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Factors That Influence Students' Decisions to Enroll in Initial Vocational Education and Training (IVET) Lyceums in Tajikistan

Farid Safarmamad
Old Dominion University, farid.safarmamad@gmail.com

FACTORS THAT INFLUENCE STUDENTS' DECISIONS TO ENROLL IN INITIAL VOCATIONAL EDUCATION AND TRAINING (IVET) LYCEUMS IN TAJIKISTAN

by

Farid Safarmamad
Diploma of Specialist, June 2005, Tajik State Pedagogical University
M.S. May 2010, Old Dominion University

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Approved by:

Michael F. Kosloski (Director)

Christopher R. Glass (Member)

Petros J. Katsioloudis (Member)

ABSTRACT

FACTORS THAT INFLUENCE STUDENTS' DECISIONS TO ENROLL IN INITIAL VOCATIONAL EDUCATION AND TRAINING (IVET) LYCEUMS IN TAJIKISTAN

Farid Safarmamad
Old Dominion University, 2019
Director: Dr. Michael F. Kosloski

The purpose of this descriptive study was to examine the factors influencing students' decisions to enroll in IVET lyceums in Tajikistan. The researcher administered a paper-based survey to collect data from a stratified random sample of *n* = 541 students in IVET lyceums. Data were analyzed by performing descriptive statistics, paired *t*-tests, chi-squares tests, Mann-Whitney *U* tests, and principal axis factoring (PAF). The findings showed that IVET students are mainly male (70%), from rural areas (60%), economically disadvantaged (60%), and enrolled after 9th grade (68%). There was a strong relationship between gender and program enrollment, meaning female and male students made traditional program choices.

With regard to influencing students' decisions in choosing IVET lyceums, parents (53%) were the most influential factors followed by other factors, including hands-on experience, siblings, finding a job, and friends. School staff and marketing efforts were among the least influential factors. The result of PAF loaded twenty factors to five latent constructs labeled lyceum suits my needs, lyceum marketing, people with close relationships, school staff, and economic situation. As for choosing IVET programs, parents were at the top with fathers being more (55%) influential than mothers (50%), followed by interest in the occupation, job opportunities, siblings, friends, and prior experience. School staff and marketing were the least influential factors. The result of

PAF loaded sixteen factors to four latent constructs labeled program interest, school staff, people with close relationships, and program marketing.

Finally, the findings showed that in choosing IVET lyceums, out of 20 factors, only school teacher, school director, IVET is easier, and hands-on experience were statistically significantly different, while the remaining 16 showed no difference in influencing 9th and 11th grade students' decisions. Regarding choosing programs of study, school teacher, class supervisor, and opportunity for small business were statistically significantly different, while the remaining 13 showed no difference in influencing 9th and 11th grade students' decisions.

DEDICATION

This dissertation is dedicated to my wife, Amina, and my sons, Humoyun and Irfon, for their support, love, patience, and understanding throughout the dissertation process.

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CHAPTER I

INTRODUCTION

The process of making a decision about a future career is a pivotal and challenging point in one's life, especially for adolescents. A common decision adolescents need to make at the end of their compulsory education, or often ninth grade in many countries, is deciding between an academic and vocational education track (Koivisto, Vinokur, & Vuori, 2011; Paik & Shim, 2013).

The career decision-making process is becoming more perplexing for both adolescents and career guidance/development professionals due to the changing nature of jobs and workplace (Savickas et al., 2009) and the knowledge economy that demands greater intellectual and less physical capacity to stay competitive in the 21st century (Carnevale, Smith, & Strohl, 2013; Powel & Snellman, 2004). Therefore, making a career decision that is thoughtful and based on one's interests and abilities is important because it will impact career success, family income, and job satisfaction in the future. The importance of informed career choice was well described by the founder of the vocational guidance movement in the United States. Frank Parsons (1909) said:

> An occupation out of harmony with the worker's aptitudes and capacities means inefficiency, unenthusiastic and perhaps distasteful labor, and low pay; while an occupation in harmony with the nature of the man means enthusiasm, love of work, and high economic values – superior product, efficient service, and good pay. (p. 3)

Career decision making and choice is related to career development (Super, 1980). Through career development, adolescents find information about "available

options” and it “becom[es] a time of trial and error as [they] develop awareness of the realities of adult life” (Hogg, 1999, p. 109). Therefore, during the trial and error period adolescents need guidance from adults such as teachers, career counselors, parents, and experienced friends who went through the same decision-making process.

To make an informed career decision is especially challenging for youths in countries where a career guidance system does not exist or functions poorly. The lack of career guidance makes career decision making even more difficult for those who live in the rural areas given that they do not have the opportunity to see different industrial companies and technologies that could somehow benefit their career awareness. Consequently, studies show rural students possess a limited availability of career information (Crockett, Shanahan, & Jackson-Newsom, 2000) and the types of knowledge, qualification, and skills that are needed by various employers. This isolation does not allow students to fully develop interests and aptitudes for the careers and jobs available in the fast-changing economy.

Secondary school graduates encounter a dilemma about the type of postsecondary institutions (vocational schools, community colleges, or four-year institutions) they want to enroll in to pursue their education and career. Studies show that both in developed and developing countries, a majority of secondary school graduates choose to enroll in four-year colleges or universities. For example, in the United States in 2014, 68.4% of high school graduates went to college right after graduation (National Center for Education Statistics [NCES], 2016). The same trend was observed in Russia where 71% of survey respondents intended to apply to universities (Fond Obshestvennoe Mnenie [FOM], 2008). In Tajikistan, 94% male and

51% female graduates in the capital city enroll in universities (Quddusov, 2013). Also, the National High School Center at the American Institute for Research (2012) reported that the number of U.S. middle and high school students who wanted to enroll in college increased from 67% in 1997 to 75% in 2010.

However, reports indicate that today in both Tajikistan and the United States, high school graduates are not well prepared for university-level education (ACT, 2013; Okhunzoda, n.d.; Shams, 2017). For example, a recent study that focused on rural girls' education in two districts of Tajikistan revealed that 65% of adolescent girls do not have an interest to pursue science, technology, engineering, and math (STEM) because they find these subjects difficult to learn (Karim, 2017). According to ACT (2013), in the United States, almost one in three high school graduates is not ready to enter college. The failure is related to lack of students' knowledge and skills in English and science, technology, engineering, and math (STEM) courses. Studies also show that 22% of freshmen in post-secondary institutions register for remedial courses to improve their mathematics skills (National Research Center for Career and Technical Education [NRCCTE], 2006). The high aspiration for university-level education stems from the lack of information and guidance about different non-tertiary postsecondary career options and numerous high-paid jobs that do not need a four-year college degree (Wyman, 2015). Nevertheless, there are still many students in both developed and developing countries that choose to enroll in non-tertiary vocational education and training (VET) programs that provide students with the qualifications for entry-level jobs.

Vocational education and training, despite its sometimes negative image, is gaining attention of both politicians and educators around the world (United Nations

Educational, Scientific and Cultural Organization [UNESCO], 2015). In the face of technological advancement, globalization, shortage of skilled workforce, global financial and economic instabilities, and unemployment, both advanced and developing countries have realized that developing their human capital through education and training is one of the key remedies to boost their economies. In the United Nations' (UN) Sustainable Development Goals (SDGs; UN General Assembly, 2015), which was built on the success of the Millennium Development Goals (UN, 2000), vocational and technical education, lifelong learning, and skills development have been emphasized. Quality education is the goal number four among the 17 SDGs that were accepted by all countries to eradicate poverty, protect the planet, and ensure prosperity for all through the 169 targets by 2030. Goal 4 – "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (UN General Assembly, 2015, p. 17) – specifically states that by 2030 countries should "…ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university" (p. 17) and "…substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship" (p. 17).

With the advancement of technology, the global economy demands the workforce to have higher level of knowledge and skills. In the past it was possible for a high school graduate in the U.S. to compete in the manufacturing-based labor market and their employment rate was higher accordingly; however, these opportunities now present themselves far less frequently (Bureau of Labor Statistics, 2018; Carnevale, Cheah, & Hanson, 2015). For example, during the period of 1973-2008, the number of

U.S. jobs that required postsecondary education increased from 28% to 59% (Carnevale, Smith, & Strohl, 2010). A recent study shows that 65% of the 55 million jobs to be created by 2020 will require a bachelor's degree, some college, or an associate's degree (Carnevale et al., 2013). Therefore, high school graduates are struggling to compete for the available jobs (Symonds, Schwartz, & Ferguson, 2011). The demands of the 21st century economy towards worker quality has changed, and employers, including major companies such as Microsoft, Apple, Cisco, and Pearson, look beyond certificates and occupational qualifications and seek soft skills, such as interpersonal relationships, high motivation, teamwork, communications, and problem-solving (Levin, 2012; Symonds, Schwartz, & Ferguson, 2011).

In the case of the Republic of Tajikistan, which is the focus of this study, the challenges in the field of education in general, and particularly in VET and career guidance, are quite complex. Tajikistan was part of the Union of Soviet Socialist Republics (USSR) since its formation in 1929, as Tajik Soviet Socialist Republic, until gaining independence in 1991, upon the collapse of the USSR (Nourzhanov & Bleuer, 2013). The transition to independence was not smooth for Tajikistan because it encountered political instability and civil war that devastated the already weak economy. In short, the period of the late 1990s and early 2000s was a stage of healing from the wounds of the civil war and establishing peace in the country (Peace Agreement was signed in June, 1997 between the Government and the Opposition Party). The major reform process in different sectors of the economy started in early 2000s.

Being under Soviet rule for nearly 70 years, it was difficult to make a change from a centrally-planned economy to one that is market driven. The education system in the

early 2000s “was in a state of misery” not only because of the civil war but also due to the Soviet-style “dogmatic approach” to centralized curriculum and education policy (Niyozov, 2004, p. 3). Although several reform programs and initiatives have been implemented during the last decade, the quality of education has not been improved. Some features of the Soviet approach to educational management and policy still exist (Whitsel, 2011).

Initial vocational education and training (IVET) is the first level of professional/vocational education that prepares entry-level workers for the labor market. In Tajikistan, as in other former Soviet countries, IVET system is the one that was established during the Soviet time “within the tradition of the central economic planning and centralized job placement” (Heyneman, 1997, p. 22). Despite the government’s agenda to reform the IVET system, it still lacks the capacity to prepare a skilled workforce that is competitive in the new economy. Currently, there are 61 IVET lyceums/schools with more than 20,000 students enrolled in various vocational programs. Students can enroll in IVET lyceums after completing 9th or 11th grade in the general secondary schools. The majority of the enrollees are 9th grade completers because in the IVET lyceums they will have a chance to obtain their high school diploma along with a trade or occupational certificate.

In other countries Dalley-Trim, Alloway, & Walker (2008), Gaunt & Palmer, (2005), FOM, (2007), and UNESCO (2015) have found image issue. Similarly, IVET in Tajikistan is having an image issue and most often is accepted as a last resort for many young people as an advanced education option. Irrespective of its failure to equip graduates with sufficient knowledge and skills, still about 14,000 students enroll in 61

public IVET lyceums annually (Government of the Republic of Tajikistan, 2012b). Therefore, having a better understanding of the factors that influence students' decisions to enroll in IVET lyceums and programs will help administrators design relevant recruiting strategies and make informed improvements in IVET and career guidance systems that, in turn, can lead to enhanced learning outcomes and employment opportunities for students.

Statement of the Problem

The problem of this study was to determine factors that influence students' decisions to enroll in initial vocational education and training (IVET) lyceums in Tajikistan.

Research Questions

The following research questions were used to guide this study:

RQ_1: What is the demographic profile of students in IVET lyceums in Tajikistan?

RQ_2: What factors influence students' decisions to choose IVET lyceums?

RQ_3: What factors influence students' decisions to enroll in IVET programs?

RQ_4: Do students enrolled in IVET lyceums after 9^{th} grade differ from those enrolled after 11^{th} grade in terms of factors that influence their decision?

Background and Significance

Due to the poor public image of IVET, enrollment has been one of the main concerns in this field of education, not only in Tajikistan, but worldwide, (FOM, 2007; Gaunt & Palmer, 2005; Government of Tajikistan, 2012; Oviawe, 2015; UNESCO, 2009). In Tajikistan, during the period of 2002-2016 enrollment in IVET has decreased by 10%, while higher education enrollment increased by 93% (Statistical Agency of

Tajikistan, 2017a). Educational statistics indicate that in 2012, 81.6% of those (48,134) who did not continue to high school did not enroll in any type of education or training programs (Ministry of Education of the Republic of Tajikistan, 2013). As a result, about 90,000 young adults annually enter the labor market without any vocational skills and qualifications (Ashurov, 2012). The decline of interest in pursuing vocational education, in part, may be attributed to youth being hopeless and discouraged to find employment (Ajwad et al., 2014), even after attaining a formal vocational certificate; however, it may also be related to young people not having sufficient information and awareness about the role and value of training, skills, and qualifications in the new economy.

Today, young people prefer a shortcut to employment (Polat, 2014), even if it is unskilled labor, without understanding the socio-economic consequences of unskilled employment impacting their future life. In recent years in Tajikistan, it has become fashionable for many young people migrate to Russia for seasonal employment without any technical skills. This trend increased the share of Tajikistani young migrants from 30.37% in 2008 to 56.80% in 2012 (Statistical Agency of Tajikistan, 2013). The increasing number of young people growing up without sufficient education and training is alarming given that youth (15-30 age group) make 30% of the total population and is growing (United Nations Children's Fund [UNICEF], 2013). In general, Tajikistan has a significantly young population – 55% is under 25 (Statistical Agency of Tajikistan, 2016). Thus, lack of education, skills, and employment can make youth susceptible to problems such as radicalization and extremism (Bhatia & Ghanem, 2017; Radio Free/Radio Liberty, 2015).

Initial vocational education and training (IVET) was recognized as one of the priorities of educational reform in the government's agenda and as a tool to tackle the issues of skill shortages and unemployment (Government of the Republic of Tajikistan, 2007; 2012b). Indeed, studies from advanced countries such as Canada, Germany, and the United States, show that an improved IVET plays a key role in not only increasing and improving the skilled labor force, but also in enhancing learning results of academic disciplines, particularly STEM areas (NRCCTE, 2007). However, regarding Tajikistan, there is no clear strategy outlined in the educational strategic documents as to how the government is going to address improving IVET's low status and enrollments.

According to the analysis of European Training Foundation (ETF, 2014), there are several "internal factors" that hinder "successful implementation of the strategy" (pp. 9-10), such as poor participation of local authorities, inexperienced IVET staff, and insufficient resources. Another contributing factor to IVET's low status and enrollments is the lack of career guidance and development programs for students while they are in secondary schools. When career guidance programs do not exist or function poorly, students will seek guidance from other resources such as parents, peers, siblings, and teachers (Gaunt & Palmer, 2005; Ginevra, Nota, Ferrari, 2015; Stafford, 2014) that may not provide appropriate career guidance and information that is based on the needs, interests, and abilities of students. In Tajikistan, schools do not offer career guidance services and have no career counselling staff. Although the government approved a Concept of Career Guidance in 2010 and a Program for Career Guidance Development for the period of 2011-2015 (Government of Tajikistan, 2010; Government of Tajikistan, 2011), the services provided by the National Career Guidance Center are generic and

due to the limited resources not accessible to a larger population of students (ETF, 2017; MLME Agency for Labor and Employment, 2015, 2016).

In developed countries, particularly those in Western Europe and North America, it has been a long-standing tradition to continuously conduct research and evaluate the impact of educational programs and curricula, and to further improve them based on the yielded results. Specifically, studies are being conducted on both career guidance and IVET/Career and Technical Education (CTE) and their impact on students' learning outcomes, employability, and college and workplace readiness skills. Comparison has been conducted to see how IVET and non-IVET students perceive IVET (Gaunt, 2005; Stafford, 2014). The existence of continuous research in education allows these countries to discover solutions to problems and explore new research areas that ultimately lead to educational and economic improvement.

With regard to Tajikistan, one of the severe shortcomings in education is the absence of data and research (Organization for Economic Cooperation and Development [OECD], 2011). Similar to other fields in the country, research has not yet become a tradition in education. The main reason for this shortcoming is the lack of research capacity that stems from the fact that during the Soviet era all research was done centrally in Moscow, and local educational journals primarily published opinion-based articles (Niyozov & Bahry, 2006). This shortcoming, therefore, leads to the absence of reliable empirical data that can be used by policymakers for decision making. In turn, when ill-informed decisions do not lead to improvement, uncertainties may continue.

As for IVET, apart from analytical and project reports produced by international organizations such as ETF, German Corporation for International Cooperation (GIZ), International Labor Organizations (ILO), and the World Bank (WB), there is a dearth of empirical studies that involve exploring students' perspectives about the educational system and the reasons they choose to enroll. There are anecdotal beliefs about the profile of Tajikistani students enrolled in IVET and the factors that influence their decision-making, yet, none of those factors have been empirically studied and tested.

Given the trends and issues mentioned above, this study will be the first to be conducted in the field of IVET targeting the main beneficiaries: the students. It contributes to the research knowledge base by exploring IVET students' profiles and the factors that influence their decision-making to enroll in IVET programs. Based on the findings, recommendations will be made for government, policy makers, education departments, and schools on improving career guidance for secondary students so that they become aware of the various educational and occupational opportunities and make more informed career decisions while in secondary schools.

Limitations

This study was limited by the following boundaries:

1. This study was geographically limited to the Republic of Tajikistan.
2. The study was limited to initial vocational education and training (IVET) programs offered in the 61 IVET lyceums under the jurisdiction of the Ministry of Labor, Migration, and Employment (MLME) of the Republic of Tajikistan.
3. The study was limited to students that are enrolled in IVET lyceums under the jurisdiction of MLME of the Republic of Tajikistan.

4. The study was retrospective in that students were asked to reflect on the decisions that took place in the past.
5. For confidentiality students self-reported their exit examination grades from general secondary school.
6. The collected questionnaires were manually entered into MS Excel spreadsheet where human error is possible.

Assumptions

The following assumptions were made for this study:

1. Students enrolled in IVET lyceums were genuine in reporting their choice for enrolling.
2. Majority of students enrolled in IVET lyceums are basic general education (9^{th} grade) completers.
3. Students have opinions about who was influential in their decision-making to enroll in IVET.

Procedures

Data were collected in this quantitative study by surveying Tajikistani students enrolled in IVET lyceums during 2017-2018 academic year. The researcher corresponded with the primary author of the instrument and was granted permission to use the instrument by adapting it to the context of this research. The researcher sent a letter to the Ministry of Labor, Migration, and Employment of the Republic of Tajikistan asking for permission to conduct the study. After receiving permission from MLME and Old Dominion University's IRB approval, the researcher selected schools from each of the five region using a stratified random sampling method.

The instrument was previously used by Gaunt (2005) and subsequently adapted by Gean (2010) and Stafford (2014) for their dissertations' research. The final instrument was comprised of four sections. Section 1 solicited demographic information such as students' gender, age, place of living (rural or urban), examination grades received in general school, parents' level of education, residency status while studying in IVET lyceum, and family economic situation. Section 2 consisted of the list of programs of study that students were enrolled. There are 83 vocational programs grouped into seven clusters, such as Automobile and Transportation, Business, Construction, Information Technology (IT), Manufacturing and Industry, Family and Consumer Science (Service sector), and Agriculture. Section 3 included 5-point Likert-type scale questions that gathered information about the factors that influenced students' decisions to enroll in IVET lyceums and programs. Section 4 consisted of questions related to students' career plans after graduating from IVET lyceums.

Data were analyzed using descriptive statistics including percentages, means, median, and frequencies. Also, a factor analysis was conducted to load the influencing factors into categories. Further analysis was performed using a Mann-Whitney *U* test to examine the difference between students who enrolled in IVET lyceum after 9th grade and those enrolled after 11th grade in terms of factors that influenced their decision to enroll. Several chi-square tests and paired *t*-tests were conducted to check for varieties of relationship.

Definitions of Terms

The following list of terms and definitions will help the reader have a better understanding of this study:

Career decision factors: Factors used in this study to describe a person, event, experience, or situation that students report as having impact on their decision-making about enrolling in IVET lyceum.

Career decision-making: “is a description of a psychological process in which one organizes information, deliberates among alternatives, and makes a commitment to a course of career action” (Harren, 1979, p. 119). In this study, career decision-making involves IVET students’ choice of IVET lyceums and programs.

Career and Technical Education (CTE): CTE is a contemporary term for vocational and technical education. It is “organized educational programs offering a sequence of courses directly related to the preparation of individuals in paid or unpaid employment and in current or emerging occupations requiring other than a baccalaureate or advanced degree” (Gordon, 2014, p.457).

Factor: The term refers to individual variables that influence the decision-making of students in Tajikistan to enroll in IVET lyceums and choose a specific IVET program.

Initial vocational education and training (IVET): (a) initial vocational education and training (IVET) is the first level of professional/vocational education that prepares entry-level workers for the labor market. In addition, IVET provides training and retraining of adult citizens who do not have initial vocational training (Government of the Republic of Tajikistan, [IVET Law, No 491], 2009).

(b) it “includes programmes mainly designed for and used by young people (...those under 30) at the beginning of their careers and commonly before entering the labour market” (Field, Hoeckel, Kis, & Kuczera, 2009, p. 18).

IVET lyceum: formally called *technical training school* or mostly known in its Russian version as professionalnoe tekhnicheskoe uchilishe *(PTU).* IVET lyceums are institutions under the authority of Ministry of Labor, Migration, and Employment of the Republic of Tajikistan that provide different type of technical and trade occupations for entry-level positions. In the context of the U.S. education system, IVET lyceums may be equivalent of career and technical education schools where “the curriculum is narrower in concentration [and] all coursework is focused on career and technical education programs and accompanied by core academic components” (Gaunt, 2005, p. 4).

Tajikistan: A mountainous country located in Central Asia bordering China, Afghanistan, Kyrgyzstan, and Uzbekistan. The modern Tajikistan was established in 1929 as a Soviet Socialist Republic (SSR). It became independent in 1991 as a result of the USSR collapse.

Vocational Education and Training (VET): “Includes education and training programmes designed for, and typically leading to, a particular job or type of job.” (Field et al., 2009, p. 18)

Vocational/career guidance: “Services intended to assist individuals of any age and at any point throughout their lives, to make educational, training and occupational choices and to manage their careers” (Wats & Sultana, 204, p. 107).

Summary and Overview

One of the challenges that students encounter during their transition from general secondary school to postsecondary education or work is to decide about choosing a major or career that is based on their interests, aptitudes, and abilities. Choosing a

career that is relevant to their needs will make their transition smoother and their postsecondary education or employment more successful.

Initial VET institutions continue to be labeled as a last option in Tajikistan. Accordingly, students enrolled in IVET programs are usually deemed as those with discipline problems, low-income families, and/or poor academic performance. Even though IVET has changed its image to some extent, the public perception toward it has not been fully reshaped. This is common in the developing countries, such as Tajikistan, that have not been able to adapt the system to the demands of the modern economy, technological advancement, and the labor markets both nationally and globally.

In Chapter II, Review of Literature, research studies about IVET and the factors that influence students to enroll in IVET and choose their careers and majors will be explored both in Tajikistan and internationally. Chapter III, Methods and Procedures, highlights the type of research methods used to collect data, population and sample characteristics, and statistical analysis used to reach conclusions. Chapter IV, Findings, will contain an in-depth explanation of the statistical analysis and treatment of the data obtained. It will also report on the findings of the study both in narration and tables. Chapter V, Summary, Conclusions, and Recommendations will present a summary of the research and draw conclusion based on the findings. Recommendations will be made based on the research results and future research needs will made as well.

CHAPTER II

REVIEW OF LITERATURE

The following chapter is a review of related literature in the study of factors influencing career decision for students of initial vocational education and training (IVET) in the Republic of Tajikistan. To provide the reader with a better understanding of the topic, the first section of this chapter presents a synopsis of vocational education in general. The second section provides an overview of the education system in Tajikistan, and the third section offers an analysis of Tajikistan's IVET system and its role in workforce development. Further, the review presents analysis of literature on career decision-making for adolescents, influencing factors for IVET enrolment, and career guidance in secondary schools. Given the dearth of empirical studies about factors influencing IVET enrollment in Tajikistan, this review includes studies with similar variables from other developed and developing countries. It should be noted that majority of the research on the topic has been conducted in the United States, Europe, and Australia. Several related studies were also found from Turkey, Russia, China, and African countries.

General Overview of Vocational Education and Training

Vocational education and training (VET) is known by different names in different parts of the world. The names are vocational and technical education (VTE), technical and vocational education and training (TVET), career and technical education (CTE), apprenticeship training, vocational education and training (VET), occupational education (OE), professional and vocational education (PVE), further education and training (FET), and Workforce Education (MacKenzie & Polvere, 2009).

The goal of vocational and technical education has long been defined as training and preparation of people directly for work (Pavlova, 2009) and mainly it was about training for the occupations that are deemed as requiring low-level skills (Moodie, 2002). However, it is difficult to characterize vocational education and training with a single definition. As Moodie (2002) adds:

> We have seen that no single characteristic consistently identifies vocational education and training in different jurisdictions or even in the same jurisdiction over different historical periods. Since a characteristic used to identify vocational education and training at one time has had to be changed as vocational education and training itself adapted and changed, it is unlikely that any single characteristic we identify now will be adequate to encompass the next historical shift. (p. 259)

The technological advancement and the challenges of the current century are changing both the concept and the content of VET. Vocational and technical education policy makers and stake holders are wanted to take into consideration issues such as climate change, sustainable development, lifelong learning, equity and equality, entrepreneurial education, and youth employment while re-conceptualizing VET (UNESCO, 2012). One of the major and global problem in VET has been its image. The public perception of VET has been particularly poor in the developing countries where the system receives the least amount of attention, financing, and research in comparison to other levels of education (Watson, 1994). To this end, governments and VET policy makers worldwide have been putting all efforts, through adoption of legislation and other strategic policy document such as the Strengthening Career and

Technical Education for the 21st Century Act (2018), in the United States, A New Skills Agenda for Europe (2016), and TVET Strategy for 2016-2021 adopted by UNESCO (2016) member states, to make VET closer to the economic realities. These measures would also change its traditional role so that it not only provides graduates with job-related technical skills but also enables them to pursue further educational opportunities (Pavlova, 2009).

In general, trends such as globalization, digitalization and automation, aging population, especially in the developed countries, migration, skilled workforce deficit, and transformation in education and learning are dictating the reform of training and development of the new workforce worldwide (European Commission, 2016; Tarique, 2014).

Overview of Education System in the Republic of Tajikistan

The current education system in Tajikistan, as in other former Soviet Central Asian countries, was established by the Soviets after these countries were created and integrated into the Soviet Union (Niyozov & Bahry, 2006; Whitsel, 2009). During that period, as Pavlova (2009) describes:

> …central control of the school curriculum became the main managing principle throughout the Soviet era and beyond. All students had to follow the same school curriculum. The main objectives and the content of each subject were also the same. The process of learning was mainly focused on the acquisition of systematic knowledge. (p.126)

In addition, it was expected that students acquire as much encyclopedic knowledge as possible and general wisdom was main goal of education (Pavlova, 2009).

In Tajikistan, the Soviet-style education system remained intact for almost a decade after the 1991 independence. The country's political unrest in early 1990s and the resulting socio-economic devastation delayed the reform of education, which had no longer reflected the decentralized free-market economy. The major educational reform initiatives, programs, and policies started from the early 2000s.

General education in Tajikistan starts when children reach the age of 6-7 and continues until they are 17-18 years old. The length of general education is 11 years; however, the government intends to extend it to 12 years in the framework of the new reform program, known as National Strategy of Education Development (NSED) 2020 (Government of Tajikistan, 2012a). Currently, general education consists of three levels: primary (1-4 grades), general basic or lower secondary (5-9 grades) and general secondary or upper secondary (10-11 grades) and is being delivered in general comprehensive schools, gymnasiums, and lyceums. Students have the option to quit schooling after ninth grade and receive *Attestat* (Certificate) of General Basic Education. After completion of 11th grade students receive *Attestat* (Certificate) of General Secondary Education (Education Law of the Republic of Tajikistan, 2014).

Professional (vocational) education is comprised of three levels: initial, secondary, and higher vocational education. Initial VET, which is the focus of this study, will be examined in the next dedicated section in detail. As for secondary vocational education (similar to the U.S. community college system), it is offered in specialized colleges, previously known as *technikums*. As of 2015-16 academic year, there were 66 such institutions with total of 68,900 students enrolled. The duration of education in secondary vocational colleges lasts from 2 to 4 years depending on the field of study.

With regard to higher vocational/professional education systems, as of 2015-16 academic year there were 38 higher education institutions, including seven branch campuses with 176,000 enrollments (Statistical Agency of Tajikistan, 2017a,b).

Within the recent reform program, or NSED 2020, the Government of Tajikistan started to align the higher education system with the Bologna model. This includes introduction of European Credit Transfer System (ECTS) and the three-level higher education degrees of Bachelors, Masters, and Ph.D in several universities, while also keeping the Soviet-system of Diploma of Specialist, Candidate of Science, and Doctor of Science (Government of the Republic of Tajikistan, 2012a; World Education News & Reviews, 2015). Figure 1 provides an overview of the education system in Tajikistan.

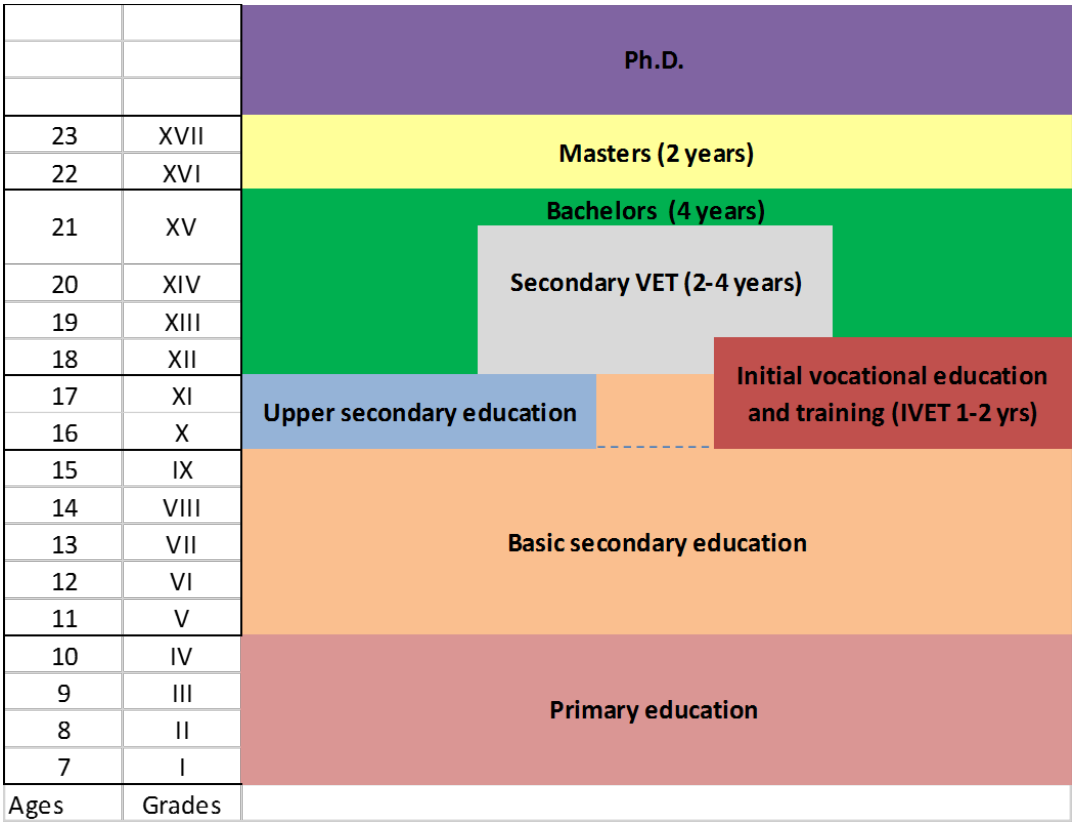

Figure 1. Structure of the education system in Tajikistan. *Source:* Adapted from ETF (2014). Torino process: Tajikistan.

Initial Vocational Education and Training (IVET) in Tajikistan

The overall IVET policy objective is to support the supply of skilled workforce for entry level jobs for both internal and external labor markets. The Law of the Republic of Tajikistan About IVET (Article 1) defines its purpose as “satisfying the educational and training needs of citizens, who do not have initial vocational education, through training, retraining, and professional development”.

Initial VET was administered by Ministry of Labor and Social Protection from 1996 to 2007. Then, during the 2008 government’s reorganization it was transferred under the administration of Ministry of Education. From early 2014, IVET was transferred back under the authority of the restructured Ministry of Labor, Migration, and Employment (MLME) of the Republic of Tajikistan. Initial VET is delivered in vocational technical centers and vocational lyceums. Enrollment in IVET programs starts after students complete at least their general basic education (9^{th} grade). Students enrolling in IVET after ninth grade have two options: to study for one year and only receive their specialty/trade certificate; or they can study for two years to receive general secondary education certificate (*attestat*) as well. If they choose the first option, they will not be able to continue their education at bachelor’s level in case they want to pursue later in their life (see Figure 1). The majority of students enroll in IVET after ninth grade and their motivation is that in these schools they earn both a trade/occupation certificate and an *attestat* (high school diploma); (R. Gulshanov, personal communication, April 03, 2016).

As for the profile of these students, it is commonly believed they have poor academic performance in general school, they come from family with lower socio-

economic status, and desire to enter the labor market earlier. Students who complete general secondary education (11th grade) also can enroll in IVET to study only for an occupational certificate within one to two years. However, these students are in the minority because there is a high tendency for 11th grade graduates to enroll in universities (Ministry of Education of the Republic of Tajikistan, 2013; Quddusov, 2013).

In addition, legislation allows IVET institutions to offer programs, such as vocational preparation, additional vocational training, including retraining, and professional development that can last up to one year (Law on IVET, Article 9, 2003). The current IVET system is largely the one that was established during the Soviet time "within the tradition of the central economic planning and centralized job placement" (Heyneman, 1997, p. 22). Therefore, with the collapse of the Soviet Union and Tajikistan's transition to a new economy, the system almost became obsolete in the face of new demands in the labor market. As a result, the already stigmatized IVET system further lost its prestige among students and parents because it prepared students for entry-level jobs in industry and agriculture without future career opportunities. The image of IVET further deteriorated because of the post-independence political instability and the resulting economic downturn and privatization of the enterprises in the country during the 1990s (Faudel, Grootings, & Ashurov, 2005).

As a result of privatization, many enterprises stopped functioning that led to the loss of potential employers for the IVET graduates, which led to the closure of several IVET schools that were attached to specific industrial enterprises. Subsequently, the number of schools reduced from 72 in 1997 to 61 in 2016. The number of students

decreased accordingly from 25,000 to 23,000 during the same period (Ministry of Education, 2013; Statistical Agency of Tajikistan, 2017a).

As a result of further reform, IVET schools were renamed to IVET lyceums and their number was reduced as some of them were merged. Currently, there are 61 IVET lyceums in Tajikistan that are unevenly located in the country's four administrative divisions (MLME, 2015). Table 1 displays the number of IVET lyceums per region. Also, there is one Industrial-Pedagogical College, which is located in the capital city – Dushanbe tasked to train and professionally develop masters and trainers for IVET lyceums.

Table 1

The Number of IVET Lyceums and Student Population per Region in Tajikistan

Regions	Total IVET student population	Number of IVET lyceum
Dushanbe (capital city)	5259	11
Districts of Republican Subordination (DRS)	3489	10
Khatlon Province	6359	17
Mountainous Badakhshan Autonomous Province (MBAP)	360	1
Sughd Province	7676	22

Source: MLME, 2016. IVET Statistics in 2016.

Traditionally IVET institutions have low enrollment. For example, during the period of 2005 – 2010, 230,000 students graduated on average from general basic and secondary schools annually. Out of these students, annually only 14,000 enrolled in IVET, 11,000 in secondary VET, and 31,000 in tertiary vocational education. Considering this, 90,000 graduates of general basic and secondary schools on average

did not enroll in any type of vocational education annually, and consequently enter internal and external labor markets without any qualifications and skills (Government of Tajikistan, 2012a).

It should be mentioned that the regions of Tajikistan have noticeable differences in terms of demographics and socio-economic development which has been the case since the Soviet times. The Sughd (former Leninobod) province in the North has been the most developed of the country, and in 1992, 84% of the country's factories were located there. In 1994, the region accounted for 62% of the country's economy. The Khatlon province with two of the major cities (Kulob and Bokhtar) in the South and South-West has been largely an agricultural zone of the country. The Mountainous Badakhshan Autonomous Province (mostly known by its Russian abbreviation of "GBAO") accounts for almost half of the country's territory but only has 2.5% of its population. It's has been the least developed province with high unemployment rate. The Districts of Republican Subordination (DRS) that includes 13 districts stretching from the West to East are also mainly dependent on agriculture with the exception of an aluminum plant in the western city of Tursunzoda (Nurzhanov & Bleuer, 2013).

The aforementioned weak and uneven economic development in the country adds more challenges to the existing IVET's difficult situation. In addition, the system lost ties with the world of work, which made it challenging for IVET schools to send students for practical training to enterprises. In the past, however, this cooperation was taken for granted given the structure of the centrally planned economy. Because schools were used to receive directives from the central planning authority on the number of workers to be trained, they became unable to independently determine the

needs for labor force in the new economy. Therefore, IVET continued to exist in a survival mode without enough attention and support for more than a decade after the country's independence (Faudel et al., 2005). Losing connection with the world of work has resulted in IVET schools providing knowledge, skills, and qualifications that are less or not demanded at all in the labor market. This mismatch between graduates' skills and the demand in the labor market results in shortage of skilled labor force. The issue is becoming severe as the older generation of specialists or those trained during the Soviet times are retiring. This trend makes Tajikistan a rare country, where education and qualification level of the older generation of workforce is better than that of the youngers' (Government of Tajikistan, 2012a; ETF, 2014), and research shows that employers, particularly in the fields of engineering, education, and health prefer to hire employees trained in the Soviet period (Jonbekova, 2015).

Moreover, the IVET system does not yet have the capabilities to develop vocational programs and curricula for the emerging occupations and skills in some of the sectors of the economy such as service, construction, energy, and business/entrepreneurship. In fact, the service sector is becoming one of the main contributors to the country's GDP growth (50.6% as of 2012) and employment (26.5% as of 2012; Statistical Agency of Tajikistan, 2013). A similar trend is observed in the energy and construction sectors.

The challenges in the IVET system stem from several intertwined factors. The first and foremost influential factor is the insufficiency of budget allocation for the system, which, in turn, leads to other factors. In 2013, the state allocated 35 million TJS (equals 5.6 million 2015 USD) of which more than half was staff and faculties salary

(ETF, 2014). This means that not enough money is left for purchase of new equipment, maintenance of current technologies, faculties' professional development, curriculum design, and other activities.

The quality of education and professional development of vocational education teachers and trainers are one of the core ingredients for the success of training programs and graduates' achievements in the labor market. The role of IVET professionals in addressing the issues of unemployment and social exclusion in the face of changing demand of the economy has been emphasized by researchers. They found that IVET trainers are required to have a broad profile rather than the traditional focus on just a single subject, including career guidance and helping students with finding job (Attwell, 1997; Saunders, 2012; Volmari, Helakorpi, & Fimodt, 2009).

However, the characteristics of the IVET teachers and instructors in Tajikistan show that there is an acute shortage of teaching and training staff with relevant quality. For example, as of academic year of 2013-2014 only 42.25% of teachers and instructors had higher education, 16% were pursuing their higher education degrees through correspondence education, 29.8% graduated from IVET or SVET, and 11.7% only had general secondary education (Government of Tajikistan, 2012b). This shortfall has a negative impact on quality of instruction and learning outcomes, thereby compromising the knowledge, skills, and employment opportunity of the prospective workforce.

"Effective vocational training can only be given where the training jobs are carried on in the same way with the same operations, the same tools and the same machines as in the occupation itself" (Prosser & Allen, 1925). This theorem suggests that the

quality output of vocational training depends upon how similar is the learning setting of an occupation to the real settings of the work environment, and also how identical the operations are taught by the instructors. Prosser (1925) also believed in duality of education, that is, separation of vocational education and academic education. From his perspective, some students were more suited for vocational education and the academically inclined students were more suited for academic education. This viewpoint, however, was opposed by John Dewey whose philosophy supported the integration of the two and "argued that vocational education was needed for all students rather than for certain students…" (Martinez, 2007, p. 73).

In light of the aforementioned argument, given today's work environment equipped with advanced technology and complex machines requiring even novice workers to have higher-order thinking skills, the IVET institutions should aspire to create that learning environment. In other words, an environment that not only requires the physical resemblance of today's workplace but one that also promotes and facilitates learning of critical and higher-order thinking skills. Otherwise, they will add more to the increasing number of unemployed youth population. In fact, machinery and technology is one of the two key factors recognized by the government that enables IVET to efficiently respond to the labor market needs (Government of Tajikistan, 2012b). Unfortunately, the IVET system in Tajikistan is falling behind in terms of updating and upgrading its training facilities and technologies. According to ETF (2014) analysis, most of the equipment in IVET institutions is outdated, particularly the agricultural machinery that was purchased during 1970s and 1980s. As for computers, IVET institutions do not have them in sufficient quantities. Educational statistics shows that in

2012-2013 student to computer ratio was 19:1, and during that period only one IVET school had an internet connection (Ministry of Education, 2013; Government of Tajikistan, 2012a). This acute shortage of equipment in IVET shows the weakness of the system in the face of fast technological advancement in the workplace.

Practices from developed countries such as Germany (Hippach-Schneider, Krause, & Woll, 2007) and United States (Jackson & Hasak, 2014; Norwood, 2015) show that active participation of industry and business in the process of curriculum development and training brings about a win-win situation for IVET and employers. In other words, IVET curriculum will better represent the market's demand when having employers' representatives participate in the design and development process. In turn, business and industry will have a greater chance to hire more competitive and productive employees. In this respect, in Tajikistan, cooperation between IVET institutions and employers is weak and not producing fruitful results (ETF, 2014). Usually, the cooperation starts and ends with IVET institutions sending students to enterprises, if they exist at all, for practical training (Faudel et al., 2005; ETF, 2014). To improve the situation in this aspect, in August 2012, the government adopted a law, which provides a legal basis for establishing a partnership between training providers and the world of work (Law on training of specialists based on labor market needs, 2012). However, it is still too early to expect any tangible progress that this legislation may have caused.

Another major problem that impedes not only IVET but the overall education system from advancing is the absence of reliable data, which is crucial to informed decision-making for educators, policy makers, employers, parents, and students. This

shortcoming is common for other former-Soviet countries, including Russia, that leads to opinion and feeling-based discussion rather than evidence-based (Heyneman, 1997). Lack of empirical research in Tajikistan mainly stems from two factors: first, the inheritance of the Soviet legacy of centralized planning and decision-making; second, the weak research capacity among both government policy makers and universities community (Niyozov & Bahry, 2006). For IVET institutions to stay current with the labor market, empirical research is a must. For example, it is futile to continue using the same curriculum or vocational program for a long period without knowing if it is making significant improvement in learning outcomes, or without tracking graduates' success in their workplaces.

Career decision-making for adolescents

Adolescence is a period when major transitions take place. It is the time when adolescents make "educational commitment to career choices" (Sharf, 2010, p. 221). Hall (1904) regarded it a period of storm-and-stress, while Erikson viewed it as "identity and role confusion", and Piaget called it a period of "mild turmoil" (Sharf, 2010, p.222). The difficulties double given the physical and psychological changes that take place during this period of life (Hendry & Kloep, 2012; Sharf, 2010). Also, during this period young people have to decide whether to start working after high school or continue postsecondary education, and if the latter is chosen, then they need to make a decision what type of postsecondary institution to join (Mortimer, Zimmer-Gembeck, Holmes, & Shanahan, 2002).

In addition to adolescence being a difficult period, decision-making itself is not an easy process. It is "a complex, dynamic, and cognitive process in which an individual

uses reasoning to evaluate possible alternatives systematically and to make the choice among alternatives to reach consistency between premises and conclusions." (Seda, 1996, p. 5). The process can be exacerbated by the many choices that are available and the considerations needed to be taken by students in the developed countries (Vertsberg & Gati, 2015). However, the decision-making process can also be stressful due to the limited educational and work opportunities and/or alternatives in developing countries such as Tajikistan. The existence of "a number of alternative courses of action" plays a key role in "the process of selecting one action" over another, which Bross called decision (1953, p. 1).

Career decision-making has a remarkable impact on adolescents' sense of identity and it is considered a major commitment they need to make. However, due to the rapid changes in the labor market and technological advancement, the decision-making process can also pose a threat to their self-identity, which leads them to take a psychosocial moratorium – meaning suspension of career decision-making and postponing it to a later time (Erikson, 1968; Mortimer et al. 2002). Adolescent students need to make decision about whether to continue to high school or join the labor force. If they choose high school, then they must decide on which subject to put more focus (e.g. to study more science if one wants to pursue medicine), and what kind of elective courses to take (Bacanli, 2015; Hijazi, Tatar, & Gati, 2004).

Given the abovementioned psychological, physical, and psychosocial transformation and challenges, coupled with economic instability, adolescents often encounter career decision-making difficulties. These difficulties can lead them to either stop the decision-making process or choose an alternative route that may be less

desirable (Gati, Krausz, & Osipow, 1996). Thus, several studies have been conducted to examine the patterns and the types of difficulties associated with career decision-making for adolescents (Albion, 2000; Bacanli, 2015; Gati et al., 1996; Gati & Saka, 2001; Hijazi et al., 2004; Rojewski & Hill, 1998).

Gati et al. (1996) developed a hierarchic taxonomy of career decision-making difficulties. In this taxonomy the difficulties were grouped into three major categories and further into 10 subcategories. The first major category lack of readiness, which consists of four types of difficulties – lack of motivation, indecisiveness, dysfunctional myths, and lack of knowledge about the process – occur prior to the beginning of the career-decision making process. The second category is lack of information, which includes lack of knowledge about the process, and lack of information about self, occupations, and ways of obtaining information. The third category is inconsistent information, which includes unreliable information, internal conflicts, and external conflicts. Both the second and third major categories of difficulties can happen during the career decision-making process. Although Gati et al.'s (1996) research sample consisted of late adolescents and young adults from Israel and the United States, the taxonomy and the associated career decision-making difficulties questionnaire (CDDQ) can be adapted and used with different age categories and in a different cultural and socioeconomic context (Hijazi et al., 2004).

Hijazi et al. (2004) used the aforementioned taxonomy as a theoretical framework for their research to examine the patterns of career decision-making difficulties among Arab high-school students living in the Palestinian Authority areas: East Jerusalim and Israel. Specifically, they examined the possible effects of one

culture (Arab) and varied socioeconomic and political conditions of three areas on students' perceptions of career decision-making difficulties. Contrary to expectations, the study found that differences in socioeconomic and political situations in the targeted areas did not affect the degree of career decision-making difficulties in those areas. There were, however, gender differences for specific scales; for example, boys experienced greater difficulties in the scales of external conflicts and lack of information, while girls generally were more indecisive.

Rojewski and Hill (2009) examined the impact of gender and academic risk status on career decision-making for adolescents and found patterns of difficulties similar to the two studies mentioned above. Rojewski et al. also found gender differences and that female reported fewer difficulties with career decision-making than male. Similar to Hijazi et al. (2004), male adolescents had external barriers and also "were more likely to feel discouraged, lack necessary information to make career decisions, and lack interest in making a career choice" (Rojewski & Hill, 1998, p. 276). In terms of academic risk status, they found that adolescents with substantial risk behavior were more prone to face career decision-making difficulties than their peers with minimal risk behavior.

Bacanli (2015) adapted the Career Decision Difficulties Questionnaire (CDDQ; Gati et al., 1996; Gati & Saka's; 2001) and administered it in Turkey, which, to some extent has similar socio-cultural context to Tajikistan, to examine differences of difficulties in terms of gender, grade, and decision status (decided or not). The study found differences in all three variables in some scales of the CDDQ. The gender differences were consistent with the results found by Hijazi et al. (2004) and Rojewski

and Hill (2009). Also, similar to academic status examined by Rojewski and Hill, Bacanli (2015) found while examining decision status that undecided students encountered more difficulties than their decided peers on nine scales including external conflicts. Mainly because of the collective-decision making culture, one aspect that was different for Turkish adolescents was that parents' and teachers' (external conflict scale) interventions occurred prior to the career decision-making process rather than during, thus moving the external conflicts scale from the category of inconsistent information to lack of readiness.

Albion (2000) used the CDDQ to examine career decision-making difficulties for Australian high school students and also investigated differences based on their gender and type of school (single-gender and gender-mix). Adolescents in this study reported having career decision-making difficulties. In regard to gender, there were no differences. However, differences between school types were significant, that is adolescent boys and girls from "single-gender schools [were] more likely to be undecided than students from coeducational schools" (p. 9).

Adolescence is not an easy period of life, especially when it comes for adolescents to make decision in regard to their future education and/or career (Gati & Saka, 2001). In light of the aforementioned studies, they face stressful moments before and during the actual process of career decision-making. In addition, there are various factors that intervene and influence adolescents' career decision-making (Sharf, 2010).

Influencing Factors in IVET Enrolment

An increasing amount of research has been conducted both in developed and developing countries to explore the factors that influence adolescents' career decision-

making in general (Ginevra, Nota, & Ferrari, 2015; Granitz, Chen, & Kohli, 2014; Lam, 1982; Loera, Nakamoto, Oh, & Rueda, 2013; Ogowewo, 2010; Paik & Shim, 2013; Rojewski & Hill, 1998; Super, 1953; Super, 1980; Tang, Pan, & Newmeyer, 2008; Young & Powlette, 1995).

Donald Super is one of the prominent figures for his work in the field of career development. Super's (1953) theory of vocational development emphasizes five vocational life stages that include growth, exploration, establishment, maintenance, and decline. These stages, in turn, are divided into substages. For example, during the growth stage (ages 4-13) adolescents' career development starts with curiosity and fantasies. Later, they develop interests and subsequently adolescents become aware of their capacities. During the next stage labeled exploration (ages 14-24), it includes three substages of crystalizing, specifying, and implementing. Adolescents enter the period of transition around the age of 18 (Super, Savikas, & Super, 1996). During this stage adolescents understand the need for decision-making about life after high school. For example, they must decide whether to go to college and what major to choose (Sharf, 2010). The other three stages are establishment (ages 25-44), maintenance (ages 45-65), and disengagement (ages 65 and above; Super, et al., 1996).

However, Super's concept of career maturity – the readiness to make career choice – denotes that both adolescents and adults differ in their level of readiness to make choices believed to be appropriate for their age (Prideaux & Creed, 2001). In other words, not all adolescents are able to develop values or identify their interests at the age of 17, particularly across different countries and cultures. In addition, different roles that individuals have in life and various personal and social factors influence their

career development (Super, 1980). Therefore, different interventions may be necessary to accommodate adolescents' needs based on their level of career maturity (Gysbers et al., 2003).

In studying high school students' postsecondary educational plans, Lam (1982) identified three categories of factors including socioeconomic (remote external), school (immediate external), and students' motivation, attitude, values (intra-personal) that were influential in their decision-making. Even though Lam's study is more than 30 years old and not necessarily related to IVET students, recent research found these factors prevailing for both secondary and postsecondary students, including IVET and non-IVET students (Gaunt, 2005; Stafford, 2014; Yi et al., 2015; Powell & McGarth, 2013). In fact, Gaunt (2005) reexamined Lam's classification of influencing factors in the context of IVET in the United States.

In addition to being the most used sources of information for adolescents to make decisions, parents were influential in other aspects of career decision-making. In regard to choosing postsecondary majors, students themselves are the primary decision-makers with parents and other family members being the dominant influencers. Parents are followed by friends, teachers and school counselors. Other non-human factors such as monetary rewards, school image, and program quality also influence their decision to choose major and college (Granitz et al., 2014, p. 10).

Parents and family's direct or indirect influence is not only dominant in the United States but also in Europe, Asia, and in African countries. For example, in a study of Italian parents' support and its relationship to their children's career decision-making, Ginevra et al (2015) found that "adolescents' perceptions of parental support indirectly

predicted career choice through the mediating effect of career self-efficacy" (p. 11). Thus, the authors recommended to include parents and adolescents in studies that deal with youth career development. Chinese parents were influential in deciding to send their children for study to the United States (Chao, 2016), and maternal education was found to strongly correlate with dropout rates among technical and vocational education and training (TVET) students in China (Yi et al., 2015).

Studies from other countries such as South Africa (Powell & McGrath, 2013; Shumba & Naong; 2012), South Korea (Paik & Shim, 2013), Guyana (Ogowewo, 2010), Kenya (Edwards & Quinter, 2011), and Canada (Powlette & Young, 1995) found that adolescents' career decision-making was influenced by their families (social factor), personal interests and abilities, and gender (personal factor), outcome expectancies including financial rewards and job opportunities (economic factor), and program quality, image, teachers, and school counselors (school factors).

Shortage of skilled workforce, skills gap, and unemployment in the face of globalization not only are problems of developing countries but are also concerns of the developed nations (Levin, 2015; Rojewski & Lasonen, 2004; Symonds, Schwartz, & Ferguson, 2011; United Nations, 2013). In light of these challenges, a well-organized vocational and technical education has been considered as one of the potential remedies at both international (UNESCO, 2016) and national levels (Government of Tajikistan, 2010a). Accordingly, the body of research on students' perceptions, interests, and choices of IVET is growing. Researchers are exploring what type of factors influence students' decision-making to enroll and/or not to enroll in IVET (Gean, 2010; Dalley-Trim, Alloway, & Walker, 2008; DeFeo, 2015; Esters, 2007; Gaunt, 2005;

Onder, Onder, Kuvat, & Tas, 2013; Polat, 2014; Powell & McGrath, 2013; Stafford, 2014).

Influence of Personal Factors

Personal factors such as vocational/occupational interests, perceptions, ambitions, academic performance in secondary education, and gender influence adolescents' career decision-making in regard to enrolling in IVET (DeFeo, 2015; Esters, 2007; Gaunt, 2005; Misola, 2010). Adolescents develop certain interests, capacities, and values (Super, 1955). For example, if asked what they want to be in the future, some might say like my father or like my mother, even though these choices may be changed later based on maturation of interests and aptitudes. They also develop interests through exposure to other occupations that are external to their families such as occupations they encounter in their communities.

In addition, Super (1955) believed that adolescents develop an understanding of their abilities, which may lead to a revision of their earlier choices that one made solely based on their interests. For example, if an adolescent realizes that he or she is not good in geometry and drawing, he or she may cancel his or her choice of a major that requires a solid knowledge of that subject. However, not every adolescent understands his or her capacity. This can lead to a mismatch of career choice and students' abilities, personalities, and aptitudes, which, in turn, leads to dropout from further education and training (Ryan, 2014), unsuccessful career, or in general, an unhappy life (Parsons, 1909). Therefore, the role of career guidance becomes an important aspect of career decision-making process. As a result, one task of career guidance personnel becomes

helping adolescents assess their capacities in relation to their interests and direct them to the right path.

Interest and perception.

In a study of urban graduates of secondary agriculture programs, students reported personal factors affecting their decision-making to enroll or not to enroll in postsecondary agriculture program (Esters, 2007). Another study reported that 70% of students were the primary decision makers in choosing their postsecondary major (Granitz, Chen, & Kohli, 2014). In a qualitative study by Jackson (2002), students mentioned that their interest in the program was a deciding factor to enroll in CTE program. For example, a student in Animal Science program said “I really enjoyed working with animals. I already knew it would be hard work, so I was prepared for this program” (p.4). DeFeo (2015) studied why technical high school and comprehensive high school students enrolled in CTE programs. She found that 55% of students were interested in the subjects and 43% reported the class matched their career interest. While comparing by school type, DeFeo discovered that majority of the students who reported they were interested in the subject were technical high school students (80%) versus 46% of comprehensive high school students. In regard to program alignment with career interest, 67% of technical high school students reported an alignment versus 34% of comprehensive high school students.

The influence of students’ interests was consistent in Australia as well, where 77.3% of secondary students reported that interesting subjects prompted their participation in VET (Department of Education, Science and Training of Australia, 2005, p. 19). Another study in Australia by Porter (2006) found that half of the students

selected their school VET subjects themselves and they found these “subjects interesting, were good at them, liked them and preferred practical subjects as they were more ‘hands on’ and were perceived to be more suited to their academic ability” (p. 17). In Malaysia, 83.3% of young apprentices at enterprises reported their own interest served as the main factor in their career decision-making, while in general schools only 14% secondary school students did so (Awang, Sail, Alavi, & Ismail, 2011).

Moreover, when it comes to vocational education, in addition to students’ interests and aptitudes in their prospective occupational programs, their perception of IVET often influences whether they enroll or not. Gaunt (2005) reported that both non-CTE and CTE students almost equally (81.7% and 82.4%) think that CTE center was designed for those who want to join labor market right after high school. Therefore, one might conclude that the same reason served the former not to enroll and the later to do the opposite. On the other hand, the two groups were very different (non-CTE 51% and CTE 82.4%) “in the perception that [CTE] is designed for students who plan to go to college” (p. 83). In regard to the second perception, it is obvious that non-CTE students desired more high school academic courses in order to prepare for college, while CTE students enrolled believing that it would help them to further their education at college level.

A study of Jordanian secondary students found that IVET was contradicting with their academic ambitions and thus discouraged them to enroll (Al-Saaideh, 2016). In case of Australian students, those who enrolled in IVET subjects in secondary schools perceived them as “enjoyable subjects” that “provided ‘head start’ for future, ‘less intellectually demanding’ and ‘less emotionally stressful’; while those who did not enroll

described VET as ‘a waste of time’ that ‘won’t get [them] anywhere’ ” (Dalley-Trim et al., 2008, pp. 63-66).

Gender.

Another personal factor that influences students’ career decision-making in relation to IVET is their gender bias (Dick & Rallis, 1991; Rojewski & Hill, 1998; UNESCO, 2011). Historically, in both the West and East, vocational education programs were divided into female and male occupations. Accordingly, female students predominantly enrolled in occupational programs such as childcare, social worker, nursing and medical assistant, household management, and secretarial jobs, while males enrolled in auto mechanics, plumbing, electricity, carpentry, metal work, and others that required manual labor. That legacy is still in place despite the numerous initiatives taken by policymakers, educators, and international organizations to improve gender equality in access to careers deemed as nontraditional by gender (U.S. Department of Education, 2016; National Coalition for Women and Girls in Education, 2013). For example, in the United States, the Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Brustein, 2006), specifically its Core Performance Indicator 6 addresses gender equity and participation in CTE programs considered nontraditional by gender. Worldwide, UNESCO (1999) has been active in addressing the gender issue, particularly female participation, in vocational and technical education. Its report of the Second International Congress on technical and vocational education states:

> Traditional perceptions of appropriate roles for men and women in the work place should be challenged. TVE must respond with gender-inclusive learning

> programmes, both in content and delivery, including measures to attract men into previously female-dominated training and careers. Faculty need to be gender-sensitive. (p. 66)

The role of gender in career decision-making regarding IVET programs is particularly common in non-western and developing countries (Al-Saadieh, 2016; Ndahi, 2002; Misola, 2010; Stenstrom, 1995) and it is also true in the case of Tajikistan's IVET where female enrollment has been lower than male since the system's formation during the Soviet time (Titma & Saar, 1995; Statistical Agency of Tajikistan, 2017). In addition, gender inequity is acute in some of Tajikistan's IVET lyceums due to their offerings of programs that are deemed feminine or masculine. For example, enrollment in IVET Lyceum of Sewing is dominated by female students, while enrollment in IVET Lyceum of Construction is dominated by male students. In a study not related to IVET, but conducted in Tajikistan Whitsel (2014) found that students' gender played a major role in their parents' decision to choose a school for them. It was found that boys were favored over girls and parents reported their sons were more talented than daughters. This trend seems to correlate with the lower participation of women (59.4%) in comparison with men (77.5%) in Tajikistan's labor market (UNDP, 2016)

Academic performance.

Students' poor academic performance in general secondary school has been considered one of the major factors in their decision-making to enroll in IVET schools and programs in Tajikistan (Faudel et al., 2006), as well as in other countries (Lamb, 2011; Teese, 2010). Worldwide students enrolled in vocational education are academically perceived and found to be low performers and non-college-bound. This

characteristic has been supported by several studies in North America, Europe, Australia, Africa, and Asian countries (Agodini, Uhl, & Novak, 2004; Gaunt, 2005; Gean, 2010; Levesque & Hudson, 2003; Lamb, 2011; Polat, 2014).

Gaunt (2005) found that non-CTE students' grades were higher in comparison to CTE ones "by approximately one grade classification" (p. 74). This finding is also shared by Gean (2010) who found that only 35% of CTE students reported their grades to be Bs or higher and 65% reported Bs & Cs and lower. Gaunt's (2005) and Gean's (2010) findings were consistent with an earlier study by Levesque and Hudson (2003) who discovered that the percentage of CTE students were less than non-CTE in earning 3.0 or more high school credits during the period of 1982-1998. In contrast, studies by Chandler (2009) and Stafford (2014) did not find significant differences between CTE and non-CTE students' academic standing.

Yi et al. (2015) surveyed a large sample of Chinese TVET students of computer science major and discovered that one of the two major reasons for the high dropout rate before finishing the first year was students' performance in their field of study. Dropping out before even finishing first year may indicate that these students were not well prepared academically. Academic performance in secondary schools does influence decision-making about postsecondary enrollment. For example, Wang (2013) found that 12th grade mathematics achievement and mathematics self-efficacy positively related to students' enrollment in STEM. Awang et al. (2011) found both secondary school students and apprentices agreed that TVET was accessible to students with low academic interest and low learning abilities, although both group did not agree with the perception that students in TVET schools were of low quality and problematic. This

trend was observed in Tajikistan as well. The percentage of those deemed partially literate was higher among IVET completers (30%) than secondary-VET (29%) and four-year colleges (18%) graduates (Quddusov, 2013).

Influence of Other People.

People influence each other in various ways and it certainly happens when it comes to career decision-making. Adolescents encounter difficulties in the process of career and educational decision-making due to their inability of understanding their personality traits as well as the trends in education and the world of work. Therefore, they are prone to be influenced by people whom they consider as valuable resource (Sullivan & Larson, 2010). Research internationally shows that other people do influence secondary students to enroll in IVET, and these people are parents, siblings, friends, relatives, school counselors, teachers, principals, and IVET school staff (Awang, 2011; Diemer, 2007; Esters, 2007; Gaunt, 2005; Gaunt & Palmer, 2005; Loera, 2013; Onder et al. 2014; Otto, 1989; Polat, 2014; Rossetti, 1989)

Family members.

Parents play a key role in their children's career development and decision-making (Hughey, 2005; Saiti & Mitrosili, 2005). They can facilitate the process in different ways, such as serving as sources of information about the world of education and work and helping them learn about their interests and capabilities (Brown, 2003). Young (1994) notes that parents influence is "intentional, planned, and goal-directed action" (p. 197), and their role is placed superior to that of teachers and counselors. As Otto (1989) stated: "Even if schools had the resources with which to meet young people's career guidance needs, neither teachers nor counselors can replace the

influence parents have on their sons and daughters career plans" (p. 12). Parents' influence is particularly critical in supporting disadvantaged adolescents. For example, Diemer's (2007) study of instrumental and relational parental support suggest that in the face of challenges, parental support helps children have "emotional connection to career and work" (p. 520) and understand that they can attain prestigious and high-paid employment.

In regard to parents' influence on students' IVET enrollment, it was found significant and an important factor in several studies. Gaunt's (2005) study revealed that CTE students were mostly influenced by mother 61.9%, by father 57.7%, and by siblings 31.7%. These figures were almost similar in Stafford's (2014) study, where mother was reported influential by 60%, father by 52.3%, and siblings by 39.1% of CTE students. Gean (2010) reported even higher percentage of CTE students to be influenced by mother or female guardian (76%) and father or male guardian (66%). Chandler (2009) found that mother (65%) and father (59.3%) were second and third influencing figures in students' decision-making to enroll in CTE, while siblings were less influential (52.2%) ranking at fifth place. Jackson (2002) found that successful CTE students had their parents' support to enroll in CTE.

In addition, parental influence depends on a student's own perception of IVET. Usually parents whose children are enrolled in IVET have more positive perception of IVET than parents that do not have children enrolled in IVET (Gilbertson, 1995). Studying attitudes towards VET, European Commission (2011) found that family and school remain influential factors in students' decision-making about educational pathways, even though the use of information technology is increasing. In Pakistan,

82% of VET students reported that their parents had an influence on their attitude toward VET (Ayub, 2017).

Friends and peers.

Apart from family members, friends are next in the line of most influential people. Given friends' and peers' active roles, educators have designed peer programs in counseling which is based on the evidence that students sometimes hesitate to talk to counselors and teachers (Whiston & Bouwkamp, 2005). In regard to friends' influence on students' CTE enrollment, research shows that over 70% of students reported that they were influenced by friends (Gaunt, 2005). Another study found friends to be more influential than other people, with 74.3% rating them as the top factor (Chandler, 2009). Friends were also reported as the primary influential figure by 73% of students in Gean's (2010) study. In contrast, in Stafford's (2014) study friends were reported by 47.6% of students ranking as the fifth most influencing figure. These studies show that friends play a significant role in adolescents' enrollment in IVET schools and programs.

Secondary school teachers, counselors, and principals.

Teachers and counselors in secondary schools, particularly in the upper level (10-11/12 grades), have been found to have different levels of influence on students' career decision-making (Esters, 2007; Chandler, 2009; Gaunt, 2005; Gean, 2010; Kirima & Kinyua, 2016; Loera et al., 2013; Stafford, 2014). In regard to IVET, Loera et al. (2013) found that their variable "Adults impact on college enrollment" (p.180), which included teachers and counselors, was a strong predictor of students' academic engagement and motivation in career academies.

However, when ranking their influence with parents and friends, teachers, counselors, and principals have less influence on students' decision-making to enroll in IVET. For example, Gaunt (2005) found that less than half of students were influenced by counselors (49.2%); a little over a quarter of students were influenced by teachers (29.4%), and principals had the least influence (29.4%).

Gean's (2010) study found that 52% of respondents were influenced by high school guidance counselor and 42% were influenced by teachers to enroll in CTE courses. Chandler (2009) found teachers' influence ranking at fourth and counselors at fifth. As in Gaunt's study, Chandler found principals as the least influencing figures. She even found that counselors ranked number two after mothers as individuals who discouraged students from enrolling in CTE courses. Interestingly, in Stafford's (2014) study, 54.7% of CTE students were influenced by teachers ranking them second after mothers; and counselors (51.5%) were ranked fourth after fathers. In addition, to school personnel, Gaunt (2005) and Stafford (2014) found CTE staff to have influence over students' decision-making to enroll in CTE courses with 52.4% and 34.3% responses. Teachers were found less influential in Esters' (2007) study of factors influencing students' enrollment in agriculture program.

Research shows that parents and schools' personnel play a key role as a resource for career development of deprived youth (Diemer, 2007). In Tajikistan, where 32% of the population lives below the national poverty line (World Bank, 2016), it can be expected that students rely on parents and teachers in the career decision-making process mostly because other resources are in scarce. These people are expected to play an important role in students' career decision-making because about 74% of

Tajikistan's population lives in rural areas (Statistical Agency of Tajikistan, 2018a) where alternative sources of occupational and educational information are limited (UNDP, 2014).

Socioeconomic Factors.

Several studies have explored how various socioeconomic factors, such as parents' education levels, parents' occupations, family economic situations, and students' economic expectations from their future jobs influenced their decision-making regarding IVET (Esters, 2007; Fletcher, 2012; Gaunt, 2005).

Parents' education and occupation.

Research has shown the influence of parents' education level and occupation on students' postsecondary career and educational decision-making in general (Hossler & Stage, 1992; Law & Arthur, 2003) and particularly regarding IVET (Awang et al., 2011; Yi et al., 2015; Quddusov, 2013). However, there is a shortage of research that specifically examines the influence of these factors on IVET enrollment.

Hossler and Stage (1992) studied about 2,500 U.S. ninth grade students and their parents and found a positive relationship between parents' education levels and students' aspirations, higher GPAs, and higher engagement in activities. They looked at mother's and father's education as "joint indicators of the parent's education construct" (p. 440) and therefore did not provide information whether mother's or father's education was more influential factor. This study, even though more than 20 years old, shares similar results with recent studies mentioned above.

Law and Arthur (2003) examined factors that influenced secondary school students' choices of nursing programs in Hong Kong. The results of a survey from 1,246

students discovered that the mother's occupation significantly influenced students' considerations of nursing. The father's occupation did not have significant influence. In regard to parents' education, neither the father's nor the mother's education had an influence on students' choices of a nursing career. Parental education level, even though it does not affect career adaptability development, is "related to higher sense of power and life satisfaction" (Hirschi, 2009, p. 153). Investigating predictors of career adaptability development with a Swiss sample of 330 eighth graders, Hirschi (2009) found that it was an advantage for adolescents to have more highly educated parents.

Parents' education levels affect vocational education students' dropout rate. For example, Yi et al. (2015) found that as parents' education levels increased, students' dropout rates in TVET school decreased. Specifically, Yi et al. reported that Chinese "students whose fathers finished junior high are 1.9 percentage points less likely to drop out. Moreover, students whose mothers finished junior high are 2.4 percentage points less likely to dropout" (p. 120). Parents' education levels influences students' decision-making about enrolling in vocational education (Awang et al. 2011). Awang et al. found in Malaysia that only 2% of parents with bachelor's, 2.9% with master's, and 2% with Ph.D. allowed their children to enroll in apprenticeship programs.

In Tajikistan, the European Training Organization conducted a survey among 2,000 young people aged 15-29 to describe their educational attainment and challenges faced during the school to work transition process. The study found that there was close association between parental education level and students' educational attainment (Quddusov, 2013).

Parents' occupations influence adolescents' choice of career and/or educational pathways in different ways (Leppel, Williams, & Waldauer, 2001). It is common that children follow their parents' occupations given that they have direct exposure to those occupations for a long period which enables them to develop interest and capacity. This trend is particularly observed when parents have a family business. On the other hand, if the parents' occupations are tedious and/or demanding, require longer years of study, or do not provide enough for the family, it discourages their offspring from engaging in those occupations (Williams, n.d.). The influence of parents' occupations on adolescents' choice of career is common in societies that have a collectivist cultural view (Hardin, Leong, & Osipow, 2001).

Economic factors.

In this study, economic factors involve family economic status or family income, and students' economic and financial expectations from their prospective occupations, including job opportunities. Lamb (2011) and Polat (2014) have found that it is usually students' poor economic status that makes them enroll in IVET because they either are not able to pay for college education or they want to join the labor market sooner to provide for their families. Lamb (2011) states that "for disadvantaged groups, it is [the economic outcomes] which makes TVET both a source of dependence and a potential source of liberation" (p. 70).

Given the higher concentration of disadvantaged groups in CTE, Gaunt (2005) speculated that financially disadvantaged students who cannot aim for advanced postsecondary education "are directed toward CTE…to gain marketable work-related skills" (p. 49). Exploring the difference between the economic situation of non-CTE and

CTE students, Gaunt found a significant difference and concluded that non-CTE students were “slightly better overall” (p. 80). Similar results were shared by Gean (2010) who found that almost half (48.6%) of the students who enrolled in a regional occupational center came from schools that were in the low socioeconomic category.

Agodini et al. (2004) analyzed National Education Longitudinal Study (NELS) data from a sample of 25,000 eighth grade U.S. students and found that among students with low academic achievement and low education aspirations were also students with low socioeconomic backgrounds that were more likely to participate in vocational education. They also found that “regardless of their academic achievement and educational aspirations, students from poor families are more likely to participate in vocational education” (p. 6) and speculated that one possible explanation for this paradox could be that students from low SES families understand that they need to work first if they want to pursue college-level education. Rojewski (1997) using the same NELS data as Agodini et al. (2004) specifically sought to explore “the level of participation in vocational education courses between disadvantaged and non-disadvantaged adolescents” and “the effects of disadvantaged status on vocational course-taking patterns” (p. 44). His findings, consistent with Agodini et al. (2004), revealed that disadvantaged adolescents were more than twice as likely to participate in vocational track than their peers from non-disadvantaged families.

In Polat’s (2014) qualitative study, one Turkish vocational high school administrator explains the reason for students’ enrollment as follows:

> In my opinion, these vocational schools are groups of students with no clear goal, aim in general, who come because of obligation, probably from broken

> families…ones who are forced to work in order to hold on to life again, economic reasons, family reasons. (p. 917)

The influence of economic factors was examined in another Turkish study, where income was the most important factor for students to enroll in nursing vocational high school (Onder et al., 2014). For secondary school students in Hong Kong, even though there was a weak relationship between family income and planning for nursing programs, the majority of students (72%) who aspired to a nursing career were from low-income families (Law & Arthur, 2003). Thus, finding a worthy job after program completion becomes an important factor in students' decision-making. For example, Stafford (2014) found that 60.5% of CTE students were most influenced by the possibility of getting a job after high school.

A few recent studies from the United States, however, reported that there is no significant difference between non-CTE and CTE in regard to their economic situation (Aliaga, Kotamraju, & Stone, 2014; Chandler, 2009; Cox, Hernandez-Gantes, & Fletcher, 2015; Stafford, 2014). For example, Cox et al. (2015) found that students with lower SES background enrolled in career academies less frequently than their economically advantaged peers. Chandler (2009) used lunch status to examine socioeconomic difference between CTE and non-CTE students. As a result, she found no significant difference between the two groups. Stafford (2014), who used the same questions as Gaunt (2005) to identify economic status, found no significant difference between non-CTE and CTE economic status. Aliaga et al. (2014) reported that:

> Although CTE has historically targeted low-income and special populations, our study reveals high levels of participation among higher income students and those with parents with higher levels of educational achievement. (p. 128)

The narrowing economic status gap between non-CTE and CTE students in the United States can be related to policies that are making vocational and technical education more inclusive, rigorous, and integrated, which, in turn, makes it appealing and relevant to both advantaged and disadvantaged groups of students.

Other Factors.

Researchers report there are additional factors that influence students' decision to enroll in IVET, and these factors can be categorized as school factors (including both general school and IVET school) and media (Gaunt, 2005; Gean, 2010; Lam, 1982; Stafford, 2014). For instance, Gaunt (2005) identified other factors that either encouraged or discouraged students' enrollment in CTE. These factors include a visit to vocational center or school prior to enrollment. Given the common poor perception of vocational school, having a visit is essential for secondary students because they will have a first-hand experience, which can change their biased assumptions about IVET (Gaunt, 2005).

In addition, receiving college credits for completing a vocational program, credit waivers, and spending time in the vocational centers were among other factors identified by Gaunt (2005). Part of these factors were shared by Stafford (2014) and Gean (2010) with some variations. Two factors that were new in Stafford's and Gean's studies were the opportunity of receiving an industry certificate and job shadowing. Both were reported by a significant number of students as influencing factors.

Also, Gaunt (2005) noted that vocational schools utilize recruitment and outreach measures to expand their programs and increase enrollment. Specifically, schools publish marketing materials and have a website; however, all three studies (Gaunt, 2005; Gean, 2010; Stafford, 2014) reported that marketing materials were less influential than other factors. In particular, a website was the least influencing factor reported by all three studies. As for Tajikistan, given the limited resources IVET lyceums possess, they are not able to produce enough marketing materials and promote their programs through external media (TV, radio, and newspapers) as much as IVET schools do in developed countries. Also, it should be mentioned that per the directory of the IVET lyceums obtained from the MLME (2016), none of the IVET schools in Tajikistan have a website.

Another influencing factor that is specific to Tajikistan is military service. In Tajikistan, military service for 12 (university degree holders) or 24 months is compulsory for every adult male between 18 and 27. However, the harsh condition in the military units is discouraging youth to fulfil this service and they make every effort to avoid military service (Najibullah, 2007; Tursunzoda, 2011). One of the approaches is to enroll in postsecondary education and desirably in university (Institute for War and Peace Reporting, 2016). Therefore, when students fail to enter a four-year college, as a last resort they enroll either in IVET or secondary VET (community colleges).

Career Guidance for Adolescents

Adolescents face a great amount of pressure in their career decision-making process, both internal and external, to make a right career choice. “Wise selection of the business, profession, trade, or occupation…and the development of full efficiency in the

chosen field are the matters of the deepest moment to young men [and women] and to the public." (Parsons, 1909, p. 3). Parson adds that people do not decide for one another about occupational choice, but they can help each other in reaching a wise choice. To make a wise choice, he suggested the following three factors to be considered:

> (1) a clear understanding of yourself, your aptitudes, abilities, interests, ambitions, resources, limitations, and their causes; (2) a knowledge of the requirements and conditions of success, advantages and disadvantages, compensation, opportunities, and prospects in different lines of work; (3) true reasoning on the relations of these two groups of facts. (p. 5)

The Parsons' systematic method of assessing one's internal and external conditions and to make a choice afterwards does not seem to be an easy task, especially for secondary school students (Phillips & Pazienza, 1988). Thus, comes the need for professionals and a well-established career guidance system that can help adolescents to make a well-informed career decision (OECD, 2004, 2010).

Vocational guidance was the start of guidance movement in the United States at the beginning of the past century (Miller, 1961; Pietrofesa, Bernstein, Minor, & Stanford, 1980). Worldwide countries use different terms such as vocational guidance, vocational counseling, career counseling, information, advice and guidance, and career development to refer to the various activities and programs that are included within the career guidance term (OECD, 2004, p. 18). Although these terms and concepts are interrelated, some of them have a broader meaning than the others (Gibson & Mitchel, 2008); however, this study will not focus on differentiating those terms.

Per the definition adopted in OECD Career Guidance Policy Review, “career guidance refers to services intended to assist people, of any age and at any point throughout their lives to make educational, training and occupational choices and to manage their careers” (OECD, 2004, p. 19). From the perspective of OECD countries, career guidance has two components: a) career education, which consists of learning about the world of work and developing career-related skills in classroom teaching and activities; and b) individual career advice, which refers to providing individual career advice to students based on their demands or in a proactive manner (OECD, 2010).

Internationally, educators, researchers, and policy makers emphasize the role of career guidance as an important component of education to increase the employability and competitiveness of youth and adults in the face of technological advancement and the changing nature of work (Hierbert & Borgen, 2002; Watts & Sultana, 2004). Watts (2009) argues that there is a lack of research on career guidance relationship with vocational education and training (VET). One of the reasons, he thinks, is the notion that there is no need for career guidance in VET because those enrolled have already made a career decision. However, Watts (2009) suggests that career guidance is essential for VET enrollees at both stages: prior to entering and once within VET. He further recommends that every young individual should be made aware of VET options alongside the other alternatives, and those who choose VET should be provided with high-quality career counselling and career information “to ensure that their choices are well-informed and well-thought-through” (p. 4).

Studies show that quality career guidance brings about positive results in students’ satisfaction with career decision-making and academic performance not only

at VET level but tertiary education as well. For example, Carson & Reed (2015) explored the impact of pre-college career guidance activities on student persistence and performance. They found that students who were exposed to more career guidance activities appreciated the experience and agreed that it was helpful and positively influenced their choices. However, students with little or no career guidance experience desired for such activities and said that career guidance would have helped them with college and major choices.

Students who experienced comprehensive guidance programs, reported that a) they earned better grades, b) their education was better preparing them for the future, c) schools provided them with more career and educational information, and d) their schools had a positive environment (Lapan, Gysbers, and Sun, 2011). McWhirter, Rasheed, and Crothers (2000) found that a 9-week career education class helped increasing students “career decision-making self-efficacy, vocational skills self-efficacy, and short-term gains in outcome expectations” (p. 1) and they were thinking of changing their career plans after the program. Koivisto et al. (2011) held a one-week career choice program called Towards Working Life intervention for ninth grade students in Finland to study the intervention’s impact on adolescents’ preparedness for career choice and attitude toward career planning. The result of this experimental study revealed that participation in a one-week workshop increased both components of career preparation mentioned above. Exposing students to career development courses and activities in secondary schools benefits them in gaining self-knowledge, engage in educational and occupational exploration, and develop career planning strategies (Esters, 2007).

Moreover, career guidance does not only benefit adolescents, but adults, as well. A study of a career guidance assistance program for long-term unemployed adults showed that 67% of participants were very positive about the effectiveness of the program and 91% had better expectations about career opportunities. After the program participants had “greater focus, personal insight” and developed higher self-confidence (Donohue & Patton, 2011, p. 192).

In Tajikistan, the career guidance system is underdeveloped. The system was not functioning well even during the Soviet period (Atakhanov, 2002) when education system received better financial support from the government. Watts and Sultana (2004) describe the Soviet career guidance system as follows:

> In centrally planned economies under the Communist regime, for example, there was little perceived need for career guidance services: unemployment did not officially exist, and people were largely allocated to their roles by selective processes; career was linked with individualism, and regarded as a social vice. (p. 109)

During the independence, the first government initiative in the field of career guidance was its approval of the *Concept and program of career guidance in general secondary schools*. This policy document was approved in 1998 under Decree N0399 (Atakhanov, 2002). Given the technological development, new demands of the economy, and the accompanying challenges, the government approved a new Concept of Career Guidance for students in the Republic of Tajikistan (Decree No499, Government of the Republic of Tajikistan, 2010). From the title of the new version it appears that the policy intends to offer services beyond secondary schools in contrast

to the previous one. Based on this Concept, a Career Guidance Development Program for the period of 2011-2015 was developed and approved as well (Decree N0164, Government of the Republic of Tajikistan, 2011). The program's action plan has a list of 45 activities that were supposed to be implemented by 2015.

In addition, a National Career Guidance Center has been functioning under the Ministry of Labor, Migration, and Employment (MLME). The Center and MLME together with the Ministry of Education and other relevant institutions are the major players in charge of the guidance program implementation. The National Career Guidance Center has provided services to 3,661 young people in 2015 (Nusratullo, 2016) and conducted workshops and seminars for policy makers and students during the implementation period (Qarakhonov, 2012). In total, about 29,000 of people benefited from guidance services provided by the Center (MLME's Agency for Labor and Employment, 2015). However, there is no empirical study that examines the impact of these activities on any variables of students' career development in Tajikistan. As a result, it is impossible to empirically assess the effectiveness of the Career Guidance Program and the work of the National Career Guidance Center.

Summary

The literature review revealed that the problem of this research – factors influencing students' enrollment in IVET schools in Tajikistan – has not yet been studied. There are, however, reports and studies from international and governmental agencies that address the issues of VET reform, school to work transition, skills development, job creation and employment, and labor market needs for skills and competencies. According to these sources, unemployment rate remains high, the

enrollment in IVET, compared to general secondary and higher education is low, the need for skilled entry- and mid-level workforce is increasing, and the skills mismatch is on the rise.

In addition, the number of working age population and number of unskilled youth entering internal and external markets is growing. High school graduates aspiring to enter university has been high almost all-the-time during the last decade or more. Initial VET, despite receiving an increasing attention from the government and international NGOs, still has a poor reputation among the general population and low enrollment. Thus, identifying the profile of IVET students and the factors that influence their decision-making regarding IVET in Tajikistan will be a new knowledge added to the existing literature about workforce development. According to the literature reviewed from other countries, a majority of IVET students are from families with low SES and whose parents' education levels are lower in compare to non-IVET students.

With regard to influencing factors, parents, particularly mother and friends were most influential. School teachers were less influential. Socioeconomic status was also reported as an influential factor for enrollment. School factors and media were reported as other factors in several studies. It is yet to be seen to what extent these factors apply to IVET students in Tajikistan.

Chapter III will provide information on the population of students, sample, data collection methods, and instrumentation used for the current study.

CHAPTER III

METHODS

This chapter presents the research methods and procedures that were used to conduct this study. In particular, the chapter provides a description of the research design, population and sample, methods of data collection, instrument, instrument reliability and validity, and the statistical analyses.

The problem of this study was to determine factors that influence Tajikistani students' decisions to enroll in initial vocational education and training (IVET) lyceums. The following research questions were used to guide this study:

RQ_1: What is the demographic profile of students in IVET lyceums in Tajikistan?

RQ_2: What factors influence students' decisions to choose IVET lyceums?

RQ_3: What factors influence students' decisions to enroll in IVET programs?

RQ_4: Do students enrolled in IVET lyceums after 9^{th} grade differ from those enrolled after 11^{th} grade in terms of factors that influence their decision?

Design

This study followed a quantitative research design. Quantitative research usually addresses research problems that seek to describe a trend or explain a relationship (Creswell, 2008). The study has a descriptive nature given that it describes the profile of students and the factors that influence their enrollment in IVET lyceums. A descriptive study allows researchers to evaluate the quality and the level of an existing situation (Eichelberger, 1989), and a good descriptive study can accurately describe a social problem or situation and contribute to a better understanding of the problem (DeVaus, 2001).

There were two main reasons for proposing to use a descriptive research design for this study. First, there is a dearth of empirical research on the problem of this research. Second, given that there are no career guidance services offered in Tajikistan's secondary schools but students, in one way or another, still make decisions about their postsecondary careers, the researcher was interested to explore the factors, other than school career guidance, that influence students' choices regarding IVET lyceums and vocational programs. To this end, a survey method in the form of structured questionnaire was used to collect information from IVET students about their demographic profile, as well as factors that influenced their decisions to choose IVET lyceums and enroll in programs they were studying.

Survey research is extensively used in social science and particularly in educational studies (Creswell, 2008; Leedy & Ormrod, 2014; McMillan, 2012). Leedy and Ormrod (2014) state that survey research "involves acquiring information about one or more groups of people – perhaps about their characteristics, opinions, attitudes, or previous experiences – by asking them questions and tabulating their answers" (p. 195). Moreover, Miller (1961) states that "the most obvious method of studying choice factors is to ask individuals what they consider were important influences on their choices" (p. 248). In addition, survey research requires less time and fewer resources and allows for a quick turnaround in data collection (Babbie, 1990).

Population and Sample

The targeted population for this study was students enrolled in IVET lyceums' in Tajikistan during 2017-2018 school year. The students' ages ranged from 16 to 29 years old. In total, as of the 2016/17 academic year, there were 23,000 students

enrolled in 61 IVET lyceums (MLME, 2016). Given the size of the population, a sample of not less than 377 respondents is needed for a 95% confidence level based on formulas provided by Krejcie and Morgan (1970).

As mentioned previously, students enroll in IVET lyceums after completing 9th or 11th grade in the general secondary schools. Those who enroll after completing 9th grade at general school study for two years, which allows them to receive a high school diploma along with an occupational certificate. Those who enroll after 11th grade at general school study for a vocational program for one year. For the general IVET students' population, there were no data available on the exact number of students who enrolled after 9th grade and after 11th grade. However, according to the Head of IVET and Adult Training Department at MLME (2017), the majority of the students enroll in lyceums after completing 9th grade. The reason, he speculated, is that they are motivated because they gain an occupation as well as an *attestat* of completion of upper secondary school (high school diploma; R, Gulshanov personal communication, April 4, 2017).

Methods of Data Collection

The researcher sent a signed letter (Appendix A) to the Ministry of Labor, Migration, and Employment (MLME) of the Republic of Tajikistan, which oversees IVET and adult training, asking for permission to conduct the study. An updated list of IVET lyceums and the number of students per region were also obtained from MLME.

Data collection started after the researcher received permission from the MLME (Appendix B) and approval from Old Dominion University's Institutional Review Board (IRB; Appendix C). To ensure a required minimum sample size of 377 respondents, the

researcher planned to survey over 500 students. The selection of students and IVET lyceums was carried out in two steps. First, the number of students selected from each region were proportionate to the total number of students in each region. For example, if region A accounted for 30% of the total IVET students in the country, 30% of the sample needed to be represented from that region. This allowed for equal representation of IVET schools and students in the geographically stratified sample.

In the second step, lyceums were selected based on the percentage of lyceums in a region. In other words, a region that has a higher percentage of lyceums had a higher number of lyceums represented in the sample. The final number of students and IVET lyceums selected in each region are displayed in Table 2.

Table 2

Number of students and IVET lyceums selected for the sample

Regions	No of lyceums	No of students selected from each region	No of lyceums selected from each region
DRS	10	85	3
Dushanbe	11	115	3
MBAP	1	17	1
Khatlon	17	148	5
Sughd	22	165	6
Total	61	541	18

Further, the list of IVET lyceums was entered into separate MS Excel sheets by region. From each region, lyceums were selected using simple random sampling which is “the most popular and rigorous form of probability sampling” and allows any individual to have an equal chance of being selected from the population (Creswell, 2008, p. 153). The stratified random sampling of lyceums was performed in MS Excel using the

RANDBETWEEN function for generating random numbers. RANDBETWEEN function allows to select random numbers between the bottom and top number of a list. For example, if a region list has 22 lyceums, the Excel function would be =RANDBETWEEN(1, 22); and depending on the needed number of lyceums to be selected from that region, the function/formula will be repeated through that amount of MS Excel cells. The random selection supports a representative sample of lyceums.

The researcher provided MLME with a final list of the randomly selected lyceums. The Ministry of Labor, Migration, and Employment sent a formal letter to the lyceums' directors and asked them to cooperate with the researcher and facilitate administration of the survey. The researcher was provided with the copy of that letter (Appendix D). The researcher then contacted directors of the selected lyceums to follow up on the MLME's letter and asked them to prepare a randomly selected sample of student for the survey. The researcher recommended the lyceums' directors to select students using the RANDBETWEEN function in MS Excel, which picks random numbers between the bottom and top number of a list. For example, if a school list has 150 students, the Excel function would be =RANDBETWEEN(1,150); and depending on the needed number of students to be selected from that school the function/formula to be repeated through the same amount of MS Excel cells.

In addition, the directors and/or sometimes deputies were provided with students' letters (Appendix E) and parents' consent forms (Appendix F). The parents' consent forms were delivered through the students. After consent letters were signed by parents and collected back by the lyceums' administrators, a date was set to physically distribute the survey. To ensure a quality and systematic administration of the

questionnaires, the researcher visited 17 out of 18 selected IVET lyceum himself and administered the survey. Due to being busy conducting survey in another region, the researcher could not travel to the only lyceum in the Mountainous Badakhshan Autonomous Province (MBAP). Instead, the researcher asked a credible person (a university professor with research experience) to administer the survey with 17 students in MBAP. The designated person was provided with explicit details on how to administer the survey.

Research Instrument

The instrument used in this study was adapted from the one developed by Gaunt (2005) for his doctoral research. The title of the original instrument (Appendix G) used by Gaunt was “High School Seniors’ Perceptions of Career and Technical Education and Factors Influencing Their Decision to Attend an Area Career Technical Center”. The researcher contacted the author and was granted permission (Appendix H) to use the instrument by adapting it to the context of this research. The final instrument was comprised of four parts containing 21 questions (Appendix I).

Part 1 consists of ten questions and solicited demographic information such as student gender, age, parents’ education, self-reported grades for the final examinations at general secondary schools, permanent residency (rural or urban), residency while in lyceum, and students’ economic status. Questions related to parents’ education, permanent residency, residency while in lyceum, and family member migration status were not part of the original survey and were added by the researcher to identify students’ social profiles. The last question of Part I, “Which of the following members of your family are in labor migration?” was included in the survey because labor migration

is an essential aspect of lifestyle in Tajikistan today affecting socio-economic situation of millions of people (Bennett, Clifford & Falkingham, 2013; ETF, 2010; ILO, 2010; Noziri, 2018).

Part 2 has three questions and gathered information about students' enrollment status at lyceums. Question 1 asked students after completion of which grade did they enroll in IVET lyceum. Question 2 asked which year they are currently studying. Question 3 asked students what the duration of their program was, and Question 4 asked students in which program of study they were enrolled. Question 4 included the list of programs where students marked the one in which they were enrolled. The list of programs was categorized into seven clusters. They are Automobile & Transportation Technology, Business, Construction Technology, Information and Communication Technology, Manufacturing/Industrial Technology, Family and Consumer Science, and Agriculture Technology.

Part 3 included 5-point Likert-type scale questions that gathered information about factors, including people and other factors that may have influenced students' decisions to enroll in IVET lyceums and choosing a specific program. For each factor, the student responded on a 5-point Likert-type scale, which includes: 1) Not at all, 2) A little, 3) Unsure, 4) Not that much, and 5) A lot. Note that "Not that much," in Tajik, is not directly translated into English and would appropriately belong between "Unsure" and "A lot."

There are 20 influencing factors identified for the choice of IVET lyceums and 16 influencing factors identified for the choice of vocational programs. Part 3 of the original instrument had 17 factors some of which were not suitable for the context of Tajikistan.

For example, the original instrument had “High school counselor” which Tajikistan’s schools do not have, and it was replaced with “Class supervisor”. The factor “Field trip to CTC” was replaced with “Open-door event in IVET lyceum”. Other factors in the original instrument such as “High school career plan,” “Time spent travelling to the CTC,” and “Receiving college credit for completing CTC program,” “Receiving a waiver for high school credit,” CTC program,” and “CTC website” do not apply to Tajikistan’s IVET system, and therefore were not included in the adapted instrument. Instead, based on the literature the researcher added the following factors: “Free food,” “Free dormitory,” “IVET lyceum is close to home,” “IVET lyceum provides hands-on experience”, and “Studying in IVET is easier”.

Part 4 has five questions that asked students for additional information including their plan after lyceum’s completion, their level of confidence about employment in their field of study, their awareness about the career guidance services, and if they ever thought of changing their program or leaving the lyceum before graduation.

Pilot Testing

It is critical that an instrument be reliable and valid because these characteristics have an impact on how meaningful conclusions a researcher can make from the data obtained using this instrument. Reliability is defined as a measure of the extent to which an instrument yields consistent data, and validity means the researcher is using the right instrument that measures what it is supposed to measure (Leedy & Ormrod, 2012).

The survey instrument was analyzed by Gaunt (2005) for validity and reliability by testing it twice prior to his research. During the pilot study Gaunt administered the instrument to 16 high school students in a local school without any “verbal explanation

as to the survey's purpose" except informing them that their assistance was needed to determine their perceptions. When asked about their impressions, even though students expressed no difficulty in filling the survey, two students made mistakes. Therefore, he developed a script for the survey facilitator and administered another pilot study with 14 students. The script emphasized the parts that students made mistake in the first pilot study. None of the students reported difficulty and no errors were found as a result of the second pilot study. Other than testing the instrument twice, Gaunt does not mention about conducting statistical analysis for reliability and validity purposes.

The adapted instrument for this study was translated into Tajik by the researcher. The translated version was shared with two external specialists in Tajik language and with IVET specialists in Tajikistan to check whether the wording and terminology are easy to understand. The language specialist suggested several minor changes in the language and wording of the questions to make them more understandable for the students. One suggestion for simplifying was for Question 9 in Part I. Another recommendation from the linguist was regarding the scale in Part 3. In the original instrument the scale was in the following order: Not at all, Not that much, A little, A lot. However, when translated into Tajik, the linguists suggested that "A little" is less than "Not that much" and therefore should precede "A lot". The suggestions from linguists were accepted.

In addition, the IVET staff suggested to add "23+" in the "Age" question suggesting that there are students whose age was more than 22 years old. In Part II, they suggested, to remove the answers "Year 3" and "3-year" from Questions 2 and 3 that asked, "In which year are you currently studying?" or "What is the duration of your

study?". This suggestion was made because for 9th grade enrollee studying at IVET lyceums was shortened from three years to two years. In general, there were no significant changes made to the survey questionnaire.

In addition, a pilot study was conducted. The pilot study was carried out with 20 randomly selected students from an IVET lyceum in Dushanbe city that was not part of the sample. It was performed to help the researcher identify questions that were difficult to understand, understand the time that it takes students to fill the survey, and ease of completion. The pilot study was administered by a designated person who was a former colleague and trusted by the researcher. Students were provided with the student cover (Appendix E) letter to complete the survey. Moreover, a script (Appendix J) adapted from the one originally developed by Gaunt (2005) was used by the facilitator during the survey administration. The adapted script emphasized on the important part of the survey – Part 3 "Influencing factors" and explained the scale to the students.

The survey administrator was asked to check the time it would take students to complete the survey and make note of questions students might ask regarding any difficulties they had understanding the questions. It took students between 18 and 22 minutes to complete the survey. Also, the instrument did not have a separate answer sheet. Students marked their answers directly on the survey. This approach helped avoid confusion and inaccuracy for the study (Haney, 2002).

To perform validity and reliability test, statistical procedure such as coefficient alpha or Cronbach's alpha was utilized (Creswell, 2008) through SPSS. Cronbach's alpha is frequently used to measure internal reliability and consistency and a coefficient alpha of .70 is commonly cited as acceptable (DeVellis, 2003, Field, 2013). Cronbach's

alpha was calculated in SPSS for the Likert-type scale items in Part 3 for Question 1 (20 items) and Question 2 (16 items). The result of calculation revealed a Cronbach's alpha = .72 for the scale items in Question 1 and Cronbach's alpha = .79 for the scale items in Question 2 indicating a good scale reliability.

One of the ethical issues in research is protecting participants' rights and privacy (Leedy & Ormrod, 2012). In this regard, the current study did not collect participants' identifiable information. Therefore, there was no threat of personal information to be compromised. The researcher kept the data in a password-protected file. Only the researcher has access to the survey responses.

Statistical Analysis

The collected data were first entered in MS Excel and later imported to IBM Statistical Package for the Social Sciences (SPSS®) version 25 software for analysis. The results are reported in the order of research questions.

Research Question 1, What is the demographic profile of IVET students in Tajikistan, was answered by data collected through questions 1-10 in Part I and questions 1-4 in Part 2 of the survey. Collected data were analyzed using descriptive statistics including percentages and frequencies to describe the students' profile enrolled in IVET lyceums in terms of their gender, age, place of residence (rural or urban), parents' education, examination grade received at the completion of 9^{th} or 11^{th} grade in general school, place of living during study at IVET lyceum (dormitory or not), economic status, grade completed in general school (9^{th} or 11^{th}), duration of study in IVET lyceum, and programs enrolled. The results of these descriptive statistics are presented in tables and graphs for each category.

Also, as part of the IVET students' profile description, paired *t*-tests were conducted to compare the differences between the means of grades students received for general secondary school exit examinations, and a chi-square test of independence was performed to examine the relationship between gender and students' enrollment in IVET programs. The chi-square test identifies whether female and male students have distinctive preferences for vocational programs. The detailed results are provided in Chapter 4.

Research Question 2, What factors influence students' decisions to choose IVET lyceums?, was answered by data collected through question 1 of Part III. Question 1 – "To what extent did the following people, events, or factors influenced your decision to enroll in IVET lyceum?" asks students to identify the extent to which 20 factors influenced their choice of IVET lyceums. There are 20 factors, including people and events that students were answered on the 5-point Likert-type scale of 1) *Not at all*, 2) *A little*, 3) *Unsure*, 4) *Not that much*, 5) *A lot*. Descriptive statistics such as frequencies and percentages were calculated for these data. Also, chi-square tests were performed to examine relationship between gender and parental influence on students' decisions to choose IVET lyceums.

Research Question 3, What factors influenced students to enroll in IVET programs?, was answered by data collected through question 2 of the Part III. Question 2 – asked students "To what extent did the following people, events, or factors influenced your decision to enroll in IVET programs you currently study?". This question focused on identifying to what extent 16 factors (people and events) influenced students in their decision to choose vocational programs they were enrolled in at the time of

survey. The student responded on a 5-point Likert-type scale of 1) *Not at all*, 2) *A little*, 3) *Unsure*, 4) *Not that much*, 5) *A lot*. Descriptive statistics such as frequencies and percentages were calculated for these data. Also, chi-square tests were performed to examine relationship between gender and parental influence on students' decisions to enroll in IVET programs.

In addition, factor analysis was used to determine factor loadings and the amount of the variance they explained. Exploratory factor analysis helps determine the amount and nature of underlying constructs (Millsap & Maydeu-Olivares, 2009) and is used for exploration and to "inform researcher about patterns within data sets" (Field, 2013, p. 705). In this study, for the purpose of extracting latent constructs, principle axis factoring (PAF) was used. To conduct principle axis factoring, the Kaiser-Meyer-Olkin (KMO) and Barlett's test of sphericity test were performed to check whether the data are appropriate for factor analysis in terms of sample size and correlation. A KMO value varies between 0 and 1. The value closer to 1 is considered acceptable meaning that factor analysis results in reliable factors and the Barlett's test of sphericity with significant level of $p > .05$ is considered acceptable. Kaiser's eigenvalue of >1 was used for extraction and retention of latent constructs, which was also verified by checking the scree plots (Field, 2013). Further, orthogonal varimax rotation was used to check whether variables relate to more than one latent construct. Without rotation, interpretation of the extracted factors is difficult (Osborne, 2015). The produced latent constructs were labeled based on the common themes the variable represent (Field, 2013).

Research Question 4, Do students enrolled in IVET lyceums after 9th grade differ from those enrolled after 11th grade in terms of factors that influenced their decision to enroll in IVET lyceum?, was answered by data collected from question 1 of the Part II and question 1 of the Part III. The focus of the question is to determine if there is a significant difference between students who enrolled after 9th grade and those enrolled after 11th grade in terms of factors that influenced their decision to enroll in IVET lyceum and programs. Descriptive statistics were calculated for each group and presented in percentages for each factor.

Further, a Mann-Whitney *U* test was administered to compare the differences between 9th grade and 11th grade students in terms of the factors that influenced their decision to choose IVET lyceums and IVET programs. In other words, the goal is to determine, for example, whether a factor such as mother had a different influence on students who enrolled after 9th grade than those enrolled after 11th grade. Mann-Whitney U test was chosen because these data were ordinal and using a parametric tests is not an appropriate approach to analyze them (Field, 2013; Nardi, 2003). Moreover, these data were collected through Likert-type measurement and using a parametric test would “oversimplify the analysis” and can “lead to inferential errors” if the discrete nature of the response is ignored (Clason & Dormody, 1994, p. 31). Also, even though the response categories in Likert-type scale have a rank order, the intervals between the values are not equal. In other words, in the context of this study, where the scale is 1 – Not at all, 2 – A little, 3 – Unsure, 4 – Not that much, and 5 – A lot, it is inappropriate and impossible to calculate, for example, the average of 1 – Not at all, 2 – A little. Therefore, Likert-type scale data are ordinal data (Boone & Boone, 2012;

Clason & Dormody, 1994, Jamieson, 2004; Miller & Salkind, 2002; Sullivan & Artino, 2013).

In addition, a chi-square test of independence was performed to determine whether the two grade levels (9^{th} grade and 11^{th} grade) are related in terms of the influencing factors. A chi-square was used because both independent and dependent variables are categorical variables (Field, 2013). The grade level was treated as an independent variable and the influencing factors were treated as dependent variables.

Summary

Chapter III highlighted the methods and procedures that were used to collect and analyze data for this study. The population and sample's characteristics were described in terms of their demographic and socio-economic profile. In addition, this chapter provided a description of the instrument to be used in this study. How the researcher will ensure the instrument's reliability and validity was described, as well. Table 3 displays research questions and data analysis to be used for each of them. Chapter IV will present the findings obtained utilizing the abovementioned methodology.

Table 3

Research Questions and Data Analysis

Research question	Description	Data Analysis
RQ1: Demographic profile	Describing demographic profile of IVET students	Descriptive statistics Paired t-test for differences; Chi-square test for relations.
RQ2: Factors influencing IVET lyceum choice	Describes factors that influenced students' decisions to choose IVET lyceum	Descriptive statistics Factor analysis. Chi-square test for relation between gender and parental influence on lyceums choice
RQ3: Factors influencing IVET programs enrollment	Describes factors that influenced students' decisions to choose a specific IVET program	Descriptive statistics Factor analysis. Chi-square test for relation between gender and parental influence on program choice
RQ4: Factors comparison	Comparing differences between (9^{th} and 11^{th} graders) in terms of influencing factors	Descriptive statistics; Mann-Whitney test for differences between the groups. Chi-square test to check for significant association between grade level and the influencing factors

Note: Adapted from Gaunt (2005)

CHAPTER IV

FINDINGS

The problem of this study was to determine factors that influenced Tajik students' decisions to enroll in initial vocational education and training (IVET) lyceums in Tajikistan. Data were collected and analyzed. This chapter presents the findings of that analysis. The following research questions were used to guide this study:

RQ_1: What is the demographic profile of students in IVET lyceums in Tajikistan?

RQ_2: What factors influence students' decisions to choose IVET lyceums?

RQ_3: What factors influence students' decisions to enroll in IVET programs?

RQ_4: Do students enrolled in IVET lyceums after 9^{th} grade differ from those enrolled after 11^{th} grade in terms of factors that influence their decision to enroll in IVET lyceums?

Response Rate

The population of this study was 23,000 students enrolled in 61 IVET lyceums in Tajikistan. A sample size consisting of 377 students was needed for that population based on Krejcie and Morgan's (1970) table for determining sample size at a 95% confidence level. For this study, to account for non-participants, a larger sample size of 541 student was randomly selected to participate. Because the survey was endorsed by MLME and was distributed through the lyceums, a 100% response rate was attained. After the surveys were collected, each was assigned an ID number starting with "001". Out of the 541 collected surveys, 16 surveys were not deemed valid and therefore were removed from the analysis. Out of the 16, six surveys were destroyed immediately after collection because they were inappropriately filled in or were marked too much that

made it impossible to differentiate the intended response. Ten more surveys were removed later due to having a considerable missing data. After the data cleaning, there were 525 surveys deemed valid for further analysis (n = 525). This sample size was acceptable, given that the current population (N = 23,000) requires equal to or greater than 377 respondents (Krejcie & Morgan, 1970).

Data Screening and Coding

As the survey was paper-based, the collected surveys were entered into MS Excel first. To do this, the researcher printed one survey questionnaire and marked codes for each response. An Excel sheet was created with the first column titled “Case ID” and questions were entered in the rest of the columns. Responses were entered for each student using the assigned codes. Table 4 displays how responses were coded for further analysis. This initial coding sped up the researcher work to enter the paper-based surveys into MS Excel.

Table 4

Coding of the survey responses

Variables	Coding
Gender	
Female	1
Male	2
Region	
Dushanbe city	1
DRS	2
MBAP	3
Khatlon Province	4
Sughd Province	5

Table 4 (continued)

Age	
15-16	1
17-18	2
19-20	3
21-22	4
23+	5
Permanent Residency	
Rural	1
Urban	2
Residency while in lyceum	
My home	1
Lyceum's dormitory	2
Rented home	3
Relative's home	4
Parents' highest education attained	
General lower secondary education (9th grade)	1
General upper secondary education (11th grade)	2
Initial vocational education and training (IVET)	3
Secondary vocational education and training (SVET)	4
Higher education (University)	5
Family economic situation	
Your family has a hard time getting enough money for food, clothing, and basic living costs.	1
Your family has just enough money for food, clothing, and basic living costs.	2
Your family has a few problems buying what your family needs.	3
Your family has no problems buying what your family needs and is able to buy special things	4
Family members in labor migration	
Father	1
Mother	2
Brother	3
Sister	4
None	0

Table 4 (continued)

Programs of study	
Automobile & Transportation	1
Business	2
Construction	3
Information Technology (IT)	4
Manufacturing & Industrial	5
Family & Consumer Science (Service Sector)	6
Agriculture	7
After which grade enrolled in IVET lyceum?	
9th grade	1
11th grade	2
IVET program duration	
1-year	1
2-year	2

Demographic Profile of IVET Students in Tajikistan

Research Question 1: What is the demographic profile of students in IVET lyceums in Tajikistan?

Given the dearth of research study and information on the profile of the IVET students, the first part of the survey for this study collected information about students' demographic profiles. Part I of the survey contained ten questions about students' demographic information. Students were asked about their gender, age, permanent residency (rural or urban), grades of their general school exit examinations, mothers' and fathers' highest education level, place of living while attending lyceum, family economic situation, and whether any member of their family were in labor migration. There was no question about the regions students were from. However, the researcher included a variable on region as the collected surveys were organized by region before they were entered into database.

Analysis for frequencies and descriptions of demographics reported that 29.7% (156) of the sample students were female and 70.3% (369) were male. These data to some extent are reflective of the general population of the IVET lyceums, where, according to MLME (2016) data, females accounted for 21%.

Question 2 asked students about their age group. There were five age groups: *15-16*, *17-18*, *19-20*, *21-22*, and *23+*. Frequencies and percentages were calculated for students in each age group. The results of the descriptive statistics revealed that 55% of the students were represented in the *17-18* age group and about 23% reported their age in the *15-16* age group.

Question 3 identified whether they were from rural or urban. The results showed that 61% (320) reported their permanent residency in rural and 39% (204) reported in urban.

As for the regional representation, the analysis showed that 20% (103) of the survey respondents were from Dushanbe – the capital city, 16% (84) were from Districts of Republican Subordination (DRS), 3% (17) were from MBAP, 28% from Khatlon region, and 34% from Sughd region, which was representative of the total IVET student population in each region. The demographic information is presented in Table 5.

Table 5

Demographic Information of the Sample

Questions	*n*	%
Gender		
Female	156	29.7
Male	369	70.3

Table 5 (continued)

Region		
Dushanbe city	103	20.0
DRS	84	16.0
MBAP	17	3.2
Khatlon Province	145	27.6
Sughd Province	176	33.5
Age		
15-16	118	22.5
17-18	288	54.9
19-20	75	14.3
21-22	25	4.8
23+	19	3.6
Permanent Residency (*n* = 524)		
Rural	320	61.0
Urban	204	38.9
Residency while in lyceum		
My home	373	71.0
Lyceum's dormitory	70	13.3
Rented home	40	7.6
Relative's home	42	8.0

Questions 4 and 5 explored students' profiles in terms of their academic standing. These questions asked students about their general secondary school final examination grades for six subjects, including Algebra, English, Geography, History of Tajiks, Russian Language, and Tajik Language. It should be noted that students who graduate general secondary school with 9th grade diplomas have a Geography exam which 11th graders do not have. Instead, 11th grade completion students have an exam from the English language. Students were asked, "Which grades did you receive for the following examinations at the completion of 9th /11th grade?" Students self-reported their exams' grades across the five-point grading system that Tajikistan's secondary

education still uses with “1” – very poor, “2”-Unsatisfactory, “3” – Satisfactory, “4” – Good, and “5” – Excellent. The survey question, however, did not have grade “1” because it is rarely given and it is a failing grade that would not allow students to graduate and progress to the next grade or post-secondary schooling. According to the Regulation for General Secondary Education (Government of Tajikistan, 2016), for exit state examination students should receive grade “3” or higher in order to progress.

The results showed that the majority of students did better on languages and humanities than on Algebra. The number of students who received grade “3” on Algebra (200) was higher than Tajik Language (91), Russian Language (164), and Tajiks History (112). At the same time, the number of students who received grade “5” for Algebra (29) was less than Tajik Language (104), Russian Language (68), and Tajik History (91). The variations for receiving grade “4” across four subjects was less: Algebra (296), Tajik Language (330), Russian Language (282), and Tajik History (313). Table 6 shows the frequencies and percentages of student academic grades. Figure 2 displays a comparison of grades received by students in secondary school examinations.

Table 6

Frequency and Percentages of Students Academic Grades

	3 "Satisfactory"		4 "Good"		5 "Excellent"	
	n	%	*n*	%	*n*	%
Tajik Language	91	17.3	330	62.9	104	19.8
Algebra	200	38.1	296	56.4	29	5.5
Tajiks’ History	112	21.3	313	59.6	91	17.3
Russian Language	164	31.2	282	53.7	68	13
Geography *	61	11.6	214	40.8	69	13.1
English Language**	54	10.3	87	16.6	16	3

Note: * Geography grades are only for students enrolled in IVET after 9th grade (n = 344; missing =12)
** English grades are only for students enrolled in IVET after 11th grade (n = 157; missing = 11)

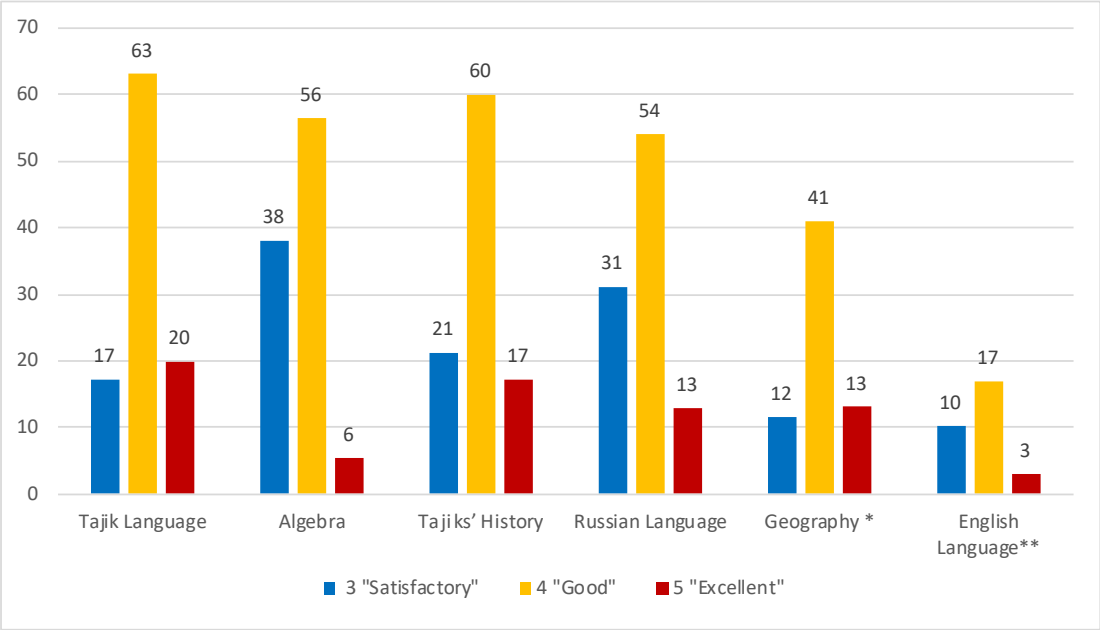

Figure 2. Comparison of students' grades received for general secondary school exit examination (in %).

Further, a paired *t*-test was conducted to compare the difference of the mean grades for Algebra with Tajik Language, History, and Russian Language. The results of the paired t-tests showed that there was a significant difference in the mean grades students received for Algebra (M = 3.67, SD = .575) and Tajik Language (M = 4.02, SD = .610), $t(524) = 13.57$, p <.001; and History (M = 3.96, SD = .627), $t(515) = 10.53$, p <.001; and Russian Language (M = 3.81, SD = .650), $t(514) = 4.62$, p <.001.

Question 6 in Part I identified the students' mother's highest education level attained. Students were asked "What is your mothers' highest education level?" Responses were on a multiple-choice question with nominal answers that included: 1) Basic general secondary education (9th grade), 2) Complete general secondary education (11th grade), 3) IVET, 4) Secondary vocational education and training (SVET or community colleges), 5) Higher education (university).

Ninety-eight percent (514) of students responded to this question and 11 did not respond. The results showed that 28.4% (149) of the students reported that their mother's highest educational attainment was 9th grade, for 48% (252) for 11th grade, 4.8% (25) for IVET, 7.6% (40) for SVET, and 9.1% (48) higher education or university degree.

Question 7 asked students about father's highest education level. The results showed 8.6% (45) of respondents reported their fathers' highest educational attainment was 9th grade, 43.8% (230) for 11th grade, 13.3% (70) for IVET, 11.4% (60) for SVET, and 21.1% (111) for higher education (university). Nine students did not respond to this question. Table 7 shows the frequencies and percentages of mother's and father's highest education level. The results of the descriptive statistics show that most of the mothers have lower level of education, while fathers have higher level of education. Figures 3 and 4 display comparison of highest educational level attained by mother and father.

Table 7

Parents Highest Education Level Attained

	Mother (*n* = 514)		Father (*n* = 516)	
Education Levels	*n*	%	*n*	%
9th Grade	149	28.4	45	8.6
11th Grade	252	48.0	230	43.8
IVET	25	4.8	70	13.3
SVET	40	7.6	60	11.4
Higher Education	48	9.1	111	21.1

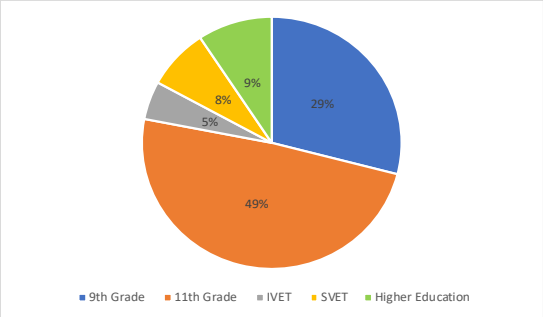

Figure 3. Mother's highest education level attained.

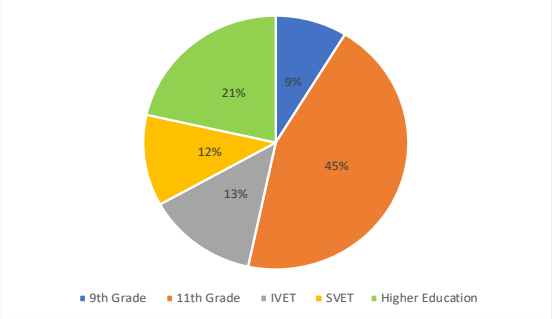

Figure 4. Father's highest education level attained.

Question 8 identified students' residency while studying in lyceums. Students were asked "Where do live during your study in lyceum?" The students responded by choosing one of the four nominal choices: 1) my house, 2) lyceum's dormitory, 3) rented house, and 4) relative's house. The results of the descriptive analysis showed that 71% (373) were living in their own house, 13.3% (70) were living in lyceums' dormitory, 7.6% (40) were living in rented housing, and 8.0% (42) were living with their relatives while studying in the lyceums.

Question 9 identified students' family economic situation. Students were asked "Which of the following statements best describes your family situation?" The responses were the following: 1) Your family has a hard time getting enough money for food, clothing, and basic living costs; 2) Your family has just enough money for food, clothing, and basic living costs; 3) Your family has a few problems buying what your family needs; and 4) Your family has no problems buying what your family needs and is able to buy special things. The response rate for this question was 99.2% (n = 521). Frequencies and percentages were computed for for each economic situation category. The result of descriptive analysis showed that 39.6% (208) of the respondents fell into *Family Has No Financial Problems* category, 27.0% (142) into *Family Has Just Enough*

to Get By, 17.9% (94) into *Family Has Hard Time,* and 14.7% (77) fell into *Family Has Few Problems* category. The frequencies and percentages of the students' family economic situation are show in Table 8.

Table 8

*Frequencies and Percentages of Students Economic Situation (*N = *521)*

Economic Situation	*n*	%
Family has hard time	94	18
Family has just enough to get by	142	27
Family has a few problems	77	15
Family has no financial problems	208	40

The last question in Part I – Question 10 also was about students' socio-economic situation. It asked "Which of the following members of your family are in labor migration?" Students responded on a 5-nominal scale that included 1) father, 2) mother, 3) brother, 4) sister, and 5) No one. Students could check more than one answer if more than one member of their family were in labor migration. The response rate for this question was 99.8% (*n* = 524). The results of descriptive statistics showed 43% (224) of the students had no one from their family in labor migration, while 57% (300) stated they had someone in their family that were in labor migration. Of the total 300, the majority had only fathers 23% (119) and only brothers 19.4% (102) in labor migration. For 10% (54) of the students there were two or more family members that were in labor migration. Table 9 shows frequencies and percentage of students' family members in labor migration.

Table 9

*Frequency and Percentage of Family Members in Labor Migration (*n = *524)*

Family members	*n*	%
Father	119	23
Mother	17	3
Brother	102	19
Sister	8	2
Father, Mother, Brother, Sister,	1	0.2
Father, Mother, Brother	4	0.8
Father and Mother	16	3.0
Father, Brother, Sister	1	0.2
Father and Brother	20	4
Father and Sister	1	0.2
Mother and Brother	6	1.1
Brother and Sister	5	1.0
No one	224	43

Part II of the survey identified information about students' academic profiles while studying in IVET lyceums. This part had four questions. Question 1 asked students "After which grade of general school they enrolled in IVET lyceum?". The two nominal responses from which students had to choose were: 1) "After 9th grade" and 2) "After 11th grade". Descriptive analysis showed that 67.8% (356) of the students enrolled in IVET lyceums after completing 9th grade and 32.2% (169) of the students enrolled after completing 11th grade in general secondary school. This statistic is reflective of the situation with the general IVET student population majority of whom have completed 9th grade. Table 10 displays the frequencies and percentages of students enrolled in IVET lyceums after 9th grade and after 11th grade of general secondary schools.

Table 10

Frequencies and Percentages of Students Enrolled in IVET After 9th and 11th grades

Grades	*n*	%
After 9th grade	356	68.0
After 11th grade	169	32.0
Total	525	100.0

Question 2 asked the students “What year you are currently studying in?”. Students responded along two ordinal answers, which included “1st Year” and “2nd Year”. The descriptive analysis showed that 76.6% (402) were in their first year of study and 23.4% (123) were in their second year of study.

Question 3 asked the students “How long is your program’s duration?”. The responses were three nominal answers that included: “2-year,” “1-year,” and “Short-term courses.” The results of descriptive statistics showed that 356 students were in two-year programs and 169 students in one-year programs. There were no students enrolled in short-term courses.

Question 4 of Part II identified students’ programs of study. It asked “Which program you are currently enrolled in?” The responses were selected from one of seven programs of study: 1) Automobile and Transportation, 2) Business, 3) Construction, 4) Information Technology (IT), 5) Manufacturing and Industry, 6) Family & Consumer Science/Service Sector, and 7) Agriculture. The response rate for this question was 99.6% (*n* = 523). The results of the descriptive analysis showed that the top three programs where the majority of students enrolled were Automobile & Transportation 37.5% (197), Family & Consumer Sciences or Service Sector 20.6% (108), and

Information Technology (IT) 17.5% (92). Table 11 shows the frequencies and percentages of the students' enrollments by programs of study.

Table 11

*Frequencies and Percentages of Students Enrollment by IVET Programs of Study (*n = *523)*

Programs of Study	*n*	%
Automobile & Transportation	197	37.7
Family & Consumer Sciences (Service Sector)	108	20.7
Information Technology (IT)	92	17.6
Business	64	12.2
Manufacturing/Industry	40	7.6
Construction	17	3.2
Agriculture	5	1.0

Program enrollment by gender

To understand how female and male students participate in IVET programs, descriptive statistics were calculated. The results of the descriptive statistics showed that out of 156 female students, the majority 55% were enrolled in Family & Consumer Science (Service), 21% in Information Technology, 19% in Business, 5.1% in Automobile & Transportation, and only one student in Manufacturing/Industry and one student in Agriculture. There were no female students enrolled in the Construction program. As for male students, 52% were enrolled in Automobile and Transportation, 16.3% in Information Technology, 10.6% in Manufacturing/Industry, 10% in Business, 6.3% in Family & Consumer Science (Service), 4.6% in Construction, and 1.1% in Agriculture programs. Table 12 displays the percentages of male and female students' enrollment in IVET programs. A comparison of female and male student enrollment in IVET programs is displayed in Figure 5.

Table 12

Frequencies and Percentages of Students Enrollment in IVET Programs by Gender

IVET Programs	Gender	
	Female	Male
Family & Consumer Science (Service Sector)	54.5%	6.3%
Information Technology (IT)	20.5%	16.3%
Business	18.6%	9.5%
Automobile & Transportation	5.1%	51.5%
Construction	0.0%	4.6%
Manufacturing/Industry	0.6%	10.6%
Agriculture	0.6%	1.1%

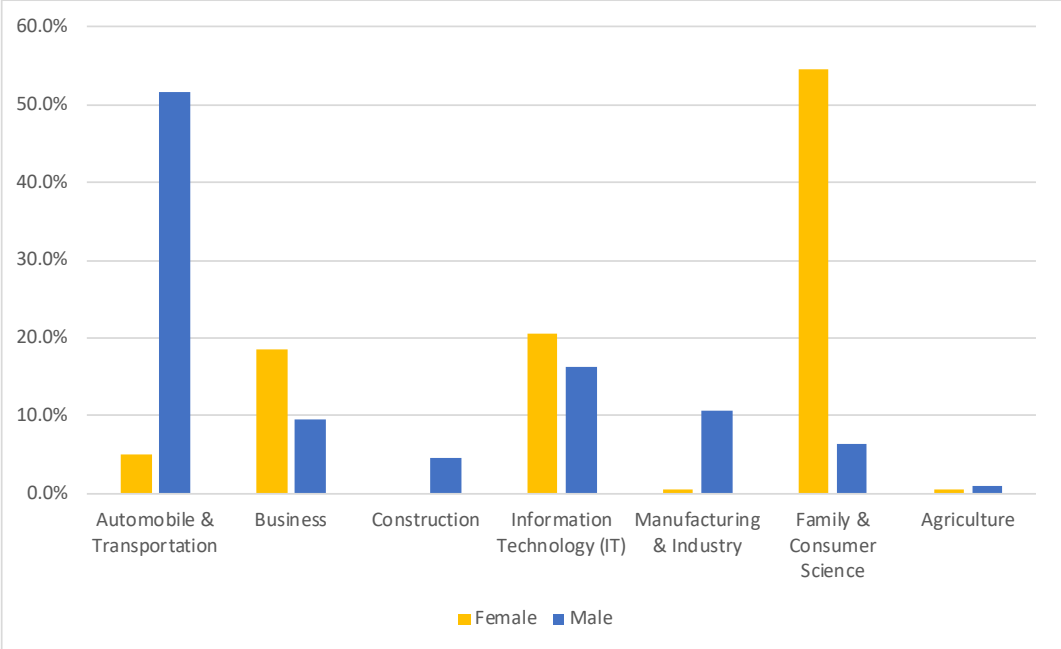

Figure 5. Comparison of female and male students' enrollment in IVET programs.

Further, a chi-square test of independence was performed to examine the relation between gender and enrollment in IVET programs. The results of the chi-square test showed that the relations between these variables is significant, $\chi^2(6, N = 523) =$

215.89, p <.01 and it is a strong relationship, r = .642. In other words, students' gender played an important role in how male and female students enrolled in IVET programs. In this sample, male students were more likely to enroll in Automobile and Transportation, while female were more inclined to enroll in Family & Consumer Science (Service sector) programs.

Factors Influencing Enrollment in IVET Lyceums and Programs

Research Question 2: What factors influence students' decisions to enroll in IVET lyceums?

To address the second research question, descriptive statistics and factor analysis were conducted. The factor analysis was performed to explore the grouping of the factors and the amount of the variance they explain.

Part III of the survey asked students the extent to which different factors (human and nonhuman) influenced their decision to choose IVET lyceums and enroll vocational programs. Question 1 asked students "To what extent did the following people, events, and other factors influence your decision to choose IVET lyceums?" There were 20 influencers of which eight were people and the other 12 influencing factors. The influencers were: 1) school teacher, 2) class supervisor, 3) school director/principal, 4) mother, 5) father, 6) brother or sister, 7) relatives, 8) friend, 9) open door event, 10) avoid military service, 11) study is easier in IVET lyceum, 12) hands-on experience in lyceums, 13) free food, 14) free dormitory, 15) want to find job sooner, 16) lyceum is close to home, 17) shorter duration of study, 18) TV program, 19) marketing materials, and 20) educational fair. For each factor, students responded on a 5-point Likert-type scale: 1) Not at all, 2) A little, 3) Unsure, 4) Not that much, 5) A lot.

The results of descriptive analysis showed that students were mostly influenced by their fathers (53%) and mother (53%). The following factors were hands-on experience (25%), brother or sister (22%), find job sooner (21%), friends (20%), relatives (17%), open-door event (13%), study easier in IVET (13%), lyceum is close to home (13%) and free food (12%). The other nine factors that follow were less influential: school teacher (7%), class supervisor (7%), study is shorter (7%), school director (6%), avoiding military (5%), free dormitory (5%), TV program (5%), marketing materials (3%), and education fair (1%). The frequencies and percentages of the factors that influenced students' decisions to choose IVET lyceums *Not that much* or *A lot* is shown in Table 13. Figure 6 provides a graphical representation of the percentages of students reporting each factor.

Table 13

Frequencies, Percentages, and Mean Score of Factors that Influenced Students Decision to Choose IVET Lyceums Not that much *and* A Lot

Factors	Not that much		A Lot		Total		*M*
	n	%	*n*	%	*n*	%	
Father	38	7%	241	46%	279	53%	4.86
Mother	35	7%	241	46%	276	53%	4.87
Hands-on experience in lyceum	34	6%	97	18%	131	25%	4.74
Brother or Sister	24	5%	90	17%	114	22%	4.79
Find a job sooner	17	3%	94	18%	111	21%	4.85
Friend(s)	35	7%	70	13%	105	20%	4.67
Relative(s)	21	4%	66	13%	87	17%	4.76
Open-door event	15	3%	53	10%	68	13%	4.78
Study easier in IVET lyceum	21	4%	46	9%	67	13%	4.69
IVET lyceum close to home	26	5%	40	8%	66	13%	4.61
Free food	14	3%	49	9%	63	12%	4.78
School teacher	14	3%	25	5%	39	7%	4.64
Study is shorter in IVET lyceum	12	2%	24	5%	36	7%	4.67
Class supervisor	16	3%	19	4%	35	7%	4.54

Table 13 (continued)

School director	9	2%	25	5%	34	6%	4.74
Avoiding military	6	1%	22	4%	28	5%	4.79
Free dormitory	5	1%	21	4%	26	5%	4.81
TV program	14	3%	11	2%	25	5%	4.44
Marketing materials	6	1%	11	2%	17	3%	4.65
Educational fair	4	1%	3	1%	7	1%	4.43

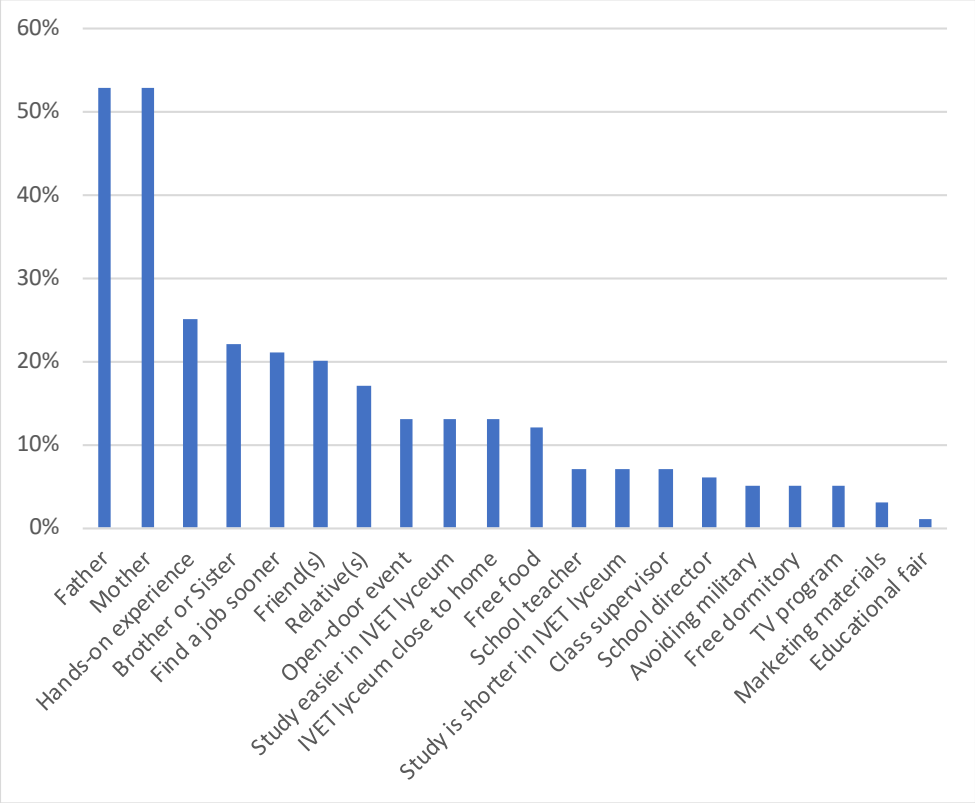

Figure 6. Percentages of students that selected each factor influencing their decisions to choose IVET lyceums *Not that much* and *A lot.*

Exploratory Factor Analysis for Enrollment in IVET Lyceum

A principle axis factoring (PAF) was conducted on the 20 items with orthogonal (varimax) rotation. The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for the analysis, KMO = .83. The KMO values for individual variables were greater than .77, which is above the acceptable minimum of .5 (Field, 2013). The

Barlett's Test of Sphericity, $\chi^2(190) = 2189.4$, $p < .001$, indicating the correlation between all variables was sufficient to conduct PAF on this data.

Prior to performing rotation, an initial analysis was conducted to obtain eigenvalues for each factor in the data. Seven factors had eigenvalues greater than Kaiser's criterion of 1. However, the sixth and seventh factor with KMOs = 1.03 and 1.02 were barely above that the minimum of one and a decision was made not to retain them. The decision was also based on the scree plot's point of inflexion (Figure 7). Therefore, an extraction was rerun with fixed numbers of factors and in this case, it was five. The five factors in combination explained 50.31% of the variance.

Six variables loaded under factor 1, and based on the common theme these variables represented, factor 1 was labeled IVET lyceum suits needs. The second factor comprised of three variables and this factor was labeled Lyceums' Marketing. Factor 3 consists of five variables and it was labeled People with close relationships. Factor 4 contained three variables and it was labeled School personnel. Factor 5 consisted of

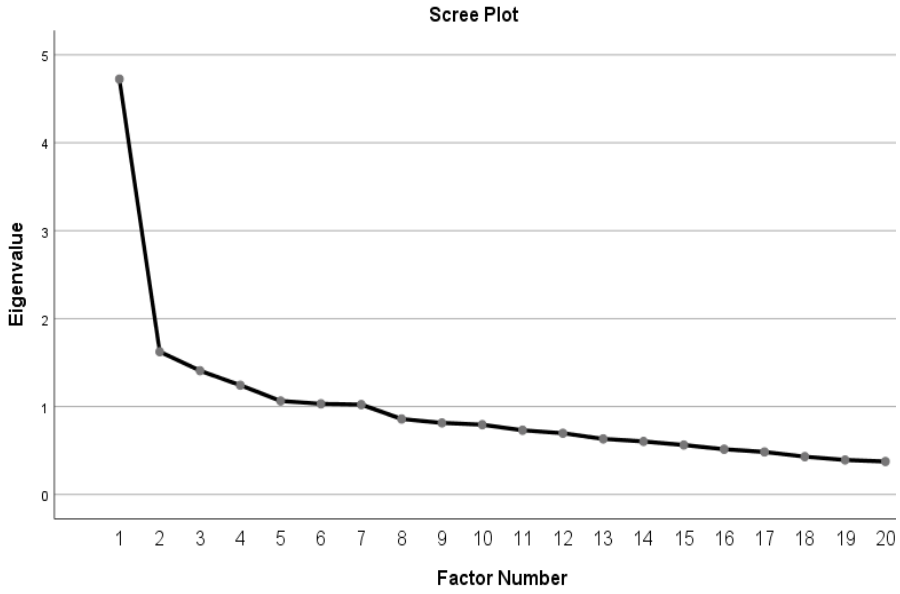

Figure 7. Scree plots for factor extraction of lyceum choice.

two variables and it was labeled Economic situation. Table 14 shows the results of the principal axis factoring with varimax rotation.

Table 14

*Principle Axis Factoring with Varimax Rotation of Factors for IVET Lyceum Choice (*N = *524)*

	Latent Factors				
Factors	Lyceum suits needs	Lyceums marketing	People with close relationships	School personnel	Economic situation
Study in IVET lyceum is easier	**.667**	.141	.051	.124	-.031
Hands-on experience in lyceum	**.654**	.051	.069	.088	.123
Duration of study in lyceum	**.543**	.353	.276	-.034	.071
Open-door event	**.509**	.105	.110	.091	.091
Find a job sooner	**.479**	.096	.206	.036	.106
IVET lyceum close to home	**.351**	.077	.197	.081	-.024
Avoid military service	**.231**	.180	.056	.031	.081
Marketing materials	.162	**.670**	.076	.086	.074
Education fair	.136	**.640**	.105	.146	-.004
TV program	.212	**.502**	.189	.134	.176
Brother or Sister	.219	.082	**.469**	.043	.048
Relatives	.141	.128	**.449**	.161	.074
Mother	.030	.047	**.428**	.085	-.014
Father	.102	.023	**.349**	.001	.074
Friends	.069	.081	**.300**	.112	.040
Class supervisor	.157	.127	.210	**.676**	.046
School teacher	.083	.209	.020	**.588**	.114
School director	.081	-.005	.319	**.508**	.139
Free dormitory	.091	.115	.087	.209	**.697**
Free food	.463	.172	.266	.083	**.531**
Eigenvalues	4.72	1.62	1.41	1.24	1.07
Percentage of variance	23.62	8.11	7.04	6.21	5.32
Cronbach's alpha	.74	.67	.51	.67	.61

Note: Variables with high loadings value are boldfaced.

Research Question 3: What factors influence students' decisions to enroll in IVET program?

Question 2 in Part III asked students "To what extent did the following people, events, and other factors influence your decision to choose the IVET program you currently study?"

There were 16 influencers of which eight were people and eight were other influencing factors. The influencing factors were: 1) school teacher, 2) class supervisor, 3) school director, 4) mother, 5) father, 6) brother or sister, 7) relative(s), 8) friend(s), 9) program's duration, 10) prior work experience, 11) want to work in this field, 12) better job opportunity, 13) higher salary, 14) better opportunity for small business, 15) TV program, and 16) marketing materials. For each factor, students responded on a 5-point Likert-type scale: 1) Not at all, 2) A little, 3) Unsure, 4) Not that much, 5) A lot.

The results of descriptive analysis showed to choose a program of study students were mostly influenced by their fathers (55%) and mothers (50%). The following factors were desire to work in the field (33%), better job opportunity (22%) brother or sister (21%), friend (19%), prior work experience in this field (19%), relatives (18%), and higher salary (18%). The remaining seven factors that follow were less influential: better opportunity to open a small business (11%), program's duration (9%), class supervisor (9%), TV program (8%), school teacher (7%), school director (6%), and marketing materials (4%). Table 15 shows frequencies, percentages, and the means of the factors that influenced students' decisions *Not that much* or *A lot* to choose IVET programs they currently study. Figure 8 displays a graphical representation of percentages of factors influencing students' decision to enroll in IVET programs.

Table 15

Frequencies, Percentages, and Mean of Factors that Influenced Students Decision to choose IVET programs Not that much and A lot

Factors	Not that much		A lot		Total		*M*
	n	%	*n*	%	*n*	%	
Father	46	9%	245	47%	291	55%	4.84
Mother	45	9%	220	42%	265	50%	4.83
Want to work in this field	26	5%	146	28%	172	33%	4.85
Better job opportunity	27	5%	86	16%	113	22%	4.76
Brother or Sister	19	4%	91	17%	110	21%	4.83
Friend(s)	26	5%	75	14%	101	19%	4.74
Prior work experience	28	5%	73	14%	101	19%	4.72
Relative(s)	19	4%	78	15%	97	18%	4.80
Higher Salary	44	8%	51	10%	95	18%	4.54
Opportunity for business	27	5%	33	6%	60	11%	4.55
Program's duration	10	2%	39	7%	49	9%	4.80
Class supervisor	14	3%	35	7%	49	9%	4.71
TV program	13	2%	28	5%	41	8%	4.68
School teacher	15	3%	24	5%	39	7%	4.62
School director	9	2%	21	4%	30	6%	4.70
Marketing materials	11	2%	11	2%	22	4%	4.50

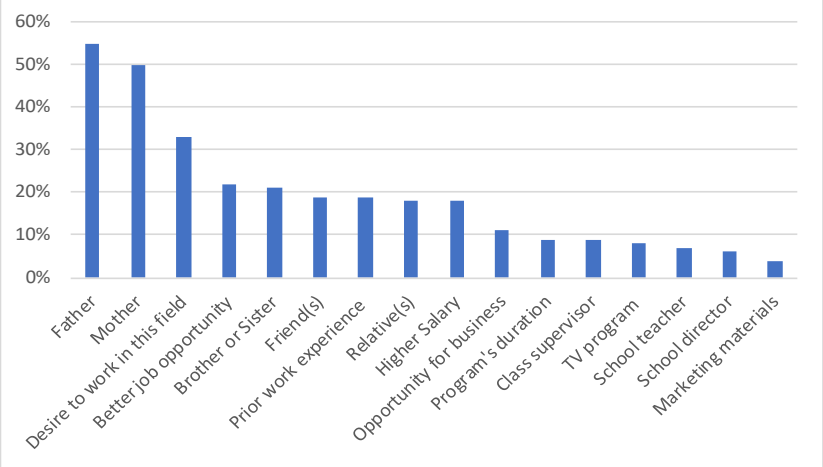

Figure 8. Percentages of students that selected each factor influencing their decisions to choose IVET programs *Not that much* and *A lot.*

Exploratory Factor Analysis of Factors Influencing IVET Program Enrollment

A principle axis factoring (PAF) was conducted on the 16 items with orthogonal (varimax) rotation. The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for the analysis, KMO = .85. The KMO values for individual variables were greater than .78, which is above the acceptable minimum of .5 (Field, 2013). The Barlett's Test of Sphericity, $\chi^2(190) = 1958.78$, $p < .001$, indicating the correlation between all variables was sufficient to conduct PAF on these data. Prior to performing rotation, an initial analysis was conducted to obtain eigenvalues for each factor in the data. Four factors had eigenvalues greater than Kaiser's criterion of 1 and in combination explained 54% of the variance.

The extracted factors were labeled based on common themes represented by the variables loaded under each factor. In this case, better job opportunity, desire to work in this field, high salary in this field, prior experience, open small business in this field, and program duration loaded on factor 1 and that factor was labeled Program interest. Class supervisor, school director, school teacher loaded together under factor 2 and that factor was labeled School staff. Mother, father, brother or sister, friend(s), and relative(s) loaded on factor 3 and that factor was labeled People with close relationships. Finally, marketing materials and TV program loaded under factor 4 and it was labeled Program marketing. Table 16 displays the results of the exploratory factor analysis of data on factors influencing students' decisions to choose IVET programs.

Table 16

*Principle Axis Factoring with Varimax Rotation of Factors for IVET Programs Choice (*N *= 523)*

	Latent Factors			
Factors	Program interest	School staff	People with close relationships	Program Marketing
Better job opportunity in this field	**.752**	.045	.235	.176
Want to work in this field	**.670**	.030	.048	.072
High salary in this field	**.642**	.100	.156	.138
Have prior experience in this field	**.603**	.119	.143	.072
Opportunity for small business	**.487**	.059	.242	.261
Program duration	**.414**	.277	.167	.235
Class supervisor	.063	**.704**	.295	.114
School director	.039	**.670**	.143	.010
School teacher	.167	**.577**	.147	.069
Relative(s)	.130	.161	**.590**	-.006
Brother or Sister	.158	.159	**.554**	.106
Friend(s)	.076	.099	**.434**	.028
Mother	.102	.116	**.378**	.076
Father	.074	.036	**.268**	.081
Marketing materials	.147	.100	.122	**.654**
TV program	.277	.041	.102	**.585**
Eigenvalues	4.35	1.83	1.25	1.14
Percentage of variance	27.17	11.47	7.82	7.11
Cronbach's alpha	.81	.72	.58	.60

Note: Variables with high loadings value are boldfaced.

In addition, frequencies were calculated to identify if there were any differences between the percentages of five most influencing factors in terms of choice of lyceum and choice of program. The results of descriptive statistics showed the percentage of students was equal regarding father and mother influencing them in choosing IVET lyceums. However, in terms of choosing IVET programs the percentages of students citing father's influence increased for 2%, while those citing mother's influence decreased 3%. Table 17 shows these changes.

Table 17

Changes in Five Influencing Factors for Lyceum Choice and Program Choice

Factors	Lyceum choice (%)	Program Choice (%)	Change (%)
Father	53	55	2
Mother	53	50	-3
Brother or Sister	22	21	-1
Friend	20	19	-1
Relatives	17	18	1

Student gender and parental influence

Given that parents were the most influencing factors in students' decisions about lyceums and program choice, chi-square tests of independence were performed to examine the relation between gender and parental influence. The results of the chi-square tests revealed that the relation between students' gender and mother's influence was significant in terms of both lyceum choice $\chi^2(4, N = 525) = 14$, $p = .008$, and program choice $\chi^2(4, N = 525) = 27.26$, $p < .001$. Female students were more likely to be influenced by mother than male students. However, the relation between student's gender and father's influence was not significant in both lyceum choice, $\chi^2(4, N = 525) = 3.18$, $p = .53$, and program choice, $\chi^2(4, N = 525) = 5.05$, $p = .23$.

Research Question 4: Do students enrolled in IVET lyceums after 9th grade differ from those enrolled after 11th grade in terms of factors that influence their decision to enroll in IVET lyceums and programs?

To answer this research question data collected in Part II (Question 1) and Part III (Questions 1 and 2) of the survey were used. Question 1 in Part II identified after which grade of general school students enrolled in IVET lyceums. Part III identified the

factors that influenced students' decisions to choose IVET lyceums and enroll in the program they currently study.

Further analysis was performed to determine whether there was a significant difference between students enrolled in IVET lyceums after 9th grade and those enrolled after 11th grade in terms of the twenty possible influencing factors on lyceum choice. A Mann-Whitney test was used to compare the mean ranks between the two groups. The Mann-Whitney is a nonparametric test and it was selected because the data are ordinal and do not meet the assumption for using parametric tests.

The Mann-Whitney test results showed that there was a statistically significant difference in how school teachers influenced 9th grade (M = 270) and 11th grade (M = 248), U = 27,464, z = -2.60, p = .009, r = -.11. In other words, 9th grade students were more influenced by school teacher than 11th grade students but with small effect size.

Also, school director's influence was statistically significantly different between 9th grade (M = 268) and 11th grade (M = 251), U = 28,126, z = -2.14, p = .033, r = -.093. School director influenced 9th graders more than 11th grade students but with a very small effect size. There was also statistically significant difference between 9th grade (M = 272) and 11th grade (M = 245) in how the factor, IVET lyceum study is easier, influenced their decision to enroll in IVET lyceum, U =27,000, z = -2.71, p =.007, r = -.12. Again, students who enrolled in IVET lyceum after 9th grade were more influenced by the easiness of studying in lyceum than students who enrolled after 11th grade, although the effect size is small.

The factor, IVET provides hands-on experience also influenced 9th grade (M = 273) and 11th grade (M = 243) students significantly different, U = 27,000, z = -2.60, p =

.010, r = -.11. The result indicates that students who enrolled in IVET lyceum after 9th grade were more influenced by this factor than those enrolled after 11th grade with a small effect size though.

Other than the four factors mentioned above, the remaining of the 16 factors did not have a statistically significant difference in how they influenced 9th grade and 11th grade students. Table 18 displays the number of students, mean scores, standard deviations, skewness, and the mean rank scores for the influence of 20 factors on students' decision to choose IVET lyceum after 9th grade and 11th grade. Table 19 displays the total number of students, mean scores, standard deviations, skewness, and p values for the influence of 20 factors on students' decision to choose IVET lyceum after 9th grade and 11th grade.

Table 18

Number of Students, Mean Scores, Standard Deviations, Skewness, and Mean Ranks for the Influencing Factors Scale of IVET Lyceum Choice

	9th Grade								11th Grade							
	N	*M*	*SD*	Skew	Kurt	Min	Max	Mean Rank	*N*	*M*	*SD*	Skew	Kurt	Min	Max	Mean Rank
School teacher	356	1.39	1.019	2.794	6.654	1	5	270.36	169	1.25	0.893	3.531	11.157	1	5	247.51
Class supervisor	356	1.37	0.954	2.734	6.449	1	5	267.20	169	1.27	0.883	3.701	12.847	1	5	254.15
School director	356	1.38	1.053	2.773	6.294	1	5	268.49	169	1.18	0.729	4.364	18.745	1	5	251.43
Mother	356	3.06	1.866	-0.050	-1.896	1	5	257.31	169	3.31	1.861	-0.307	-1.828	1	5	274.98
Father	356	3.09	1.836	-0.073	-1.871	1	5	256.97	169	3.33	1.882	-0.318	-1.841	1	5	275.71
Brother or sister	356	1.87	1.521	1.369	0.077	1	5	260.21	169	2.02	1.646	1.147	-0.553	1	5	268.88
Relative	356	1.78	1.463	1.563	0.668	1	5	267.06	169	1.62	1.296	1.895	1.967	1	5	254.44
Friends	356	1.90	1.485	1.307	-0.013	1	5	268.47	169	1.75	1.427	1.640	0.952	1	5	251.47
Open door event	356	1.66	1.336	1.816	1.671	1	5	267.98	169	1.50	1.211	2.308	3.701	1	5	252.51
Avoid military service	356	1.21	0.810	3.939	14.464	1	5	260.08	169	1.33	1.039	3.067	7.887	1	5	269.14
IVET study is easier	356	1.66	1.325	1.784	1.557	1	5	271.74	169	1.39	1.092	2.728	5.936	1	5	244.58
Hands-on experience	356	2.13	1.672	0.964	-0.926	1	5	272.69	169	1.78	1.467	1.530	0.540	1	5	242.59
Free food	356	1.46	1.201	2.440	4.206	1	5	261.43	169	1.55	1.322	2.093	2.549	1	5	266.30
Free dormitory	355	1.21	0.831	4.016	14.807	1	5	262.18	169	1.22	0.885	3.928	13.930	1	5	263.17
Find a job sooner	356	1.80	1.519	1.506	0.405	1	5	260.12	169	1.99	1.689	1.158	-0.607	1	5	269.07
Lyceum close to home	356	1.44	1.125	2.474	4.562	1	5	258.57	169	1.64	1.369	1.820	1.537	1	5	272.33
Duration of study	356	1.36	0.979	2.808	6.819	1	5	263.25	169	1.37	1.016	2.870	7.066	1	5	262.47
TV program	356	1.26	0.807	3.268	10.007	1	5	265.09	169	1.23	0.809	3.783	13.755	1	5	258.59
Marketing materials	356	1.20	0.732	4.008	15.758	1	5	263.91	169	1.17	0.696	4.697	22.046	1	5	261.07
Education fair	356	1.12	0.525	5.072	27.518	1	5	265.42	169	1.08	0.436	6.488	46.646	1	5	257.91

Table 19

Total Number of Students, Mean Scores, Standard Deviations, Skewness, and p *values for the Influencing Factors Scale of IVET Lyceum Choice*

	Total							*p*
	N	*M*	*SD*	Skew	Kurt	Min	Max	
School teacher	525	1.35	0.982	2.984	7.692	1	5	0.009
Class supervisor	525	1.34	0.932	2.994	7.994	1	5	0.141
School director	525	1.32	0.965	3.123	8.490	1	5	0.033
Mother	525	3.14	1.866	-0.131	-1.883	1	5	0.176
Father	525	3.17	1.853	-0.150	-1.869	1	5	0.153
Brother or sister	525	1.92	1.562	1.291	-0.157	1	5	0.448
Relative	525	1.73	1.412	1.658	1.009	1	5	0.239
Friends	525	1.85	1.467	1.402	0.237	1	5	0.142
Open door event	525	1.61	1.298	1.950	2.166	1	5	0.130
Avoid military service	525	1.25	0.891	3.596	11.616	1	5	0.183
IVET study is easier	525	1.58	1.260	2.017	2.457	1	5	0.007
Hands-on experience	525	2.02	1.616	1.121	-0.588	1	5	0.010
Free food	525	1.49	1.241	2.311	3.548	1	5	0.578
Free dormitory	524	1.21	0.848	3.978	14.383	1	5	0.874
Find a job sooner	525	1.86	1.576	1.381	0.011	1	5	0.405
Lyceum close to home	525	1.50	1.212	2.222	3.264	1	5	0.142
Duration of study	525	1.36	0.990	2.822	6.836	1	5	0.930
TV program	525	1.25	0.807	3.422	11.060	1	5	0.402
Marketing materials	525	1.19	0.720	4.199	17.355	1	5	0.667
Education fair	525	1.11	0.498	5.420	31.651	1	5	0.180

Another series of Mann-Whitney *U* tests were conducted to determine whether there was a difference between 9th grade and 11th grade students enrolling in their IVET programs in terms of 16 influencing factors. The tests found that the two groups were influenced differently only in terms of three factors. The Mann-Whitney test results showed that there was a statistically significant difference in how school teacher influenced 9th grade (M = 271) and 11th grade (M = 246), U = 27,136, z = -3.22, p = .001, r = -.14. In other words, 9th grade students were more influenced by school teacher than 11th grade students but with small effect size.

Class supervisors also influenced 9th grade (M = 269) and 11th grade (M = 251) students significantly different, U = 28,000, z = -2.07, p = .038, r = -.09. In other words, 9th grade students were more influenced by class supervisor than 11th grade students, although the effect size is very small. Another factor, opportunity for small business, also influenced 9th grade (M = 270) and 11th grade (M = 249) students significantly different, U = 28,000, z = -2.10, p = .035, r = -.09. The remaining 13 factors did not significantly differ in their influence on 9th grade and 11th grade students' decisions in choosing IVET programs. Table 20 displays the number of students, mean scores, standard deviations, skewness, and the mean rank scores for the influence of 16 factors on students' decision to choose IVET programs after 9th grade and 11th grade. Table 21 displays the total number of students, mean scores, standard deviations, skewness, and p values for the influence of 16 factors on students' decision to choose IVET programs.

Table 20

Number of Students, Mean Scores, Standard Deviations, Skewness, and Mean Ranks for the Influencing Factors Scale of IVET Program Choice

	9th Grade								11th Grade							
	N	*M*	*SD*	Skew	Kurt	Min	Max	Mean Rank	*N*	*M*	*SD*	Skew	Kurt	Min	Max	Mean Rank
School Teacher	356	1.40	1.074	2.644	5.531	1	5	271.28	169	1.15	0.696	4.945	23.673	1	5	245.57
Class supervisor	356	1.48	1.200	2.319	3.708	1	5	268.78	169	1.23	0.831	4.017	15.400	1	5	250.83
School director	356	1.27	0.886	3.448	10.824	1	5	265.76	169	1.24	0.903	3.718	12.450	1	5	257.19
Mother	356	2.88	1.882	0.115	-1.904	1	5	255.05	169	3.25	1.873	-0.279	-1.847	1	5	279.74
Father	356	3.17	1.836	-0.190	-1.836	1	5	257.74	169	3.36	1.878	-0.368	-1.802	1	5	274.08
Brother or Sister	356	1.79	1.486	1.526	0.519	1	5	257.10	169	2.07	1.689	1.065	-0.764	1	5	275.43
Relatives	356	1.81	1.513	1.499	0.408	1	5	264.99	169	1.72	1.422	1.658	0.989	1	5	258.80
Friends	356	1.91	1.526	1.311	-0.052	1	5	268.48	168	1.69	1.367	1.758	1.423	1	5	249.83
Program duration	356	1.47	1.156	2.401	4.273	1	5	265.16	169	1.41	1.110	2.682	5.697	1	5	258.45
Prior experience	356	1.80	1.466	1.504	0.494	1	5	263.68	169	1.80	1.493	1.490	0.404	1	5	261.56
Want to work in this field	356	2.28	1.760	0.768	-1.304	1	5	259.37	169	2.45	1.867	0.579	-1.630	1	5	270.65
Job opportunity in this field	356	1.92	1.543	1.270	-0.177	1	5	263.79	169	1.91	1.582	1.317	-0.129	1	5	261.33
High salary	356	1.75	1.400	1.543	0.663	1	5	264.48	168	1.70	1.348	1.623	0.956	1	5	258.31
Opportunity for business	356	1.61	1.261	1.864	1.908	1	5	269.75	169	1.36	0.953	2.821	7.038	1	5	248.78
TV program	356	1.33	0.976	3.092	8.255	1	5	262.23	169	1.38	1.086	2.773	6.172	1	5	264.62
Marketing materials	356	1.19	0.731	4.036	15.697	1	5	263.34	169	1.20	0.774	4.251	17.341	1	5	262.28

Table 21

Total Number of Students, Mean Scores, Standard Deviations, Skewness, and p *values for the Influencing Factors Scale of IVET Program Choice*

	Total							*p*
	N	*M*	*SD*	Skew	Kurt	Min	Max	
School Teacher	525	1.32	0.975	3.080	8.104	1	5	0.001
Class supervisor	525	1.40	1.100	2.676	5.591	1	5	0.038
School director	525	1.26	0.891	3.526	11.230	1	5	0.247
Mother	525	3.00	1.885	-0.010	-1.914	1	5	0.058
Father	525	3.23	1.850	-0.245	-1.827	1	5	0.211
Brother or Sister	525	1.88	1.558	1.358	-0.002	1	5	0.101
Relatives	525	1.78	1.484	1.545	0.565	1	5	0.564
Friends	524	1.84	1.479	1.435	0.310	1	5	0.102
Program duration	525	1.45	1.141	2.479	4.631	1	5	0.464
Prior experience in this field	525	1.80	1.473	1.495	0.449	1	5	0.847
Want to work in this field	525	2.33	1.795	0.704	-1.418	1	5	0.357
Job opportunity in this field	525	1.91	1.554	1.282	-0.170	1	5	0.828
High salary	524	1.73	1.383	1.564	0.737	1	5	0.569
Opportunity for business	525	1.53	1.176	2.102	2.947	1	5	0.035
TV program	525	1.34	1.012	2.974	7.421	1	5	0.773
Marketing materials	525	1.19	0.744	4.105	16.177	1	5	0.874

In addition, chi-square tests for independence were performed to examine the relationship between grade level (9th grade and 11th grade) and selected factors that influenced students' decisions to choose IVET lyceums. In this analysis, out of 20 factors, the top 10 influencing factors such as (1) father, (2) mother, (3) hands-on experience, (4) brother or sister, (5) find a job sooner, (6) friend, (7) relatives, (8) open-door event, (9) studying easier in IVET lyceum, and (10) IVET lyceum is close to home were included in the analysis.

The results of the chi-square tests for independence indicated there were no relationships between grade level and the ten influencing factors, mother, χ^2 = (4, *N* =525) = 3.90, *p* >.05.; father, χ^2 = (4, *N* =525) = 7.51, *p* >.05.; hands-on experience, χ^2 = (4, N =525) = 7.62, *p* >.05.; brother or sister, χ^2 = (4, *N* =525) = 5.18, p >.05.; find job sooner, χ^2 = (4, N =525) = 7.42, *p* >.05.; friend, χ^2 = (4, N =525) = 4.29, p >.05.; relatives, χ^2 = (4, N =525) = 7.40, *p* >.05.; open-door event, χ^2 = (4, N =525) = 9.34, *p* >.05.; easiness of study, χ^2 = (4, N =525) = 8.15, *p* >.05.; and lyceum close to home, χ^2 = (4, N =525) = 4.45, *p* >.05.

A series of chi-square tests for independence were performed to examine relationship between grade level (9th grade and 11th grade) and selected factors that influenced students' decisions to enroll in IVET programs they study. In this analysis, out of 16 factors, the top ten influencing factors such as (1) father, (2) mother, (3) desire to work in this field, (4) job opportunity, (5) brother or sister, (6) friend, (7) prior work experience, (8) relatives, (9) higher salary, and (10) opportunity for small business were included in the analysis.

The results of the chi-square tests for independence indicated there were no relationships observed between grade and the influencing factors such as mother, χ^2 = (4, *N* =525) = 7.88, *p* >.05, father, χ^2 = (4, *N* =525) = 6.02, *p* >.05, want to work in this field, χ^2 = (4, *N* =525) = 6.52, *p* >.05, job opportunity, χ^2 = (4, *N* =525) = 3.28, *p* >.05, brother or sister, χ^2 = (4, *N* =525) = 6.11, *p* >.05, friend, χ^2 = (4, *N* =525) = 2.83, *p* >.05.; prior work experience, χ^2 = (4, *N* =525) = 2.78, *p* >.05, relatives, χ^2 = (4, *N* =525) = 2.35, *p* >.05.; higher salary, χ^2 = (4, *N* =525) = 2.77, *p* >.05, and opportunity for business, χ^2 = (4, *N* =525) = 6.09, *p* >.05.

Summary

This chapter presented the analysis of data collected from the sample of students enrolled in initial vocational education and training (IVET) lyceums in Tajikistan. The purpose of the study was to determine factors that influenced students' decisions to enroll in IVET lyceums in Tajikistan.

The population of this study was 23,000 students enrolled in the IVET lyceums during the academic year of 2017-2018. Data from a sample size of 525 students were used in this study. There were four research questions that guided this study. Research Question 1 (RQ1) aimed to explore the demographic characteristic of the students enrolled in IVET lyceums in Tajikistan. The data collected through Question 1-10 addressed RQ1. The data showed that 30% of the students are female and 70% are male. It also revealed that 61% live in rural and 39% live in urban areas. More than half (55%) of the students were 17-18 years old, 22.5% were 15-16, 14.3% were 19-20, and 8.4% were 21 or above. In terms of parents' education attainment, 77% of mothers and 53% of fathers do not have postsecondary education; however, in comparison to

mothers (9.1%) more fathers (21.1%) have a university degree. At the same time, 31% of students have their fathers and only 8.3% have their mothers in labor migration. With regard to family economics, 58% have few problems or are having hard time, 27% of families have just enough money to purchase basic needs, and about 40% did not have any financial problems.

Of the total sample, 68% enrolled in IVET lyceums after 9th grade and 32% enrolled after 11th grade of completing general secondary schools. With regard to their program of study, more than half of students (59%) were enrolled in two programs, such as Automobile & Transportation and Family & Consumer Science.

Research Question 2 aimed to identify factors that influenced students' decisions to enroll in IVET lyceum. Students were asked to identify the extent to which twenty factors influenced their decision to enroll in IVET lyceum. For each factor, students responded on a 5-point Likert-type scale ranging from 1) *Not at all*, 2) *A little*, 3) *Unsure*, 4) *Not that much*, 5) *A lot*.

Analysis showed that out of twenty, the top ten influencing factors that influenced students' decisions *Not that much* or *A lot* were mothers (53%), father (53%), hands-on experience in lyceum (25%), brother or sister (22%), find a job sooner (21%), friend(s) 20%, relative(s) 17%, open-door event (13%), studying in IVET is easier (13%), and lyceum is close to home (13%). As a result of factor analysis, the 20 factors loaded into five latent factors that were labeled as lyceum suits my needs, lyceums marketing, People with close relationships, school staff, and economic situation. In combination, these factors explained 50.31% of the variance.

Research Question 3 aimed to determine which factors influenced IVET students' decisions to enroll in IVET programs they were studying. Students were asked to identify the extent to which sixteen factors influenced their decision to enroll in IVET programs. For each factor, students responded on a 5-point Likert-type scale ranged from 1) *Not at all*, 2) *A little*, 3) *Unsure*, 4) *Not that much*, 5) *A lot*.

Analysis showed that out of sixteen, the top five factors that influenced students' decisions *Not that much* or *A lot* were father (55%), mother (50%), desire to work in this field (33%), better job opportunity and brother or sister (22%), and friend(s) and prior work experience (19%). The results of factor analysis loaded the sixteen factors into four latent factors that were labeled as program interest, school staff, People with close relationships, and program marketing. In combination, these factors explained 54% of the variance.

Research Question 4 sought to identify whether there was a difference between students enrolled after 9th grade and those enrolled after 11th grade in terms of the influencing factors. The results of Mann-Whitney tests showed that in choosing IVET lyceums, four factors including school teacher, school director, studying in IVET is easier, and hands-on experience influenced the two grades significantly different. They influenced 9th grade students more than 11th grades with small effect sizes.

With regard to choosing IVET programs, Mann-Whitney U tests showed that three factors including school teacher, class supervisor, and opportunity for small business influenced the two groups significantly different. These factors influenced 9th grade students more than 11th grade with small effect sizes.

Chapter V will provide a summary of the findings. Based on the study's findings conclusions will be made. Recommendations for practice and future research in Tajikistan will be offered.

CHAPTER V

Summary, Conclusions, and Recommendations

The goal of this study was to examine what factors influenced students' decisions to enroll in IVET lyceums and programs. This chapter reviews the major findings, discusses and presents conclusions, and makes recommendations for practice and future research in the field of IVET.

Summary

The global economy in the 21st century is more dependent on talent and human capital than financial resources (Ashford, 2014). Yet, globally employers are challenged to fill open jobs with the skilled workforce they need, and the percentage of those employers increased from 40% in 2016 to 45% a year later (Manpower Group, 2018). The increasing need for a workforce comes at a time when the global unemployment rate remains high with 192 million persons without jobs and it is projected to stay unchanged in 2019 (ILO, 2018).

In addition, the number of people who are working in vulnerable employment is high at 42% in developed countries and higher at 46% in emerging countries and 76% in developing countries. These statistics are more distressing when it comes to young people whose unemployment rate is three times higher than adults at 13% remaining almost unchanged since 2016 (ILO, 2018).

The paradox of high unemployment and high demand for workforce is a result of "disconnect between the skills people have and the skills employers need" and two of the causing factors for this disconnection are employability skills gap and information gap (Ashford, 2014, p. 17). In the context of this study, skills gap is unavoidable when

IVET offerings are outdated and not demanded anymore, while the information gap is the situation when IVET policies and practices are not informed by the development in the labor market.

Given the challenges mentioned above, worldwide countries and international organizations such as World Bank, ILO, UNESCO, Asian Development Bank (ADB), and other developmental agencies are seeing IVET as a potential instrument to ease the tensions in the economies and labor markets, hence investing resources for research and improvement of IVET infrastructure.

This study was conducted in the Republic of Tajikistan, an ex-Soviet country located in Central Asia. Geographically, Tajikistan is a landlocked country which makes it economically vulnerable and dependent. It is a developing country still in the process of transition to a market economy after its independence from the Soviet Union in 1991 (Nourzhanov & Bleuer, 2013).

The purpose of this study was to determine factors that influence students' decisions to enroll in initial vocational education and training (IVET) lyceums in Tajikistan. The research questions that guided this study were as follows:

RQ_1: What is the demographic profile of students in IVET lyceums in Tajikistan?

RQ_2: What factors influence students' decisions to choose IVET lyceums?

RQ_3: What factors influence students' decisions to enroll in IVET programs?

RQ_4: Do students enrolled in IVET lyceums after 9^{th} grade differ from those enrolled after 11^{th} grade in terms of factors that influence their decision to enroll in IVET lyceums?

The targeted population of this study was students enrolled in IVET lyceums in Tajikistan. The number of students was 23,000 during 2016-17 academic year. A final sample of *n* = 525 students was used for data analysis in this study. The sample was selected randomly from 18 IVET lyceums. These lyceums were also selected randomly from the total of 61 IVET lyceums in Tajikistan. The sample was comprised of students that enrolled in IVET lyceums after completing 9th grade and 11th grade in the general schools. Students who enroll in IVET lyceums after 9th grade study for two years and receive a certificate for completion of upper secondary education (equivalent to U.S. high school diploma) in addition to a certificate for their chosen vocational programs. Those enrolled after 11th grade study for one year and receive a certificate for the vocational programs they studied.

This study has several limitations. First, the study was limited to the students enrolled in public IVET lyceums under the jurisdiction of the Ministry of Labor, Migration, and Employment (MLME) of Tajikistan. Second, for the purpose of confidentiality, students self-reported their examination grades. Finally, students were randomly selected by lyceums administration and there is a chance that some students may have felt pressure to participate even though they were informed that participation was voluntary. Given the aforementioned limitations, this study may or may not be generalized to the students in the general schools.

The instrument used in this study was originally developed by Gaunt (2005). The researcher slightly modified the instrument to adapt it to Tajikistan's context. One of the modifications was in that the original instrument had letter grades that were changed to number grades. Also, the question that asked students perception about CTE/IVET in

the original instrument was not included because Gaunt (2005) compared CTE and non-CTE students' perceptions about career and technical education, while this study involved only CTE/IVET students. In Part 3, several items were modified to directly address the context of Tajikistan.

The final instrument had four parts. Part 1 had ten questions and inquired demographic information, including age, gender, examination grade, permanent residency, parent's education level, and family economic situation. Part 2 aimed to collect information on students' enrollment status including their area of study, year of study, and duration of study.

Part 3 of the survey had two questions. Question 1 asked students "To what extent did the following people, events, and factors influenced your decision to enroll in IVET lyceums?" There were 20 factors in total and for each factor students responded on a 5-point Likert-type scale with 1) *Not at all*, 2) *A little*, 3) *Unsure*, 4) *Not that much*, 5) *A lot*. Question 2 asked students "To what extent did the following people, events, and factors influenced your decision to enroll in IVET programs?". There were 16 factors in total and for each factor students responded on a 5-point Likert-type scale with 1) *Not at all*, 2) *A little*, 3) *Unsure*, 4) *Not that much*, 5) *A lot*.

Part 4 asked additional information about students' plans after completing IVET lyceums, their confidence level about finding jobs related to their program, and whether they ever thought of changing their program or quitting their studies at IVET lyceum. However, questions asked in Part 4 were not used nor reported in this study.

To address Research Question 1, descriptive statistics were conducted to identify the demographic profile of students. In terms of gender, the analysis showed

that male students accounted for 70% and female for 30% of the sample. In regard to age, 91% were between 15 and 20 years old. Most of the students (60%) live in rural areas and less (39%) lived in the urban areas. While studying in the lyceums, 71% lived in their houses, 13% lived in the lyceums' dormitory, and 16% rented or lived in their relatives' homes.

With respect to their academic performance based on self-reported examination grades in general schools, the descriptive analysis showed that mostly students received a grade of 4 (good) for all subjects. However, the mean grade for Algebra was the least in comparison to Tajik Language, History, and Russian Language. In other words, students' performance was better in humanities than Algebra.

With regard to their economic situation, 40% reported that their families do not have any financial problems, while 60% of students reported their families have just enough money to buy basic needs, have a few problems, and/or families have a hard time purchasing basic needs. Also, over half of the students (57%) reported having one or more of family members in labor migration outside Tajikistan, while 43% reported not having anyone in labor migration. Mostly, fathers (23%) and brothers (19%) were in labor migration.

In terms of enrollment status, 68% enrolled in IVET lyceums after 9th grade, while 32% enrolled after 11th grade. The majority (77%) were first-year students and the rest (23%) were in their second year of study. As for program enrollment, the top three programs where the majority were enrolled were Automobile and Transportation (38%), Family & Consumer Science (21%), and Information Technology (18%). A chi-square test of independence indicated that there was a significant and strong relationship

between gender and program enrollment $\chi^2(6, n = 523) = 215.89$, $p < .01$, $r = .642$. Female students (55%) were mainly enrolled in Family & Consumer Science, while male students (52%) were more likely to enroll in Automobile & Transportation program. In other programs there was less of a gender gap.

To address Research Question 2, descriptive statistics and exploratory factor analysis were conducted to identify the extent to which 20 factors influenced students' decisions to enroll in IVET lyceums. Students responded on a 5-point Likert-type scale with 1) *Not at all*, 2) *A little*, 3) *Unsure*, 4) *Not that much*, and 5) *A lot*. The results of the descriptive statistics indicated that students were mostly influenced by their parents, as 53% reported this to be the case. Following parents were hands-on experience in lyceum (25%), brothers or sisters (22%), finding a job sooner (21%), and friends (20%). Relatives (17%), open-door event, study is easier in lyceum, and lyceum close to home all three at 13% followed by free food (12%). School staff had the least influence: school teacher (7%), class supervisor (7%), and the school director (6%). As a result of principal axis factoring with varimax rotation, the twenty factors loaded into five latent factors that were labeled lyceum suits my needs, lyceum's marketing, people with close relationships, school staff, and economic situation altogether explaining 50.30% of the variance.

To address Research Question 3, descriptive statistics and exploratory factor analysis were conducted to identify the extent to which 16 factors influenced students' decisions to choose IVET programs. Students responded on a 5-point Likert-type scale with 1) *Not at all*, 2) *A little*, 3) *Unsure*, 4) *Not that much*, and 5) *A lot*. Data analysis indicated students were mostly influenced by their fathers to choose a vocational

program, as 55% reported this to be the case. Followings were mother (50%), desire to work in this field (33%), better job opportunity (22%), brothers or sisters (21%), friend(s) and prior work experience both at 19%, relative(s) and higher salary both at 18%, and opportunity for small business (11%). In the single digit group were program duration (9%), class supervisor (9%), TV program (8%), school teacher (7%), and school director (6%). Marketing materials had the least influence at 4%. As a result of principal axis factoring with varimax rotation, the sixteen factors loaded into four latent factors that were labeled program interest, school staff, people with close relationships, and program marketing that in combination explain 54% of the variance.

To address Research Question 4, a series of Mann-Whitney tests were performed to determine whether there was a difference between 9th grade and 11th grade students in terms of factors influencing their decision to enroll in IVET lyceums and programs. Also, chi-square tests of independence were conducted to examine the relationship between grade level and the major influencing factors.

In regard to decision about IVET lyceum, the results of the Mann-Whitney tests showed there was a significant difference between 9th and 11th grade students in terms of the influence of school teacher, U = 27,464, z = -2.60, p = .009, r = -.11; school director, U = 28,126, z = -2.14, p = .033, r = -.093; study is easier in lyceum, U =27,000, z = -2.71, p =.007, r = -.12 and IVET provides hands-on experience, U = 27,000, z = -2.60, p = .010, r = -.11 all with small effect sizes. These results indicated 9th grade students were more influenced by these factors than 11th grade students. The remaining 16 factors did not have a significantly different influence on the decision 9th grade and 11th grade students made in regard to choosing IVET lyceums.

The chi-square tests results indicated there were no relationships between grade level and the top ten influencing factors, mother, χ^2 = (4, *N* =525) = 3.90, *p* >.05; father, χ^2 = (4, *N* =525) = 7.51, *p* >.05; hands-on experience, χ^2 = (4, *N* =525) = 7.62, *p* >.05; brother or sister, χ^2 = (4, *N* =525) = 5.18, *p* >.05; enter job market, $\chi 2$ = (4, *N* =525) = 7.42, *p* >.05.; friend, χ^2 = (4, *N* =525) = 4.29, *p* >.05; relatives, χ^2 = (4, *N* =525) = 7.40, *p* >.05; open-door event, χ^2 = (4, *N* =525) = 9.34, *p* >.05; easiness of study, χ^2 = (4, *N* =525) = 8.15, *p* >.05; and lyceum close to home, χ^2 = (4, *N* =525) = 4.45, *p* >.05 in relation to students' decisions to enroll in IVET lyceum.

With regard to students' decisions about IVET programs, the Mann-Whitney *U* tests result showed there were three factors with significantly different influence on 9th grade and 11th grade students. These were school teacher, *U* = 28,000, *z* = -2.07, *p* = .038, *r* = -.09; class supervisors, *U* = 28,000, *z* = -2.07, *p* = .038, *r* = -.09, and opportunity for small business, *U* = 28,000, *z* = -2.10, *p* = .035, *r* = -.09, all with small effect sizes. These results indicated that 9th grade students were more influenced by these factors than were 11th grade students. The remaining 13 factors did not show a significantly different influence.

The chi-square tests did not find any relationship between grade level and the most influencing factors such as χ^2 = (4, *N* =525) = 7.88, *p* >.05, father, χ^2 = (4, *N* =525) = 6.02, *p* >.05, desire to work in this field, χ^2 = (4, *N* =525) = 6.52, *p* >.05, job opportunity, χ^2 = (4, *N* =525) = 3.28, *p* >.05, brother or sister, χ^2= (4, *N* =525) = 6.11, *p* >.05, friend, χ^2 = (4, *N* =525) = 2.83, *p* >.05.; prior work experience, χ^2 = (4, *N* =525) = 2.78, *p* >.05, relatives, χ^2 = (4, *N* =525) = 2.35, *p* >.05.; higher salary, χ^2 = (4, *N* =525) = 2.77, *p* >.05, and opportunity for business, χ^2 = (4, *N* =525) = 6.09, *p* >.05.

Conclusions

The conclusions for this study were made as a result of the findings of this study. The first research question identified the demographic profile of IVET students in Tajikistan. Several conclusions can be made in terms of demographic profile of IVET students in Tajikistan that are in line with other studies from different countries.

First, the results of the descriptive statistics indicate that more male students enroll in IVET lyceums than females. The prevalence of male students in vocational education can be observed globally and is confirmed by other studies mentioned in the literature (Al-Saadieh, 2016; Misola, 2010; Ndahi, 2002; Stenstrom, 1995, UNESCO, 1999). In Tajikistan, female participation has been low not only in vocational education but in other levels as well (UNICEF, 2013), and it is partly attributed to the resurfacing of "traditional stereotypes and patriarchal values" in the Central Asian region (Silova, 2009). The gender gap in education is distressing given that female-male ratio in the general population of Tajikistan is equal (Statistical Agency of Tajikistan, 2018b).

Second, one may conclude that female and male students made traditional choices in terms of IVET programs. There was a significant and a strong relation between student's gender and program enrollment, $\chi^2(6, N = 523) = 215.89$, $p < .01$, $r = .642$. This relationship was obvious in Automobile & Transportation programs that had mostly male students and Family & Consumer Science programs that had mostly female students. This trend was also observed in other studies from different countries (Al-Saadieh, 2016; Misola, 2010; Ndahi, 2002; Stenstrom, 1995, UNESCO, 1999).

Third, majority of IVET students enroll in lyceums after completing 9th grade in general schools and are between 15-18 years old, despite the fact that IVET schools

offer courses to adults as well. Also, the students in IVET schools are mostly from rural areas rather than urban. This is reflective of the rural-urban ratio (74% - 26%) in the general population in the country (Statistical Agency of Tajikistan, 2016). Fourth, in terms of academic performance, IVET students performed significantly less well in mathematics than they do in languages and history. This trend confirms some of the studies that vocational students tend to perform more poorly than non-vocational students (Agodini, Uhl, & Novak, 2004; Gaunt, 2005; Gean, 2010; Lamb, 2011; Levesque & Hudson, 2003; Teese, 2010) and their academic background becomes one of the reasons they enroll in IVET schools (Quddusov, 2013; Yi et al., 2015).

Fifth, IVET students in Tajikistan tend to come from disadvantaged families. This characteristic was concluded from two variables: parents' highest education attained and the family's economic situation. For majority of mothers (78%) and fathers (54%), the highest education attained was secondary education, meaning 9th grade and/or 11th grade. Fathers tend to attain a higher level of education (21%) than mothers (9%). In attaining SVET and IVET degrees, fathers outnumbered mothers, as well. In general, parents' education levels has a relationship to students' enrollment in vocational education (Awang et al., 2011), aspirations and GPA (Hossler and Stage, 1992), occupational choice (Law & Arthur, 2003), career adaptability (Hirschi, 2009), performance (Yi et al., 2015), and educational attainment (Quddusov, 2013).

With regard to the economic situation, IVET students in Tajikistan tend to come from economically disadvantaged families. Only 40% of students' families do not have any financial problems, while 15% have few problems, 27% have just enough to buy basic needs, and 18% have a hard time getting enough money for basic needs. This

case is reflective of the studies conducted in by Agodini et al. (2004), Foley, (2007), Gaunt (2005), Gean (2010), Lamb (2011), Polat (2014), and Rojewski (1997) indicate that economically disadvantaged students tend to enroll in vocational education more than their peers from privileged families. Also, over half of the students (57%) reported having family members, mostly fathers and brothers, in labor migration outside the country to earn money for sustaining their families.

The second and third research question examined the factors that influenced students' decisions to enroll in IVET lyceums and programs. There are no studies that have been conducted to identify the influencing factors for students in Tajikistan. The literature review identified various factors with different levels of influence on enrollment in vocational education in other countries. These factors include family members, parents' education and occupation, school personnel, friends (Chandler, 2009; Esters, 2007; Gaunt, 2005; Yi et al., 2015; Hirschi, 2009) students' interest, gender, academic performance, socio-economic status (Agodini, 2004; Fletcher, 2012; Gaunt, 2005; Lamb, 2011; Rojewski, 1997) , perception of IVET, mass media, marketing, and college credit (Gaunt, 2005; Gean, 2010; Stafford, 2014).

The results of the descriptive statistics and factor analysis showed that some of the factors were consistent with the studies conducted by researchers mentioned above. In this study, among the people who had the most influence on students' decisions about enrolling in IVET were mothers and fathers. Brother or sister, friend(s) and relative(s) were also among the major influencers. Hands-on experience in IVET lyceums and desire to find a job sooner were among the top factors that influenced students' decisions. These economic expectations of students are consistent with

studies by Lamb (2011), Polat (2014), and Stafford (2014). School staff and marketing materials had the least influence for students in Tajikistan that was similar to the findings of the studies by Chandler, (2009), Gaunt, (2005), Gean, (2010), and Stafford, 2014. One of the reasons for school staff having the least influence is that schools in Tajikistan do not have counselors who can provide professional services. Teachers and school directors are not able to provide guidance because of limited resources.

With regard to factors that influenced students' decisions to choose their vocational programs, again parents were the most influencing factor. In choosing IVET lyceum, parental influence was reported by an equal number of students; however, in choosing IVET programs, fathers (55%) seemed to have more influence than mothers (50%). Fathers having more influence on program choice may be attributed to three reasons. First, the number of fathers with higher education correlated with SVET and IVET more than mothers. Second, in a traditional Asian family, the father has more power in decision-making than mothers (Liden, 2012; Silova & Abdushukurova, 2009). Third, as the majority of IVET students are male and tend to enroll in traditionally masculine programs, they most possibly were advised by fathers. The parental influence on program choice mirrors the result of other studies (Brown, 2003; European Commission, 2011; Hughey, 2005; Saiti & Mitrosili, 2005). Among people, brothers or sisters were influencing 21%, friends were influencing 19%, and relatives were influencing 18% of the students. In this study friends were not as influential as was found by Gaunt (2005) Chandler (2009), Gean (2010), and Stafford (2014). A possible explanation for this is that students may rely more on their parents' advice considering them more experienced than friends. Other factors that influenced students IVET

program choice were wanting to work in this field (33%), better job opportunity (22%), higher salary (18%), and opportunity for small business (11%). School staff and program marketing were least influential as they were regarding lyceum choice.

In addition, chi-square tests of independence showed a significant relationship between students' gender and mothers' influence. The tests results showed that in both choosing lyceum and vocational programs, female students were more likely to be influenced by mothers than male students. One of the reasons for this relationship may be the close mother-daughter relationship in Asian societies (Rastogi & Wampler,1999). Another explanation may be attributed to the findings is that many fathers are outside the country in labor migration. However, there was no significant relationship between students' gender and fathers' influence.

The fourth research question examined whether there was a significant difference between students that enrolled in IVET lyceums and programs after 9th grade and those enrolled after 11th grade. The Mann-Whitney U, a non-parametric test, was used to analyze the difference between the two grades. This non-parametric test was used because using parametric tests for Likert-type items would lead to error in inferences or oversimplification of the analysis (Clason & Dormody, 1994; Miller & Salkind, 2002). The results of the Mann-Whitney *U* test showed that for decisions on lyceum choice there was no significant difference between 9th grade and 11th grade in terms of 16 influencing factors, including the most influencing factors such as parents and siblings.

However, there were significant differences between the two grades in terms of four factors including school teacher, $U = 27{,}464$, $z = -2.60$, $p = .009$, $r = -.11$, school

director, U = 28,126, z = -2.14, p = .033, r = -.093, IVET study is easier, U =27,000, z = -2.71, p =.007, r = -.12, and IVET provides hands-on experience, U = 27,000, z = -2.60, p = .010, r = -.11, all with small effect sizes. It should be mentioned that out of these four factors the first three were the least influencing factors. Only one factor, IVET provides hands-on experience, was among the top influencing factors. Although having small effect sizes, these four factors influenced 9th grade students more than 11th grade students in their decision about choosing IVET lyceums. In addition, chi-square tests for independence were conducted that showed no relationship between grade level and the top 10 factors in terms their influence on lyceum choice.

As for choosing IVET programs, Mann-Whitney U tests results showed there were no significant differences between 9th grade and 11th grade students in terms of 13 factors, including the most influential ones. However, there were differences between the two grades in terms of factors including school teacher, U = 27,136, z = -3.22, p = .001, r = -.14, class supervisor, U = 28,000, z = -2.07, p = .038, r = -.09, and opportunity for small business U = 28,000, z = -2.10, p = .035, r = -.09, all with very small effect size. Chi-square tests for independence indicated there were no relationships observed between grade level and the top 10 factors influencing students' decisions about choosing IVET programs.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are proposed for future research, practice, and policy.

This is the first empirical study that has ever been conducted among Tajikistan's IVET students to explore their demographic profile and identify the factors that influence

the decisions they make in regard to enrollment in IVET lyceums and programs. Given the lack of research in this area, this descriptive study aimed to describe the educational climate. Therefore, it can serve as a jumpstart for future research that can dive deeper into other specific areas and issues within the IVET in Tajikistan. Future studies also can focus on comparing IVET and non-IVET students in terms of their perceptions toward IVET, their demographic differences, and factors that influence their decisions to enroll and not to enroll in IVET. Comparisons would allow stakeholders to better understand the strengths and shortcomings of IVET in Tajikistan.

A similar study can be conducted in each region to provide a regional picture of IVET students in terms of all the characteristics identified in this study. Given the geographic and economic development differences of the regions in Tajikistan, a regional study will help develop policy oriented to the local needs.

Additionally, given the prevailing influence of parents found in this study, studying the parents' demographic profiles and their perceptions of IVET is important and will be beneficial for IVET authorities.

The study showed that secondary school staff, including teachers, class supervisors, and directors were among the least influencing factors on students' decisions about IVET. Therefore, conducting studies with secondary school teachers and administration to understand their opinion of IVET will benefit the authorities to understand the possible reasons for their low-level contribution to students' decision-making processes. This study found that lower-grade students are more influenced by school staff than upper-grade. This means school administration should provide career guidance as early as possible.

Future studies should also focus on employers' perceptions of IVET in general and its graduates. Employers' perspectives are important asset for IVET providers in training a future workforce that has both technical and social skills.

Conducting studies that touch upon gender and IVET will be beneficial. Despite the almost equal ratio of men and women in the general population, participation of Tajik women in the workforce, as well as education, is disturbing (Silova & Abdushukurova, 2009; UNICEF, 2013, Whitsel, 2009). This trend was mirrored in this study. The current participation of women in IVET is 22% (MLME, 2018).

Initial vocational education and training (IVET) has the least enrollment compared to general upper secondary school, secondary VET, and universities. The enrollment in 61 IVET lyceums is 23,000, in 67 SVET it is 77,000, in 39 universities it is 187,000 (Statistics Agency of Tajikistan, 2017). Therefore, future studies could involve students, parents, school staff, IVET staff, employers, and policy makers to explore the potential factors for low enrollment.

Research studies that track IVET students' employment successes after graduation would be beneficial for policy level and lyceum level administrators to guide their curriculum, programs, and cooperation with employers. Having feedback from former students on their past learning and current employment experiences is valuable information for training providers.

Parents were the major factor influencing students' decisions. However the study also showed that the educational attainment of parents was not impressive, and in particular, regarding mothers. The highest level of education mothers received was 9^{th} grade education (29%) and 11^{th} grade education (49%). Therefore, both policy

makers and lyceums' administration should cooperate with parents more closely so that they can provide informed input during students' decision-making processes. In addition, the government needs to invest resources to provide training sessions for parents regarding the importance of informed career decision-making in today's labor market and economy.

Given the young women's future role as mothers that will influence their children's education and career choices, IVET policies should encourage young female to participate in IVET. This cannot be done merely by creating more sewing, culinary, waitress and other traditionally female vocational programs. Their participation can be increased by involving them in STEM subjects during their earlier schooling. Options such as creating STEM-related extracurricular activities and school clubs that can provide additional learning opportunities for those who have math and science anxiety. In fact, a recent study (Karim, 2017) among 100 Tajik rural girls from two southern districts showed that 65% of them do not have interest in STEM and 40% said because STEM subjects are difficult to learn. Therefore, increasing young women's exposure to STEM will contribute to increasing their self-esteem regarding math and science learning.

It was found that marketing, both television and newspaper, have the least amount of influence possible because they are underutilized. Given the broad coverage and captive audience of state-owned television stations, IVET lyceums can use television programs to reach potential students directly. This way students receive more complete information about lyceums and occupational programs, which can help them make informed decisions. A television program offered by lyceums may supplant often

ill-informed advice from parents, siblings, and friends. This study showed that the hands-on experience aspect of IVET does influence students. Therefore, television programs and advertisement that capture this aspect would increase students and parents' awareness of IVET.

To improve students' awareness about the various programs offered in the IVET lyceums and make their career decision-making process easier, the National Career Guidance and Vocational Education Development Center under the Ministry of Labor, Employment, and Migration needs to open its branch offices at the district levels so that it can cover more schools and students. Moreover, in 2011, the government of Tajikistan authorized a Career Guidance Development Program (CGDP) for the period of 2011-2015 (Government of Tajikistan, 2011). It is recommended that an evaluation of the CGDP's action plan implementation to be conducted and based on the conclusions the program to be reauthorized for a new period.

Finally, there is no career counselor staff in Tajikistan's schools and the role is informally played by teachers, parents, and other people. Studies stress the importance of career counseling and guidance (Carson & Reed, 2015; Cunanan, 1995; Hierbert & Borgen, 2002; Watts & Sultana, 2004) and the role of counselors in influencing career choice (Haney, 2002; Gaunt, 2005; OECD, 2010) for students. Thus, it is recommended that the Ministry of Education initiates the training of career counselors and subsequently create such positions in schools.

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APPENDICES

APPENDIX A

REQUEST LETTER TO THE MINISTRY OF LABOR, MIGRATION, AND EMPLOYMENT OF THE REPUBLIC OF TAJIKISTAN

(English version)

Ministry of Labor, Employment,
and Migration of the Republic of Tajikistan

My name is Farid Safarmamad and I am a citizen of Tajikistan and alumnus of the Tajik State Pedagogical University. I am currently a doctoral student at Old Dominion University in the USA. I am pursuing a PhD in Education with a Concentration in Occupational and Technical Studies and an Emphasis in Career/Vocational and Technical Education. My dissertation is titled: "Factors that influence students' decisions to enroll in IVET lyceums in Tajikistan".

In order to answer my dissertation research questions, I need to survey students enrolled in IVET lyceums in Tajikistan. In addition, prior to conducting the survey, I need preliminary information such as the list of IVET schools, programs they offer, and the number of students that are enrolled after 9th grade and 11th grade.

Therefore, by writing this letter, I am kindly requesting your permission to access the aforementioned information at the Ministry and school levels and subsequently to conduct the survey at randomly selected schools. The survey will not reveal any personal information of the participating students. The survey questions are attached here. Participation is voluntary. The findings of this study could assist both the Ministry and schools in policy making, students' enrollment and career development.

If further information is needed, you may contact me at the email below or my Program Director, Dr. John Ritz, at jritz@odu.edu or +1 757 683-4305.

Sincerely,

Farid Safarmamad

PhD student
STEMP Education and Professional Studies
Old Dominion University
fsafarma@odu.edu

(Tajik version of Appendix A)

Ба Вазорати меҳнат, муҳоҷират ва
шуғли аҳолии Ҷумҳурии Тоҷикистон

Ман Фарид Сафармамад, шаҳрванди Ҷумҳурии Тоҷикистон, феълан унвонҷӯи давраи доктории (PhD) Донишгоҳи Олд Доминиони иёлати Вирҷинияи ИМА ҳастам. Беш аз се сол мешавад ки дар донишгоҳи мазкур дар самти таҳсилоти ибтидоии касбӣ (ТИК) таҳсил мекунам.

Ҳамзамон мехостам Шуморо дар ҷараён гузорам, ки ният дорам пажуҳишеро барои кори дипломиам дар соҳаи таҳсилоти ибтидоии касбии (ТИК) Тоҷикистон анҷом диҳам ва дар рушди соҳаи ТИК саҳмгузор бошам. Номи мавзӯи кори илмиам “Омилҳои таъсиргузор дар интихоби муассисаҳо ва ихтисосҳои ТИК аз тарафи донишомӯзон” мебошад. Барои анҷом додани ин пажуҳиши илмӣ бароям зарур аст аввалан муассисаҳои ТИК-ро тариқи интихоби тасодуфӣ интихоб намоям ва байни донишомӯзон ин муассисаҳо назарсанҷӣ гузаронам. Биноан, пеш аз гузарондани назарсанҷӣ бароям маълумоти аввалия ба монанди номгӯи муассисаҳои ТИК, номгӯи касбҳо ва ихтиссосҳое, ки дар ин муассисаҳо таълим дода мешаванд ва инчунини дигар шумораи донишомӯзоне, ки баъд аз хатми синфи 9 ва синфи 11 дохил шуданд.

Бинобар ин, бо ин мактубам аз Шумо эҳтиромона хоҳиш менамоям, ки барои дастрасӣ ба маълумоти аввалияи номбаршуда ва баъдан барои гузаронидани ин назарсанҷӣ дар муассисаҳои интихобшуда мусоидат намоед. Ба иттилои Шумо мерасонам, ки ин назарсанҷӣ маълумоти шахсии донишомӯзони ширкаткунандаро ошкор намекунад ва ба Шумо итминон медиҳам, ки ҳамаи маълумоти ҷамъоваришуда танҳо барои пажуҳиши мазкур истифода мешавад. Иштироки донишомӯзон танҳо бо хоҳиши худашон сурат мегирад. Саволномаи назарсанҷӣ замима мегардад.Умедворам, ки натиҷа ва хулосаи ин пажӯҳиш метавонад барои рушди соҳаи ТИК саҳмгузор бошад.

Барои иттилои бештар метавонед бо ман тариқи почтаи электрониам ё роҳбари илмиам, Доктор Ҷон Ритс (jritz@odu.edu ё тел. +1 757 683-4305.) дар тамос шавед.

Бо эҳтиром,

Фарид Сафармамад
Донишгоҳи Олд Доминион,
Норфолк, Вирҷиния, ИМА
fsafarma@odu.edu

APPENDIX B

PERMISSION LETTER (IN TAJIK) FROM THE

MINISTRY OF LABOR, MIGRATION, AND EMPLOYMENT OF THE REPUBLIC OF TAJIKISTAN

Вазорати меҳнат, муҳоҷират ва шуғли аҳолии
Ҷумҳурии Тоҷикистон

[illegible]

06.02.2017. № 9/304

Ба унвонҷӯи Донишгоҳи
Олд Доминиони Иёлоти Муттаҳидаи
Иттиҳоди Мутаҳидаи Амрико
Фарид Сафармамад

Вазорати меҳнат, муҳоҷират ва шуғли аҳолии Ҷумҳурии Тоҷикистон мактубро аз 24 январи соли 2017, №nu/33 баррасӣ намуда, чунин иттилоъ медиҳад.

Ба маълумот мерасонем, ки барои ҷамъоварии маводҳо бо мақсади таҳқиқи илмии рисолаи номзадӣ дар мавзӯи «Омилҳои таъсиргузор дар интихоби муассисаҳо ва ихтисосҳои таҳсилоти ибтидоии касбӣ аз тарафи донишомӯзон» истифодабарӣ аз сомонаи Вазорати меҳнат, муҳоҷират ва шуғли аҳолии Ҷумҳурии Тоҷикистон «mehnat.tj» ва аз мутахассисони Раёсати таҳсилоти ибтидоии касбӣ ва таълими калонсолон дастрас намоед.

Ҳамзамон метавонед барои ҷамъоварии мавод аз бойгонии Вазорати маориф ва илми Ҷумҳурии Тоҷикистон истифода баред.

Муовини Вазир [signature] А. Мирзозода

(Verified Translation of the Permission Letter in Appendix B)

MINISTRY OF LABOR, EMPLOYMENT, AND MIGRATION

OF THE REPUBLIC OF TAJIKISTAN

(Translation of the Research Permission Letter)

February 6th, 2017, No 9/304

Farid Safarmamad
Ph.D. student
Old Dominion University
Norfolk, Virginia, USA

The Ministry of Labor, Employment, and Migration of the Republic of Tajikistan have considered your letter from January 24th 2017 and informs you of the following.

The Ministry permits you to conduct your research survey for your dissertation titled "Factors influencing students' decision to enroll in IVET schools and programs in Tajikistan" as well as to collect preliminary data from the Ministry's website (mehnat.tj) and staff of the Department of IVET and adult training.

In addition, you can access preliminary data through the archive of the Ministry of Education and Science of the Republic of Tajikistan.

Deputy Minister A. Mirzozoda

ТАРҶУМА ДУРУСТ АСТ
ПЕРЕВОД ВЕРЕН
TRANSLATION IS CORRECT
07.02.2018

APPENDIX C

OLD DOMINION UNIVERSITY'S

HUMAN SUBJECTS INSTITUTIONAL REVIEW BOARD

LETTER OF APPROVAL

Gmail **Farid Safarmamad <farid.safarmamad@gmail.com>**

Fwd: IRBNet Board Action

2 messages

Kosloski, Mickey <mkoslosk@odu.edu> Fri, Mar 16, 2018 at 2:30 PM
To: "SAFARMAMAD, FARID" <fsafa001@odu.edu>

Finally. Go forth and collect data!

Mickey Kosloski
Sent from my T-Mobile 4G LTE device

------ Original message------
From: Danielle Faulkner
Date: Fri, Mar 16, 2018 1:15 PM
To: Kosloski, Mickey;
Cc:
Subject:IRBNet Board Action

Please note that Old Dominion University Institutional Review Board has taken the following action on IRBNet:

Project Title: [1180995-2] Factors that influence students' decision to enroll in initial vocational education and training (IVET) lyceums in Tajikistan.
Principal Investigator: Michael Kosloski, PhD

Submission Type: New Project
Date Submitted: February 22, 2018

Action: APPROVED
Effective Date: March 16, 2018
Review Type: Expedited Review

Should you have any questions you may contact Danielle Faulkner at dcfaulkn@odu.edu.

Thank you,
The IRBNet Support Team

https://na01.safelinks.protection.outlook.com/?url=www.irbnet.org&data=01%7C01%7Cmkoslosk%40odu.edu%7C751ee3df94e34626a39308d58b617242%7C48bf86e811a24b8a8cb368d8be2227f3%7C0&sdata=w8zIWTNcK7h66OlhwDa2cuZLN0i7JLC2%2F7BQCdUecZ8%3D&reserved=0

Farid Safarmamad <farid.safarmamad@gmail.com> Sat, Mar 17, 2018 at 2:45 PM
To: "Kosloski, Mickey" <mkoslosk@odu.edu>

Thank you for the good news Dr. Kosloski and for your help to get this approved!

Farid
[Quoted text hidden]

APPENDIX D

MINISTRY OF LABOR, MIGRATION, AND EMPLOYMENT'S LETTER TO IVET LYCEUM'S DIRECTORS

Вазорати меҳнат, муҳоҷират ва шуғли аҳолии Ҷумҳурии Тоҷикистон

734026 ш. Душанбе, кӯчаи Алишер Навоӣ, 5/2, тел/факс 992 (37) 236-11-59, E-mail: vm-vazorat@mail.tj

аз «04» 06 с. 2018, № 9/1486

Ба директорони муассисаҳои
давлатии таълимии соҳаи
таҳсилоти ибтидоии касбӣ

Вазорати меҳнат, муҳоҷират ва шуғли аҳолии Ҷумҳурии Тоҷикистон ба маълумот мерасонад, ки унвонҷӯи Донишгоҳи Олд Доминони Иёлоти Вирҷинияи Иттиҳоди Муттаҳидаи Амрико Фарид Сафармамад рисолаи номзадии худро дар мавзӯи «Омилҳои таъсиргузор дар интихоби муассисаҳо ва ихтисосҳои таҳсилоти ибтидоии касбӣ аз тарафи донишомӯзон» таҳия менамояд ва бо ин мақсад 24 январи соли 2017, №Ш/33 ба вазорат муроҷиат намудааст.

Аз ин рӯ, дастур дода мешавад, ки барои ҷамъоварии маводҳо ҷиҳати таҳқиқӣ илмии рисолаи номзадиаш бо Фарид Сафармамад дар доираи санадҳои меъёрию ҳуқуқӣ хамкорӣ намоед.

Муовини Вазир А.Мирзозода

Масъули иҷро:
Раёсати таҳсилоти ибтидоии касбӣ
ва таълими калонсолон.
Тел: 236-46-64

(Verified English Translation of the Letter in Appendix D)

MINISTRY OF LABOR, EMPLOYMENT, AND MIGRATION

OF THE REPUBLIC OF TAJIKISTAN

(Translation of the Ministry's letter to the Directors of IVET lyceums)

04.06.2018, No 9/1480

To the Directors of Initial
Vocational Education and
Training Lyceums

The Ministry of Labor, Employment, and Migration of the Republic of Tajikistan informs you that doctoral student of Old Dominion University, Virginia, USA – Farid Safarmamad is conducting his doctoral research for his dissertation titled "Factors influencing students' decision to enroll in IVET lyceums and programs in Tajikistan". For this reason, he has contacted the Ministry on 24 January 2017, N III/33.

Therefore, you are authorized, within the legal framework, to facilitate and cooperate with Farid Safarmamad in collecting data for his doctoral degree.

Deputy Minister (signature) A. Mirzozoda

Responsible:

Department of Initial vocational education and adult training

Tel.: 236-46-64

I certify that this is the true translation of the original document.

Khairisho Shonusairiev

Manager of Learning Centre, Dushanbe

University of Central Asia's

School of Professional and Continuing Education

APPENDIX E

STUDENT COVER LETTER AND INFORMED ASSENT FORM

My name is Farid Safarmamad and I am a PhD student at Old Dominion University in Norfolk, VA. As part of my degree requirements, I must complete a research project in dissertation form. My research project is titled "Factors that influence students' decision to enroll in IVET lyceums in Tajikistan".

I am asking you to take part in the research study because I am trying to learn more about 1) the factors that influence students' decision to enroll in IVET lyceums; 2) the demographic of students who participate in IVET programs, and 3) the people, things, and/or events that influence their career decision-making to enroll in IVET lyceums.

If you agree, you will be asked to complete an instrument. You will be asked about your living situation, family's financial standing, your grades, parents' education level, and who or what influences your decision to enroll in IVET. Answering these questions will take about 20 minutes. You should not put your name on the instrument.

You do not have to participate in this study and there are no consequences if you choose not to. Even if you start, you can stop later if you want and you may ask questions about the study at any time. If you decide to be in the study, your responses will be kept completely anonymous.

Signing below means that you have read this form or have had it read to you and that you are willing to be in this study.

Signature of participant_____

Participant's printed name_____

Signature of investigator_____

Date_____

APPENDIX F

PARENTS COVER LETTER AND CONSENT FORM

January 2018

Dear Parents,

My name is Farid Safarmamad and I am a PhD student at Old Dominion University in Norfolk, VA. I am conducting a study titled " Factors that influence students' decision to enroll in initial vocational education and training (IVET) lyceums in Tajikistan." To conduct this study, I need the participation of students enrolled in IVET lyceums. The attached 'Permission for Student's Participation" form describes the study and asks your permission for your student to participate.

Please carefully read the attached "Permission for Student's Participation" form. It provides important information for you and your student. If you have any questions pertaining to the attached form or to the research study, please feel free to contact me at fsafarma@odu.edu or (757) 679-9354 or Dr. Michael Kosloski, Associate Professor, Old Dominion University at (757) 683-4305.

After reviewing the attached information, please return a signed copy of the "Permission for Student's Participation" form to your student's teacher in the return envelope provided if you are willing to allow your student to participate in the study. Even when you give consent, your student will be able to participate only if he/she is willing to do so. The study is voluntary and you can choose not to have your student participate.

I thank you in advance for taking the time to consider your student's participation in this study.

Farid Safarmamad
Email: fsafarma@odu.edu

or

Dr. Michael Kosloski

Old Dominion Univesity

mkosloski@odu.edu

APPENDIX G

ORIGINAL INSTRUMENT

Survey of Influencing Factors and Perceptions

Wexford-Missaukee Area Career Technical Center

Survey of Influencing Factors and Perceptions
Wexford-Missaukee Area Career Technical Center

Please respond to the following questions to the best of your ability. Do not put your name anywhere on the form so that your responses remain completely anonymous. You may choose not to answer any question by simply leaving it blank. The survey should take less than 10 minutes to complete.

The survey is divided into four sections:

I. *Student information*
II. *Perceptions of the Career Technical Center*
III. *People who influenced you*
IV. *Other factors that influenced you*

Please complete all four sections of the survey by checking the most appropriate box and/or circling the appropriate item.

Part I: Student information. Place a check mark next to the most appropriate response.

1. What is your gender?

□ Male □ Female

2. With whom do you live? *(select only one)*

□ Both your mother and your father
□ Your mother and a stepfather
□ Your father and a stepmother
□ With father only
□ With mother only
□ Your mother some of the time and your father some of the time
□ With other relatives
□ With other adults

3. What grades do you usually get? *(select only one)*

□ Mostly A's
□ Mostly A's and B's
□ Mostly B's
□ Mostly B's and C's
□ Mostly C's
□ Mostly C's and D's
□ Mostly D's
□ Mostly D's and F's

4. For most of the time in your family, which of the following statements best describes your family situation? *(select only one)*

- ☐ Your family has a hard time getting enough money for food, clothing, and basic living costs
- ☐ Your family has just enough money for food, clothing, and basic living costs
- ☐ Your family has a few problems buying what your family needs
- ☐ Your family has no problems buying what your family needs and is able to buy special things

5. Are you currently a student at the Career Technical Center?

- ☐ Yes
- ☐ No (if No, skip question #6)

6. If you are currently enrolled at the Career Technical Center, place a check mark next to the program you are in. *(select only one)*

Business, Management, Marketing, and Technology Pathway

- ☐ Business Services Technology
- ☐ Hospitality, Retailing and Entrepreneurship

Engineering/Manufacturing and Industrial Technology Pathway

- ☐ Automotive Service
- ☐ Building Trades
- ☐ Electronics
- ☐ Heavy Equipment Mechanics
- ☐ Machine Trades
- ☐ Robotics and Automation
- ☐ Small Engines
- ☐ Welding and Metal Fabrication

Health Sciences Pathway

- ☐ Allied Health Technology

Human Services Pathway

- ☐ Cosmetology

Natural Resources and Agriscience Pathway

- ☐ Agriscience and Natural Resources

Part II. *Perceptions of the Career Technical Center.* To what extent do you agree or disagree with the following 6 statements. Circle the appropriate number.

I believe that the Career Technical Center is designed to serve students:	Strongly Disagree	Disagree	Agree	Strongly Agree	Don't Know
(1) who plan to go to work immediately after high school.	1	2	3	4	5
(2) who plan to join the military immediately after high school.	1	2	3	4	5
(3) who plan to go to college immediately after high school.	1	2	3	4	5
(4) who struggle academically.	1	2	3	4	5
(5) who are discipline problems.	1	2	3	4	5
(6) of all ability levels.	1	2	3	4	5

Part III. *People who influenced you.* To what extent did the following 8 people either encourage or discourage you to attend, or not to attend, the Career Technical Center. Complete the ***left side*** if you ***do not*** attend; complete the ***right side*** if you ***do*** attend. Circle the appropriate response.

Complete this side if you <u>do not</u> attend the Career Technical Center **How much did each encourage you <u>NOT</u> to attend?**						***<u>Possible Influential People</u>***	**Complete this side if you <u>do</u> attend the Career Technical Center** **How much did each encourage you to attend?**				
	Unsure	Not at all	Not that much	A little	A lot	(1) High school counselor		Unsure	Not at all	Not that much	A little	A lot
	Unsure	Not at all	Not that much	A little	A lot	(2) Any high school teachers		Unsure	Not at all	Not that much	A little	A lot
	Unsure	Not at all	Not that much	A little	A lot	(3) High school principal		Unsure	Not at all	Not that much	A little	A lot
Do Not Have	Unsure	Not at all	Not that much	A little	A lot	(4) Mother / female guardian	Do Not Have	Unsure	Not at all	Not that much	A little	A lot
Do Not Have	Unsure	Not at all	Not that much	A little	A lot	(5) Father / male guardian	Do Not Have	Unsure	Not at all	Not that much	A little	A lot
Do Not Have	Unsure	Not at all	Not that much	A little	A lot	(6) Brother or sister	Do Not Have	Unsure	Not at all	Not that much	A little	A lot
	Unsure	Not at all	Not that much	A little	A lot	(7) Friends		Unsure	Not at all	Not that much	A little	A lot
	Unsure	Not at all	Not that much	A little	A lot	(8) Career Tech Center staff person		Unsure	Not at all	Not that much	A little	A lot

Part IV. Other *factors that influenced you.* To what extent did the following 9 factors encourage or discourage you to attend, or not to attend, the Career Technical Center. Complete the ***left side*** if you ***do not*** attend; complete the ***right side*** if you ***do*** attend. Circle the appropriate response.

Complete this side if you do not attend the Career Technical Center How much did each encourage you NOT to attend?						***Possible Influential Factors***	Complete this side if you do attend the Career Technical Center How much did each encourage you to attend?					
Didn't attend	Unsure	Not at all	Not that much	A little	A lot	(1) 10th grade tour	Didn't attend	Unsure	Not at all	Not that much	A little	A lot
Didn't attend	Unsure	Not at all	Not that much	A little	A lot	(2) Field trip to CTC	Didn't attend	Unsure	Not at all	Not that much	A little	A lot
Don't have one	Unsure	Not at all	Not that much	A little	A lot	(3) High school career plan (EDP)	Don't have one	Unsure	Not at all	Not that much	A little	A lot
Didn't see any	Unsure	Not at all	Not that much	A little	A lot	(4) Marketing materials (brochures, videos)	Didn't see any	Unsure	Not at all	Not that much	A little	A lot
Didn't see it	Unsure	Not at all	Not that much	A little	A lot	(5) CTC website	Didn't see it	Unsure	Not at all	Not that much	A little	A lot
	Unsure	Not at all	Not that much	A little	A lot	(6) Time spent traveling to the CTC		Unsure	Not at all	Not that much	A little	A lot
	Unsure	Not at all	Not that much	A little	A lot	(7) Spending half of your day away from the high school		Unsure	Not at all	Not that much	A little	A lot
	Unsure	Not at all	Not that much	A little	A lot	(8) Receiving a waiver of high school credit for completing a CTC program		Unsure	Not at all	Not that much	A little	A lot
	Unsure	Not at all	Not that much	A little	A lot	(9) Receiving college credit for completing a CTC program		Unsure	Not at all	Not that much	A little	A lot

Thank you for taking the time and effort to respond to this survey. Your input will allow the Career Technical Center to better meet the needs of area students.

APPENDIX H

REQUEST AND PERMISSION

TO USE AND MODIFY SURVEY INSTRUMENT by DR. DAVID GAUNT

From: "Safarmamad, Farid" <fsafarma@odu.edu>
To: "drdavidgaunt@yahoo.com" <drdavidgaunt@yahoo.com>
Sent: Saturday, August 19, 2017 9:52 AM
Subject: FW: Request

From: Safarmamad, Farid
Sent: Thursday, June 8, 2017 5:40 PM
To: drdavidgaunt@yahoo.com
Subject: FW: Request

From: Safarmamad, Farid
Sent: Tuesday, April 11, 2017 11:19 PM
To: david.gaunt@wmich.edu
Subject: Request

Dear Dr. Gaunt:

My name is Farid Safarmamad and I am a doctoral student in the Occupational and Technical Studies program at Old Dominion University in Norfolk, Virginia. Currently, I am working on my dissertation, which is titled "*Factors influencing Tajikistani students to enroll in initial vocational education and training (IVET) lyceums*". The research will be conducted in my home country – the Republic of Tajikistan.

While reviewing the literature, I found your article and your dissertation study – High School Seniors' Perception of Career and Technical Education and Factors Influencing Their Decision to Attend an Area Career and Technical Center – which I cited. I have found your study highly relevant to the objectives of my research. I would need to make some minor adaptations given the geographic of my research.

Hereby, I would kindly request your permission to use your instrument: Survey of Influencing Factors and Perceptions Wexford-Missaukee Area Career Technical Center for my data collection in Tajikistan. If further inquiries are needed from my side, I would be glad to provide. I can be reached through my contacts provided below.

I thank you for considering my request and looking forward to your kind response.

Sincerely,

Farid Safarmamad
Doctoral student and Graduate Teaching Assistant

From: David Gaunt, PhD [mailto:drdavidgaunt@yahoo.com]
Sent: Saturday, August 19, 2017 11:03 PM
To: Safarmamad, Farid <fsafarma@odu.edu>
Subject: Re: Request

Farid:

I find it highly complementary to be asked for permission to use my instrument, and I wholeheartedly support your research in that regard. Further research into this topic is critical, regardless of geography, and your need to alter the instrument to better accommodate your particular needs is acknowleged and granted.

I would be interested to read your results upon completion. I will still be available at this email address.

Dave

David Gaunt, PhD
drdavidgaunt@yahoo.com

APPENDIX I

SURVEY OF FACTORS THAT INFLUENCE STUDENTS' DECISION TO ENROLL IN INITIAL VOCATIONAL EDUCATION AND TRAINING (IVET) LYCEUMS IN TAJIKISTAN

PART I. STUDENT DEMOGRAPHIC INFORMATION

1. **What is your gender?**
   - □ Male
   - □ Female
2. **What is your age?**
   - □ 15-16
   - □ 17-18
   - □ 19-20
   - □ 21-22
   - □ 23 +
3. **Which best describes your place of living?**
   - □ Rural
   - □ Urban
4. **What grades did you get on the following final exams at the end of 9th grade? (Only those who completed 9th grade)**

Tajik Language	Algebra	Tajik History	Russian Language	Geography	Other_____
□ 5	□ 5	□ 5	□ 5	□ 5	□ 5
□ 4	□ 4	□ 4	□ 4	□ 4	□ 4
□ 3	□ 3	□ 3	□ 3	□ 3	□ 3
□ 2	□ 2	□ 2	□ 2	□ 2	□ 2

5. **What grades did you get on the following final exams at the end of 11th grade? (Only those who completed 11th grade)**

Tajik Literature	Algebra	Tajik History	English Language	Russian Language	Science
□ 5	□ 5	□ 5	□ 5	□ 5	□ 5
□ 4	□ 4	□ 4	□ 4	□ 4	□ 4
□ 3	□ 3	□ 3	□ 3	□ 3	□ 3
□ 2	□ 2	□ 2	□ 2	□ 2	□ 2

6. **What is your mother's highest level of education?**
   - □ General basic education (9th grade)
   - □ General secondary education/high school (11th grade)
   - □ IVET school
   - □ Secondary VET
   - □ University

7. **What is your father's highest level of education?**
   - □ General basic education (9th grade)
   - □ General secondary education/high school (11th grade)
   - □ IVET school
   - □ Secondary VET
   - □ University

8. **Where do you live during the semester?**
   - □ In my house
   - □ In the lyceum's dormitory
   - □ In a rented house
   - □ In my relatives' house

9. **Which of the following statements best describes your family situation? (select only one)**
   - o Your family has a hard time getting enough money for food, clothing, and basic living costs
   - o Your family has just enough money for food, clothing, and basic living costs
   - o Your family has a few problems buying what your family needs
   - o Your family has no problems buying what your family needs and is able to buy special things

10. **Which of the following member(s) of your family is(are) currently in migration?**
    - o Father
    - o Mother
    - o Brother
    - o Sister
    - o None

PART II. ENROLLMENT STATUS

Please place a check mark next to the appropriate response.

1. **After which grade of general secondary school did you enroll in IVET lyceum?**
   - □ 9th grade
   - □ 11th grade

2. **In which year you are currently studying?**
   - □ Year 1
   - □ Year 2
   - □ Year 3

3. **What is the duration of your program?**
   - □ 3 years
   - □ 2 years
   - □ 1 year
   - □ Short-term course (1, 3, and 6 months)

4. **Which program you are currently enrolled in? Please place a check mark next to the program you are in.** (If your program is not in the list, please type in the blank space)

Cluster	Programs
Automobile & Transportation	□ Auto mechanic (engine repair) □ Auto mechanic (electrician) □ Driver □ Truck driver □ Trolleybus driver □ Assistant locomotive machinist □ Assistant machinist of diesel trains □ Railroad cashier □ Conductor of passenger carriage □ Special freight forwarder □ Electrician of sound system and railroad signal □ Other_____
Business	□ Accountant □ Book-keeper □ Other_____
Construction	□ Carpenter □ Wood carving □ Architectural plastering □ Restorer of plaster/gypsum products

	☐ Painter ☐ Plumber ☐ Brick layer ☐ Crane operator ☐ Tiler ☐ Roofer (steel sheet) ☐ Other_____
Information Technology	☐ Computer Operator ☐ Radio mechanic ☐ TV mechanic/repairer ☐ Cable man – welder ☐ Electrician of telephone line station ☐ Telephone operator ☐ Other_____
Manufacturing & Industrial	☐ Electrician ☐ Gas welder ☐ Electric welder ☐ Chemical lab technician ☐ Lathe operator ☐ Sales equipment mechanic ☐ Miner ☐ Lab technician – analyst of dust/fervor ☐ Lab technician of chemical production ☐ Other_____
Family & Consumer Science (Service Sector)	☐ Cook-confectioner ☐ Tour operator ☐ Tourism/travel agent ☐ Guide ☐ Cashier ☐ Food products seller ☐ Non-food product seller ☐ Waiter ☐ Restaurant manager ☐ Waiter-bartender ☐ Hotel administrator ☐ Booking Agent ☐ Hairdresser ☐ Barber ☐ Tailor ☐ Fashion designer ☐ Cutter ☐ Embroiderer ☐ Costume designer ☐ Shoe repairer ☐ Sewer

	☐ Decorative work specialist ☐ Weaver of cotton, silk, and wool products ☐ Other_____
Agriculture	☐ Mechanic of agricultural machines and equipment ☐ Tractor operator ☐ Bee keeping ☐ Fruits and vegetable farming ☐ Woodsman/forester-Driver ☐ Paramedic veterinary ☐ Plant breeder ☐ Other_____

PART III. INFLUENCING FACTORS

1. **To what extent did the following people, events, or factors, influenced your decision to enroll in IVET lyceum?**

Influences		How much did each influence your decision to enroll in IVET lyceum?				
		1	2	3	4	5
		Not At All	A Little	Unsure	Not That Much	A Lot
1.	School teacher					
2.	Class supervisor					
3.	School director					
4.	Mother					
5.	Father					
6.	Brother or Sister					
7.	Relative(s)					
8.	Friend(s)					
9.	Open door event at IVET lyceum					
10.	To avoid military service					
11.	Studying in IVET is easier					
12.	IVET lyceums provide hands-on experience					
13.	Free food in lyceum					
14.	Free dormitory					
15.	Want to find a job sooner					
16.	IVET lyceum is close to home					
17.	Duration of study in IVET lyceum					
18.	TV program about IVET lyceum					
19.	Marketing materials (newspaper, brochures,)					
20.	Education fair					

2. To what extent did the following people, events, or factors, influenced your decision to choose the vocational program you are studying?

Influences		How much did each influence your decision to enroll in IVET program?				
		1	2	3	4	5
		Not At All	A Little	Unsure	Not That Much	A Lot
1.	School teacher					
2.	Class supervisor					
3.	School director					
4.	Mother					
5.	Father					
6.	Brother/Sister					
7.	Relatives					
8.	Friend(s)					
9.	Duration of the program					
10.	Prior experience in this field					
11.	Want to work in this field after program completion					
12.	Better job opportunities in this field					
13.	Higher salary paid in this field					
14.	Better opportunity to start a small business in this field					
15.	A TV program /advertisement about this IVET program					
16.	Marketing materials (brochures, newspaper, etc.)					

PART IV: ADDITIONAL INFORMATION

1. **What do you plan to do after completing your study?**
   - ☐ I plan to find a job in my field of study
   - ☐ I plan to go to Russia to work in any field
   - ☐ I plan to go to university
   - ☐ Not sure what to do

2. **How much confidence do you have in that you will find your future job related to your current program?**

Not at all	A little	Can't say anything	Not that much	Very much
1	2	3	4	5

3. **Are you aware of the services provided by the National Career Guidance Center?**
   - ☐ Yes
   - ☐ No

4. **Have you ever thought about changing your program of study?**
   - ☐ Yes
   - ☐ No

   If Yes, why (short answer) _____
   _____

5. **Have you ever thought about quitting your study?**
   - ☐ Yes
   - ☐ No

   If Yes, why (short answer) _____
   _____

Thank you for taking the time and effort to respond to this survey!

APPENDIX J

INSTRUCTIONAL SCRIPT FOR SURVEY ADMINISTIRATION

Please distribute the student packet to all students who agreed to participate in the study. Once all students have the packet, read the following script aloud:

You are participating in a research project entitled “Factors that influence students’ decision-making to enroll in initial vocational education and training (IVET) lyceums in Tajikistan”. Farid Safarmamad, a doctoral student at Old Dominion University is conducting the study. Farid will be using this information as the basis for his dissertation research.

The instrument consists of four parts that solicit information from IVET lyceums’ students regarding factors that influence their decision-making to enroll in IVET lyceums. The format of the instrument either check box selection or multiple choice. Please complete the survey on your own, providing thoughtful responses to each question.

The instruments are not coded in any particular way, thus the responses will be completely anonymous. Do not put your name anywhere on the form. The instrument should take 15-20 minutes to complete. You may choose not to answer any question by simply leaving it blank. You may also choose not to participate at all, and return the blank form. There is no penalty for not participating. The results will only be reported in aggregate form, which will ensure that it will not be possible to identify any individual participant by reading the report. Return of the completed packet indicates that you are also agreeing that the responses can be used in statistical calculations for the research being conducted.

Thank you again for your participation!

VITA

Farid Safarmamad
4100 Education Building
Norfolk, Virginia 23529
E-mail: fsafa001@odu.edu

EDUCATION

- Ph.D. Education, Occupational & Technical Studies, Old Dominion University, 2019. Norfolk, Virginia, USA

- M.S. Education, Career & Technical Education, Old Dominion University, 2010, Norfolk, Virginia, USA

- Diploma of Specialist. English Language Teaching, Tajik State Pedagogical University, 2005, Dushanbe, Tajikistan

PROFESSIONAL EXPERIENCE

- Research Assistant, Department of Teaching & Learning, Old Dominion University, Norfolk, VA, USA. *(August 2017-May 2018)*

- Teaching Assistant & Instructor, Department of STEM and Professional Studies, Old Dominion University, Norfolk, VA, USA. *(August 2013-July 2017)*

- Project Coordinator, Cross-border vocational education project at School of Professional and Continuing Education, University of Central Asia, Khorog, Tajikistan. *(November 2011-July 2013)*

- Intern, European Training Foundation (ETF), Turin, Italy. *(August 2010-March 2011)*

- Project Officer, Vocational Education and Training Support Foundation, Dushanbe, Tajikistan. (June 2004-June 2008).