>Full name of Parent or Guardian 2</td><td colspan="3"></td></tr>
<tr><td>8.</td><td>Relationship to Applicant</td><td colspan="3"></td></tr>
<tr><td rowspan="2">9.</td><td rowspan="2">Does he\she own landline?</td><td>1</td><td>Yes => number</td><td></td></tr>
<tr><td>2</td><td>No</td><td></td></tr>
<tr><td rowspan="3">10.</td><td rowspan="3">Cell phone (Please include all your cell phones)</td><td>1</td><td>Cell phone number</td><td></td></tr>
<tr><td>2</td><td>Cell phone number</td><td></td></tr>
<tr><td>3</td><td>no cell phone</td><td></td></tr>
<tr><td rowspan="3">11.</td><td rowspan="3">E-mail address (s)</td><td>1</td><td>e-mail address</td><td></td></tr>
<tr><td>2</td><td>e-mail address</td><td></td></tr>
<tr><td>3</td><td>No e-mail</td><td></td></tr>
<tr><td>12.</td><td>Primary residence</td><td colspan="2">Residence:
1. Aimag\City _____
2. Soum\District_____
3. Bag\Khoroo_____
4. Apartment\Street_____
5. Door number_____
6. Name of local area_____
7. Landmarks near address (store, office, water station, etc.) or brief description
_____
_____
_____
_____</td><td>Seasons to reside at this place:<table><tr><td></td><td></td><td>1.Yes</td><td>2.No</td></tr><tr><td>1</td><td>Spring</td><td>1</td><td>2</td></tr><tr><td>2</td><td>Autumn</td><td>1</td><td>2</td></tr><tr><td>3</td><td>Summer</td><td>1</td><td>2</td></tr><tr><td>4</td><td>Winter</td><td>1</td><td>2</td></tr></table></td></tr>
<tr><td>13.</td><td>Full name of Closest Relative</td><td colspan="3"></td></tr>
</table>

14.	Relationship to Applicant			
15.	Does he\she own a landline?	1	Yes => number	
		2	No	
16.	Cell phone (Please include all your cell phones)	1	Cell phone number	
		2	Cell phone number	
		3	no cell phone	
17.	E-mail address (s)	1	e-mail address	
		2	e-mail address	
		3	No e-mail	
18.	Primary residence	Residence: 1. Aimag\City _____ 2. Soum\District_____ 3. Bag\Khoroo_____ 4. Apartment\Street_____ 5. Door number_____ 6. Name of local area_____ 7. Landmarks near address (store, office, water station, etc.) or brief description _____ _____ _____ _____	Seasons to reside at this place: 1 Spring 1.Yes 2.No 2 Autumn 1 2 3 Summer 1 2 4 Winter 1 2	
19.	Full name of Closest Friend 1			
20.	Relationship to Applicant			
21.	Does he\she own landline?	1	Yes → number	
		2	No	
22.	Cell phone (Please include all your cell phones)	1	Cell phone number	
		2	Cell phone number	
		3	no cell phone	
23.	E-mail address (s)	1	e-mail address	
		2	e-mail address	
		3	No e-mail	
24.	Primary residence	Residence: 1. Aimag\City _____ 2. Soum\District_____ 3. Bag\Khoroo_____ 4. Apartment\Street_____ 5. Door number_____ 6. Name of local area_____ 7. Landmarks near address (store, office, water station, etc.) or brief description _____ _____	Seasons to reside at this place: 1 Spring 1.Yes 2.No 2 Autumn 1 2 3 Summer 1 2 4 Winter 1 2	

			_____ _____	
25.	Full name of Closest Friend 2			
26.	Relationship to Applicant			
27.	Does he\she own a landline?	1	Yes → number	
		2	No	
28.	Cell phone (Please include all your cell phones)	1	Cell phone number	
		2	Cell phone number	
		3	no cell phone	
29.	E-mail address (s)	1	e-mail address	
		2	e-mail address	
		3	No e-mail	
30.	Primary residence	Residence: 1. Aimag\City _____ 2. Soum\District_____ 3. Bag\Khoroo_____ 4. Apartment\Street_____ 5. Door number_____ 6. Name of local area_____ 7. Landmarks near address (store, office, water station, etc.) or brief description _____ _____ _____ _____		Seasons to reside at this place: 1.Yes 2.No 1 Spring 1 2 2 Autumn 1 2 3 Summer 1 2 4 Winter 1 2
31.	Does a member of your household **other than your parents or guardians** have a cell phone?	1. Yes 2. No	If yes, please tell us name, cell phone number relationship of them to you? Name / Cell phone / 2. Relationship to respondent (enter code) 1 2 3 4 5	
32.	***Full name of class teacher of secondary school***			
33.	Address of the secondary school and position of class teacher of secondary school		1. Aimag\City _____ 2. Soum\District_____ 3. Name of organization/school_____ 4. Position _____	

34.	Does the class teacher have a cell phone?	1	Yes => Number									
		2	No									
		3	Don't know									
35.	***Full name of student, who participate any activities of your class other than the friends you already mentioned***											
36.	Does he/she have cell phone?	1	Yes => Number									
		2	No									
		3	Don't know									

Part VI: Trade

A. Which program are you applying to?

1	1 year program
2	2.5 year program

B. Will you earn any money, from work, stipends, or other sources, if you are admitted to the program?
   1. Yes
   2. No => Please move on to VI.4

C. If yes, how much money will you earn while you are attending the school?

D. We have listed all the possible trades below. Please write down the relevant information to your preferred trades.

   1. **4.2.2 Preference Number**- Indicate your trade preference in order of 1-9, with 1 being your most preferred trade and 9 being your least preferred trade.
   1. **4.2.3 Monthly salary**- Next, please write your best guess of the monthly salary you could earn if you completed the program to in that trade. Provide your best guess given what you know about each trade.
   2. **4.2.4 Job search time**- Finally, please indicate how many months do you think it would take you to find a job? Again, you can provide your best guess.

	1Year Program			
	TRADE	**Preference Number**	**Estimated Monthly Salary**	**Estimated Job Search Time**
1	Construction			
2	Weaving production			
3	Sewing			
4	Plumbing			

	2.5 Year Program			
	TRADE	**Preference Number**	**Estimated Monthly Salary**	**Estimated Job Search Time**
1	Construction			
2	Construction woodwork carpentry			
3	Auto machine repair			
4	Carpet industry operator			
5	Carpet industry equipment repair			

6	Typesetting and designing			
7	Food production			
8	Hairdresser			

Part VII: Alternatives

Since the available positions in the school are being allocated by lottery, there is a chance that you will not be admitted to the program to which you are applying. Please write your future plans if you are not accepted to this program. We understand that you may not know exactly what you are going to do, but we would like to know which of the following you are most likely to do if you are not admitted:

1.	What are you most likely to do if you are not admitted to the TVET School?	1. Attend a program at another school Move on to VII.2 2. Look for a job and start working Move on to VII.9 3. Other. Please move on to the next section. Please describe what you would do:_____
If you are planning to attend another school, please answer the following questions. (Must have answered 1 for the question VII.1)		
2.	What type of school are you most likely to attend?	1. Another Vocational training program 2. High school 3. University 4. Other. _____
3.	How many years will it take to complete your education? (Please write in years)	1. Please write:_____ 98. Don't want to answer 99. Don't know
4.	Will you be working while studying?	1. Yes → Please move on to VII.5 2. No 98. Don't want to answer } Move on to VII.6 99. Don't know
5.	If yes, on average how much money will you earn per month? (please write)	1. Please write:_____ 98. Don't want to answer 99. Don't know
6.	What will you do once you graduate from your school?	1. Look for a job and work → Move on to VII.7 and VII.8 2. Continue studying → Move on to the next section 3. Other (_____)

7.	Upon graduating from your school, how many months do you think it would take you to find a job?	1. Please write: _____ 98. Don't want to answer 99. Don't know
8.	Upon finding a job, how much money do you think you will earn?	1. Please write: _____ 98. Don't want to answer 99. Don't know
If you are planning to work please answer the following questions. (Must have chosen 2 for the question VII.1)		
9.	How long do you think you will take to find a job, in months?	1. Please write:_____ 98. Don't want to answer 99. Don't know
10.	How much do you think you will earn per month once you find a job	1. Please write:_____ 98. Don't want to answer 99. Don't know

Part VIII: School Criteria

Finally, we would like to know some additional information.

1.	Do you have any police documentation proving that you don't have any criminal record?	1. Yes 2. No	☐ Check if the documentation is provided.
2.	Have you provided your homeroom teacher's recommendation proving your ability to study?	1. Yes 2. No	☐ Check if the documentation is provided.
3.	Any health documentation indicating your health records?	1. Yes 2. No	☐ Check if the documentation is provided.
4.	Do you have a health insurance book?	1. Yes 2. No	
5	Do you have any documentation proving that you were awarded from state technique and technological olimpiads or sport, talent competition?	1. Yes 2. No	☐ Check if the documentation is provided. The staff should see the original documentation.
6	Have you provided your picture?	1. Yes → 2. No	☐

F. List of Special Criteria by School

1. Bayan-Ulgii VTPC

1.	Do you have any documentation proving your reason or need to enter this program provided by aimag, soum's labor welfare department?	3. Yes 4. No ☐ Check if the documentation is provided. (The proper documentation must be sent to TVET)
2.	Do you have any documentation proving that you were awarded 1-3 place from state or aimag's olimpiads?	3. Yes 4. No ☐ Check if the documentation is provided.
3.	Do you have your health book or health documentation indicating your health records?	3. Yes 4. No ☐ Check if the documentation is provided.
4.	Have you passed school doctor's health examination?	1. Passed 2. Failed
5	If you are applying to 2.5 year program, are you under 20 this year?	1. Yes 2. No

2. Construction College

1.	Do you have any documentation proving your needs and reasons to enter the school made by district's labor welfare?	1. Yes 2. No ☐ Check if the documentation is provided.

3. Darkhan-Uul VTPC

1.	Do you have any documentation proving your needs and reasons to enter the school made by aimag soum's labor welfare?	5. Yes 6. No ☐ Check if the documentation is provided.
2.	Do you have any documentation proving that you were awarded 1-3 place from state or aimag's technique and technological olimpiads?	5. Yes 6. No ☐ Check if the documentation is provided.
3.	Have you provided your picture?	3. Yes → ☐ 4. No

4.	If you are applying to 2.5 year program, have you graduated your 9th grade in 2010?	5. Yes 6. No
5.	Are you under 23 years old?	1. Yes 2. No

4. Dornod Phased VTPC

1.	Do you have any documentation proving your needs and reasons to enter the school made by aimag's labor welfare?	7. Yes 8. No ☐ Check if the documentation is provided.
2.	Do you have any documentation proving that you were awarded from state, aimag Olympiads? (bring the original documentation)	1. Yes 2. No ☐ Check if the documentation is provided.
3.	According to the registration regulation, do you have the proper health documentation?	1. Yes 2. No
4.	Do you think you have a good health condition?	1. Yes 2. No 98. Don't want to answer 99. Don't know
5.	Circle if you have any of the following health issues.	1. Epilepsy 2. Brain damage 3. Tuberculosis and other infectious diseases 4. Allergy 5. Glaucoma 98. Don't want to answer 99. Don't know
6.	Do you have any obvious scars on your face?	1. Yes 2. No 98. Don't want to answer 99. Don't know
7.	Are you interested in the following trades? - Farming business, driver (2 year) - Farming business, driver (2.5 year) - Tractor driving, usage (2.5 year)	1. Yes → Please move on to VIII.9 2. No → finish the interview *Please ask 2 and 2.5 year program difference from the admission staff.
9.	If you are applying to 2 year program from the above two trades, will you be 18 by 2010 June?	1. Yes 2. No
10.	If you are applying to a 2.5 year program from the above two trades, will you be 18 by 2013 January?	1. Yes 2. No

5. Dornod VTPC

1.	Do you have any documentation proving your needs and reasons to enter the school made by aimag's labor welfare?	9. Yes 10. No ☐ Check if the documentation is provided.
2.	According to the registration regulation, do you have the proper health documentation?	3. Yes 4. No
3.	Do you think you have a good health condition?	3. Yes 4. No 98. Don't want to answer 99. Don't know
4.	Circle if you have any of the following health issues.	6. Epilepsy 7. Brain damage 8. Tuberculosis and other infectious diseases 9. Allergy 10. Glaucoma 98. Don't want to answer 99. Don't know
5	Have you ever participated in any kinds of Olympiads?	1. Yes 2. No 98. Don't want to answer 99. Don't know ☐ Check if the documentation is provided.
6.	Do you wish to enter the household woodwork carpenter trade?	3. Yes 4. No → to finish the interview
7.	If yes, then please provide your graphics drawing class grade.	☐ Check if the documentation is provided.

6. Gobi-Altai VTPC

1.	Do you have any documentation proving your needs and reasons to enter the school made by aimag's labor welfare?	1. Yes 2. No ☐ Check if the documentation is provided.

7. Mongolian-Korean Technological College

1.	What are you most likely to do if you are not admitted to the TVET School?	4. Attend a program at another school → Move on to VII.2 5. Look for a job and start working → Move on to VII.9 6. Other. → Please move on to the next section. Please describe what you would do:_____
If you are planning to attend another school, please answer the following questions. (Must have answered 1 for the question VII.1)		

2.	What type of school are you most likely to attend?	5. Another Vocational training program 6. High school 7. University 8. Other. _____
3.	How many years will it take to complete your education? (Please write in years)	1. Please write:_____ 98. Don't want to answer 99. Don't know
4.	Will you be working while studying?	3. Yes → Please move on to VII.5 4. No 98. Don't want to answer Move on to VII.6 99. Don't know
5.	If yes, on average how much money will you earn per month? (please write)	1. Please write:_____ 98. Don't want to answer 99. Don't know
6.	What will you do once you graduate from your school?	4. Look for a job and work → Move on to VII.7 and VII.8 5. Continue studying → Move on to the next section. 6. Other (_____)
7.	Upon graduating from your school, how many months do you think it would take you to find a job?	1. Please write: _____ 98. Don't want to answer 99. Don't know
8.	Upon finding a job, how much money do you think you will earn?	1. Please write: _____ 98. Don't want to answer 99. Don't know
If you are planning to work please answer the following questions. (Must have chosen 2 for the question VII.1)		
9.	How long do you think you will take to find a job, in months?	1. Please write:_____ 98. Don't want to answer 99. Don't know

10.	How much do you think you will earn per month once you find a job?	1. Please write:_____ 98. Don't want to answer 99. Don't know

9. Orkhon VTPC

1.	Do you have any police documentation proving that you don't have any criminal record?	11. Yes 12. No ☐ Check if the documentation is provided.
2.	Do you have any school documentation proving that you don't have any criminal record?	7. Yes 8. No ☐ Check if the documentation is provided.
3.	Have you provided your homeroom teacher's recommendation proving your ability to study?	5. Yes 6. No ☐ Check if the documentation is provided.
4.	Any health documentation indicating your health records?	7. Yes 8. No ☐ Check if the documentation is provided.
5.	Do you have the following problems? (Please circle all related information)	11. Epilepsy 12. Brain damage 13. Tuberculosis and other infectious diseases 14. Allergy 15. Glaucoma 98. Don't want to answer 99. Don't know
6	Do you have any documentation proving that you were awarded from state technique and technological olimpiads or sport, talent competition?	9. Yes 10. No ☐ Check if the documentation is provided. The staff should see the original documentation.
7.	Please provide the following subjects' grades from the applicant's certification.	1 Mathematics % 2 Physics % 3 Cartography % 4 Geometry % 5 Mongolian language % 6 Chemistry % 7 Aesthetics %
8	Have you provided your picture?	3. Yes → ☐ 4. No
9	Have you paid your admission fee?	1. Yes 2. No

10. Umnu-Gobi VTPC

1.	Do you have any documentation proving your reason or need to enter this program provided by aimag, soum's labor welfare department?	13. Yes 14. No ☐ Check if the documentation is provided. (The proper documentation must be sent to TVET)
2.	Do you have any documentation proving that you were awarded 1-3 place from state or aimag's Olympiads?	11. Yes 12. No ☐ Check if the documentation is provided.
3.	Any health documentation indicating your health records?	9. Yes 10. No ☐ Check if the documentation is provided.
4.	Do you have the following problems? (Please circle all related information)	16. Epilepsy 17. Brain damage 18. Tuberculosis and other infectious diseases 19. Allergy 20. Glaucoma 21. None 98. Don't want to answer 99. Don't know
5	Is your 9th grade's GPA higher than 85%?	3. Yes 4. No

11. Ulaangom College

1.	Do you have any documentation proving your reason or need to enter this program provided by aimag, soum's labor welfare department?	15. Yes 16. No ☐ Check if the documentation is provided.
8	Have you provided your picture?	5. Yes → ☐ 6. No

G. Complete List of Trades Accepted by Applicants by Program Length

2/2.5-Year Trades—Accepted

Trade	Number Accepted
Construction	664
Construction Plumbing	601
Automobile repairs, usage	592
Welding	546
Construction Decoration	527
Wood and Household Carpenter	521
Cook, Food Production	490
Sewing, sewing production	474
Construction montage	395
Computer Operator (Secretary)	360
Concrete Reinforcement	236
Lathing	185
Hairdresser, Beautician	178
Light Industry Equipment Repairs, Welding	160
Agricultural farmer, driver	140
Weaving machine operator	122
Construction Machine, Machinery Repairs	101
Construction scheme technician	101
Afforestation, vegetable farming	92
Animal husbandry farmer	89
Environment protection	87
Trade worker	87
Shoe making	85
Wool and cashmere processing	77
Heavy machine equipment technician	75
Carpet production	75
Tractor driver, repairs and usage	72
Printing designer	70
Leather, suedette material tailor, sewer	66
Clothing repair, design	64
Animal husbandry farmer- agriculture	61
Weave production	59
Agro farmer	59
Road, construction machinist	53
Knitting machine operator	50
Soft material tailor, sewer	50
Yarn machine operator	44
Bulldozer driver, repairs and usage	44
Air conditioner, freezer equipment repair	44
Mine enriching	32

Trade	Number Accepted
Tour Guide	29
Technology line installer	28
Meat processing factory worker	28
Vegetable grower	26
Greenhouse farming	26
Mountain work machine, equipment repair	23
Heavy machine equipment technician, operator	23
Mining rehabilitation	20
Mining technique and usage	20
Hairdresser (only)	20
Agriculture machine, equipment repair	19
Excavator machinist	18
Engine repair	17
Heavy machine equipment technician, repair	16
Fine arts	0

1-Year Trades—Accepted

Trade	Number Accepted
Construction	139
Cook, Food Production	138
Automobile repairs, usage	83
Hairdresser, Beautician	75
Construction Decoration	59
Construction montage	59
Computer Operator (Secretary)	40
Environment protection	40
Heavy machine equipment technician	40
Hairdresser (only)	40
Welding	39
Leather art (hand-made art)	32
Circuit repair	32
Orchardist	28
Ceramics	21
Accountant- financial assistant	20
Construction Plumbing	18
Electrical machine installer	15
Mining rehabilitation	14
Heavy machine equipment technician, operator	13
Weave production	10
Lathing	10
Vegetable grower	6
Air conditioner equipment repair	5
Concrete Reinforcement	4
Heavy machine equipment technician, repair	3
Carpet production equipment repair	3
Animal care	3
Bread bakery worker	1
Vegetable storing, processing	1
Bulldozer driver, repairs and usage	0
Mine enriching	0
Petroleum- equipment repair	0
Secretary	0
Breaking machine operator	0
Traditional Animal husbandry farming	0
Beautician (only)	0

H. Complete List of Trades Ranked as Top Choice by Applicants by Program Length

2/2.5-Year Trades that Were Ranked as Applicants' First Choice	
Trade Name	**Number of Applicants Who Ranked Trade as #1 Choice**
Automobile repairs, usage	1327
Construction	1105
Computer Operator (Secretary)	938
Construction Decoration	930
Cook, Food Production	898
Welding	848
Construction Plumbing	820
Construction montage	657
Sewing, sewing production	579
Wood and Household Carpenter	396
Hairdresser, Beautician	355
Printing designer	196
Environment protection	186
Construction scheme technician	176
Light Industry Equipment Repairs, Welding	164
Agricultural farmer, driver	144
Soft material tailor, sewer	131
Concrete Reinforcement	124
Leather, suedette material tailor, sewer	124
Heavy machine equipment technician	103
Clothing repair, design	102
Weaving machine operator	102
Lathing	87
Mine enriching	79
Bulldozer driver, repairs and usage	71
Construction Machine, Machinery Repairs	68
Weave production	68
Heavy machine equipment technician	67
Carpet production	62
Excavator machinist	55
Trade worker	53
Afforestation, vegetable farming	52
Electrical machine installer	51
Tractor driver, repairs and usage	47

Trade Name	Number of Applicants Who Ranked Trade as #1 Choice
Tour Guide	44
Shoe making	40
Mining rehabilitation	36
Beautician (only)	32
Aircon, freezer equipment repair	31
Animal husbandry farmer	26
Road, construction machinist	22
Agro farmer	21
Wool and cashmere processing	19
Heavy machine equipment technician	18
Mountain work machine, equipment repair	18
Carpet production equipment repair	13
Mining technique and usage	12
Agriculture machine, equipment repair	11
Meat processing factory worker	11
Animal husbandry farmer- agriculture	10
Yarn machine operator	10
Knitting machine operator	9
Technology line installer	9
Greenhouse farming	7
Engine repair	5
Hairdresser, Beautician	5
Fine arts	4
Vegetable grocer	3
Hairdresser (only)	0

1-Year Trades that Were Ranked as Applicants' First Choice	
Trade Name	**Number of Applicants Who Ranked Trade as #1 Choice**
Cook, Food Production	188
Hairdresser, Beautician	106
Construction	99
Automobile repairs, usage	90
Accountant- financial assistant	76
Construction montage	65
Circuit repair	54
Construction Decoration	51
Heavy machine equipment technician	48
Hairdresser (only)	41
Welding	38
Sewing, sewing production	37
Computer Operator (Secretary)	33
Leather art (hand-made art)	31
Secretary	31
Environment protection	30
Trade worker	25
Orchardist	22
Soft material tailor, sewer	20
Cafeteria service	19
Construction Plumbing	18
Electrical machine installer	16
Heavy machine equipment technician, operator	13
Mining rehabilitation	12
Weave production	11
Lathing	10
Ceramics	9
Concrete Reinforcement	6
Aircon equipment repair	5
Animal husbandry farmer- agriculture	5
Wood and Household Carpenter	5
Computer Operator (Secretary)	5
Vegetable grocer	5
Knitting machine operator	4
Mine enriching	4
Carpet production equipment repair	3
Heavy machine equipment technician, repair	3

Trade Name	Number of Applicants Who Ranked Trade as #1 Choice
Waitress, bartender	2
Yarn machine operator	2
Animal care	1
Beautician (only)	1
Bread and bakery worker	1
Bulldozer driver, repairs and usage	1
Petroleum- equipment repair	1
Vegetable storing, processing	1
Animal husbandry farmer	0
Breaking machine operator	0
Afforestation, vegetable farming	0
Road, construction machinist	0
Traditional Animal husbandry farming	0