From Aspirations to Occupations:

The Role of Information in Educational and Labor Market Decisions in Moldova

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Acknowledgments

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List of acronyms

ANOFM	Moldova's National Employment Agency (Agenţia Naţionala pentru Ocupare a Forţei de Muncă)
BEEPS	Business Environment and Enterprise Performance Surveys, World Bank
ECA	Europe and Central Asia
FEO	Federal Employment Office, Germany
GNI	Gross national income
ILO	International Labour Organization
LFS	Labor Force Survey
LMO	Labor market observatory
MJSDS	Moldova Job and Schooling Decisions Survey
NBS	National Bureau of Statistics
NCEM	National Confederation of Employers of Moldova
NEET	Neither in employment, nor in education or training
OECD	Organisation for Economic Co-operation and Development
PISA	Programme for International Student Assessment
WDI	World Development Indicators

Executive Summary

Challenge: Poor labor market outcomes in Moldova are partly explained by skills mismatches related to a lack of systematic career guidance and gaps in the labor market information students need when making educational and occupational decisions. With a rapidly aging and shrinking population and high rates of labor-related emigration, Moldova needs to ensure that the labor resources it has available are used as productively as possible. However, a large share of Moldova's adult population is not in the labor force, the transition of youth from school to work is slow, and the productivity of existing jobs is low. These problems seem to be partly related to a skills mismatch: in 2013, 40 percent of firms in Moldova cited skills as a major or severe constraint to growth, one of the highest rates in Europe and Central Asia. Current career guidance practices do not give Moldovan students adequate and systematic information for making schooling and occupational decisions. Helping young people to make more informed choices for education and jobs could have substantial benefits in improving the alignment of education with labor markets—a priority of the *Moldova 2020* strategy.

Methodology: Information sources and constraints in Moldova were assessed via a mixed-methods survey of students throughout the education cycle and of working and nonworking youth. The report focuses on gaps in information about the costs of and returns to different education pathways, including expected job characteristics. Such information gaps may prevent optimal decisions and investments. This report also looks at sources of information that are used by students who make these decisions, especially parents and teachers. The analysis in this report is based on original data from the mixed-methods (quantitative and qualitative) Moldova Job and Schooling Decisions Survey (MJSDS) collected during the 2014/2015 school year. The primary target group of the MJSDS consisted of 9th and 12th grade students facing major educational and occupational decisions. Individual interviews and focus group discussions were also conducted with collegium, professional school, and university students and with out-of-school youth, parents, and teachers.

Findings: Students consider information about Moldova's labor market to be of vital importance in their educational decisions, but current efforts to provide such information could be broadened and strengthened. Relatively early tracking, starting after 9th grade, heightens the importance of providing relevant age-appropriate educational and labor market information. Survey respondents reported that the labor market opportunities they expect are central to their educational decisions. However, the survey also revealed self-reported and objective gaps in the information students have about the labor market, implying scope for strengthening information services, which should reach not only students but also their social networks. Parents, in particular, are a main source of information and often co-decision makers for surveyed students, but they often feel unprepared to advise their children. Although many students rely on the Internet for guidance, it appears that accurate and relevant information does not reach all of them. Of particular importance is that students with less-educated parents demonstrate the highest information deficits, which may exacerbate inequality of opportunity. Moldova's current career guidance efforts are not well coordinated or implemented: a majority of survey respondents reported not having attended any career guidance activity, and few were aware of existing tools. Students interviewed considered activities that provide exposure to the labor market, such as internships, to be very useful instruments of career guidance.

Policy implications: An integrated career guidance system can provide accessible and timely information to Moldova's children and youth. The MJSDS results suggest that a comprehensive career guidance system can help to close the observed information deficits. In designing such a system, policymakers can adapt international policy experiences to Moldova's context. Policy options range from those that can be easily implemented in the short term to policies that need more preparatory steps and can only be accomplished in the longer term:

- **Short term: Make the existing education and labor market information more accessible, user-friendly, and relevant, and refine existing career guidance tools.**

- The Internet and mobile technology hold great potential for providing timely information for educational and labor market decisions. Labor market observatories, which Moldova is currently considering, can distill and disseminate information on labor market trends and projections, making it more accessible and salient for students and their advisers. Poland's regional labor market observatories could serve as an example.
- Current in-school career orientation can be made more effective by including more information about labor market trends in Moldova; the current revision of the Civic Education curriculum provides an opportunity to achieve this.
- Interaction between students and potential employers not only builds workplace competences, expands networks, and can help to facilitate future job search; it can also be a critical source of information.
- Job fairs are most helpful for students close to the transition from school to work but they can also be useful as general sources of information for students deciding between education tracks or fields of study. Austria offers an interesting example of such initiatives.
- The value of internships can be raised through better quality control and provision of more effective incentives for both students and firms. Students in some U.S. universities are required to do 2–3-semester internships, which help students move seamlessly from school to jobs.

- **Medium term: Identify the needs of children and youth and provide relevant information to them and their families.**
  - Given the pivotal role of educational choices in the 9th grade, early provision of relevant educational and career orientation and exposure to the world of work are important. The systems of Germany, Austria, and Switzerland, where career guidance activities start at age 10, provide useful references for Moldova.
  - Early identification of children's needs and provision of targeted support are instrumental in reducing inequality of career choices for young people. In the U.K., several initiatives combine mentoring and advisory services to help youth from vulnerable backgrounds overcome obstacles to accessing education and training.
  - Creative strategies can help to provide access to career guidance services when human and financial resources are limited. In Germany, in-school staff members are supported by external counselors. To reach difficult-to-serve areas, Germany, South Africa, and other countries have mobile job centers.
  - Reaching out to parents can help them advise their children on educational and occupational decisions more effectively and can help reduce inequality in access to information. In Austria, parents are an integral part of the career guidance system. In the U.K., school authorities are mandated to provide parents with information on available services and the benefits of accessing them.
- **Long term: Build up partnerships with employers and create innovative career guidance tools.**
  - Partnerships need to emphasize the role of employers. In Germany, employers have a significant role in education and training. In the U.K., nonprofit initiatives link the business community with schools.
  - Existing labor market information systems can be augmented with self-assessment and career orientation tools, and with direct links between students and employers. Bulgaria, Mexico, and the United States offer examples of online systems.

Conclusions: By removing information constraints, at relatively low cost the Government of Moldova can improve the efficiency as well as the equity of education and of the labor market. An effective system of career guidance would be anchored in strong networks, with the collaboration and coordination of numerous stakeholders and with an emphasis on exposure to the world of work as an integral part of education and training systems.

1. Introduction: Skills Matching Hindered by Gaps in Career Guidance and Labor Market Information

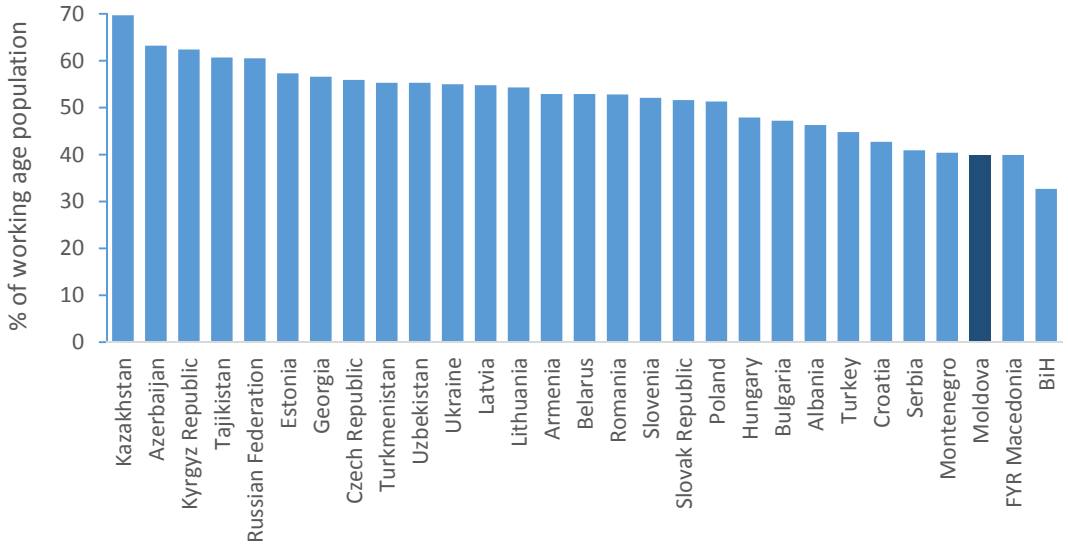
Moldova's Labor and Skills Challenges

More and better jobs will be critical for poverty reduction and shared prosperity in Moldova. With a GNI per capita of US$2,560 in 2014, Moldova is the poorest country in Europe, with some 13 percent of its people still living below the national poverty line (World Bank 2016a). The scarcity of good jobs is evidenced in the low employment rate: according to the National Bureau of Statistics (NBS), about 40 percent of adult Moldovans work, compared to 50–60 percent in most other countries in Europe and Central Asia (ECA) (Arias et al. 2014). The low productivity of the jobs that are available (Figure 1. 1 and Figure 1. 2) is the result of both a high share of jobs in low-productivity sectors, such as agriculture, trade, and tourism (NBS 2015c), and the relatively high incidence of informal workers (30 percent of all employed; Kupets and Safir 2013).

Moldova's demographic challenge makes it even more urgent that it improve its labor outcomes. The population, currently 3.5 million, is aging rapidly and shrinking in absolute terms. Demographic pressures that are reducing the working-age population relative to elderly dependents are threatening Moldova's long-term economic growth prospects and the sustainability of age-related spending on, e.g., social protection and health care. The demographic challenges due to the dynamics of births and deaths are exacerbated by high rates of labor-related emigration: in 2013, 180,000 young people aged 15–34—equivalent to half of Moldova's employed workforce in that age bracket—were either working abroad or looking for work there (NBS 2015c). The loss of young and skilled workers exacerbates the employment and productivity challenges posed by the demographic changes. Better utilization of human resources, in terms of both higher employment rates and higher worker productivity, would help to compensate for the shrinking working-age population.

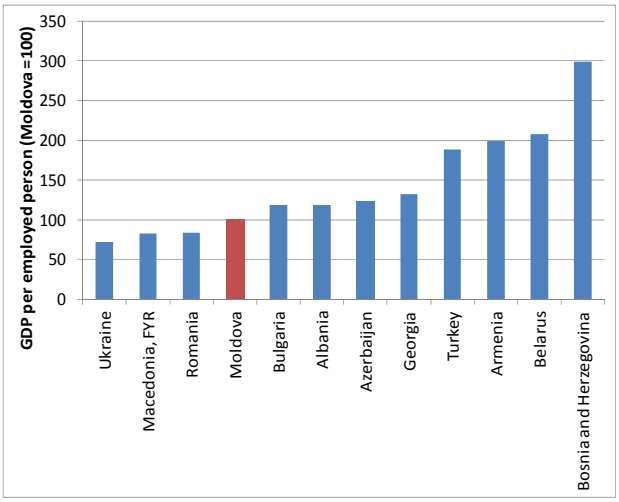
Because transition from school to work is slow, many young people are detached from the labor market. The share of young people neither in employment nor in education or training (NEET) is high in Moldova (Figure 1. 3): in 2012, of the population aged 15-29, some 33 percent of women and 23 percent of men were neither studying nor working; the gender gap reflects women's household responsibilities (Elder et al. 2015). Only 30 percent of Moldovans aged 15–29 had transitioned from education into a job they were satisfied with; 27 percent were unemployed, in unsatisfactory employment, or inactive and intending to look for work later. The remainder were either full-time students or inactive with no intention of entering the labor market. Government estimates suggest that fewer than 40 percent of graduates are hired during the first post-university year (Ministry of Labor, Social Protection and Family 2012).

Figure 1. 1: Employment-to-Population Ratios, Adults 15+, Moldova and Comparators, 2014



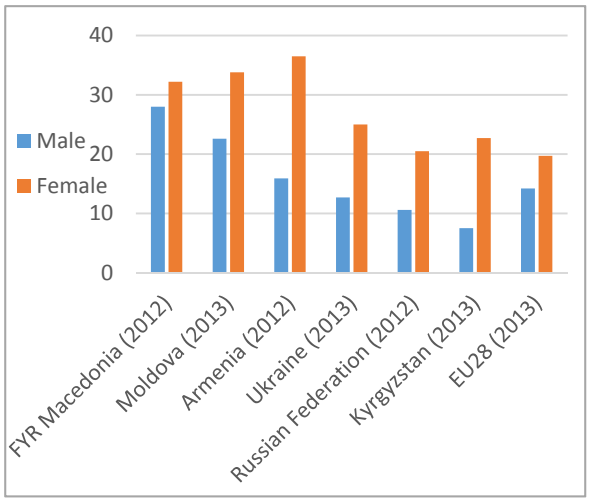
Source: World Development Indicators (WDI), ILO modeled estimates for 2014.

Figure 1. 2: Labor Productivity (GDP per Employed Person), Moldova and Comparators, 2014



Source: WDI.

Figure 1. 3: Adults Aged 15–29 not in Employment, Education or Training (NEET), Moldova and Comparators, 2012–13, Percent

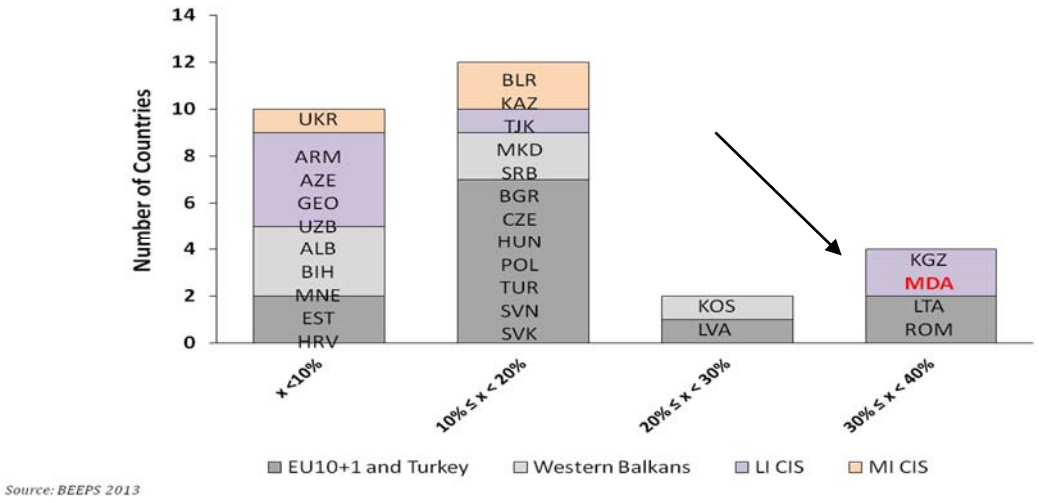


Source: Elder et al. 2015, Eurostat 2015.

Firms consider skills mismatches to be a major constraint on job creation in Moldova. Many workers in Moldova are ill-prepared for today's labor market. Recent studies by the National Confederation of Employers of Moldova (NCEM), such as "Key Constraints on the Business Environment in Moldova" (2013) and "Seven Obstacles in the Business Climate in the Republic of Moldova" (2013) report the low skills of the labor force and the current education and training system to be a key constraint on the development of private business in Moldova. When asked in 2013 about the greatest constraint to expanding their

business in Moldova, lack of adequate skills in the workforce ranked third after corruption and political instability,[1] and its importance has been rising over time. Some 40 percent of firms in Moldova cited skills deficits as a major or severe constraint to growth, one of the highest percentages in the ECA (Figure 1. 4). Employers feel strongly that labor market entrants, whether coming from vocational or general secondary school or even higher levels of education, do not possess the skills to be effective workers. In a survey of human resources managers of 55 companies operating in Moldova, about half reported problems with finding personnel. The majority considered the main problem to be a mismatch between the qualifications of young workers and the skills jobs require (UNDP 2007).

Figure 1. 4: Percentage of Firms Reporting Skills as a Major or Severe Constraint, Moldova and Comparators, 2013



Source: BEEPS 2013.

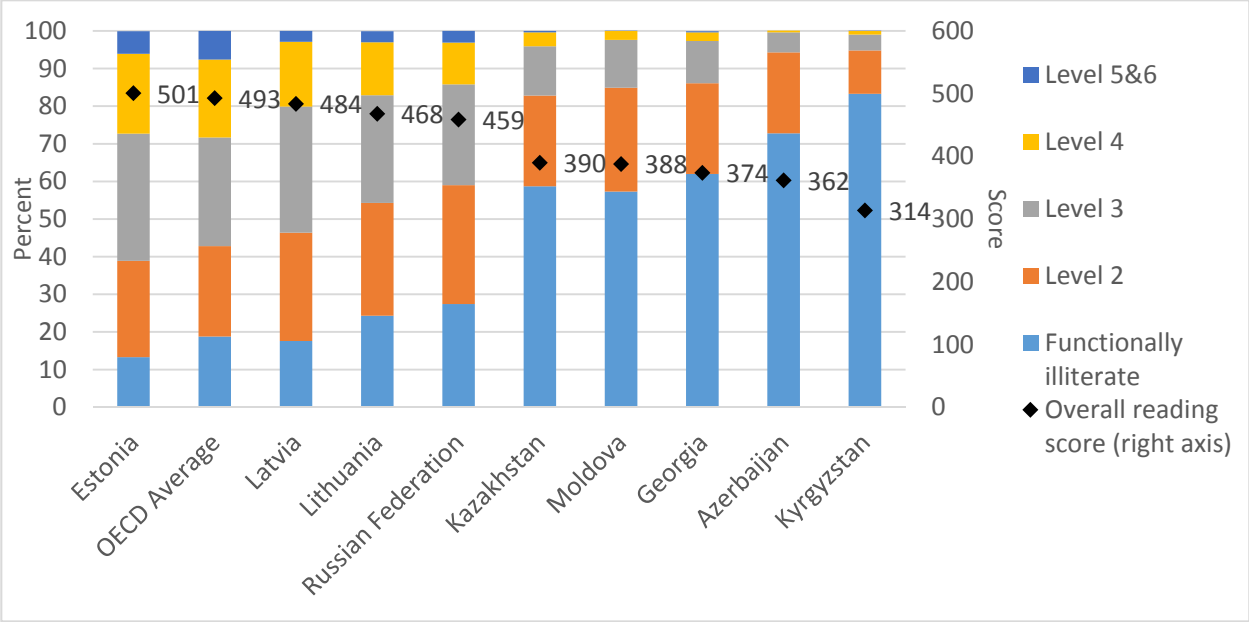
Skills mismatches may arise from problems in the education system, low investment in on-the-job training, and information constraints. Job seekers may lack the skills demanded by employers for several reasons:

- Education systems may not be encouraging the formation of skills that are relevant to the labor market. They may focus on irrelevant specializations or may not be adapting education to the demands of modern firms and markets. Indeed, in the Organisation for Economic Co-operation and Development (OECD) 2010 Programme for International Student Assessment (PISA), the scores of Moldova's 15-year-olds in reading, math, and science were among the lowest in the region (Figure 1. 5). About 60 percent lacked the basic proficiency in reading and math literacy that is necessary to participate effectively and productively in society.[2]
- Firms may not perceive sufficient incentives to increase worker productivity through on-the-job training.
- In forming their aspirations and deciding on an educational and occupational path, students may also lack information and guidance on the skills and occupations valued in the current labor

[1] As reported in the World Bank-EBRD Business Environment and Enterprise Performance Surveys (BEEPS).
[2] There are also large inequalities in student skills by socioeconomic background (performance is particularly low in rural areas) and gender gaps, particularly in reading.

market, how well they are likely to perform in different educational and occupational paths, and the resources available to help them achieve their goals.

Figure 1. 5: Proficiency in Reading, Moldova and Regional Comparators, 2010



Source: PISA 2010 results.

For Moldova, information constraints are likely to be particularly important: (1) Because Moldova is still in the midst of an economic transition, the structure of job opportunities is in flux, which makes it difficult for earlier generations to provide meaningful advice for today's young people. (2) Half of Moldova's people live in rural areas, where accessing information is likely to be more complicated. (3) Many of Moldova's emigrants work abroad in low-skilled jobs (Migration Policy Center 2013), which may not send the right signals to the next generation of workers about the need to upgrade skills in order to succeed. Helping students to make informed decisions can therefore have significant individual and society-wide payoffs because it enables them to identify pathways to fulfilling employment by facilitating the match between aspirations and expected job opportunities.

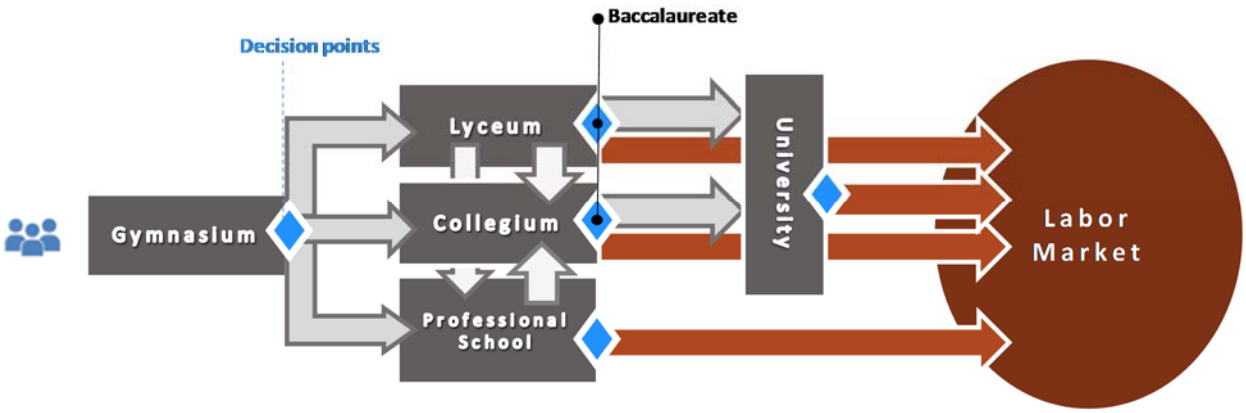
"Aligning the education system to labor market needs" is the top priority of the *Moldova 2020 Strategy* and the government is embarking on reforms to improve the quality of education and decrease labor and skills mismatches. The first long-term objective of the *Moldova 2020 Strategy* is "aligning the education system to labor market needs in order to enhance labor productivity and increase employment in the economy" (State Chancellery 2013). Based on the recognition that skills mismatches may have a variety of causes, the government is moving to improve the quality of education, build up a system of career guidance for students, and enhance the quality and availability of labor market information. This report focuses on the latter two objectives.

Current Career Guidance Efforts

Although Moldova has some policies and practices to support schooling and career decisions, the career guidance system is far from comprehensive. Moldova's students are confronted by several decision

points as they move through the education system and into the labor market (Figure 1. 6 and Box 1. 1). To support these decisions, there is an in-school career orientation curriculum, out-of-school counseling and information services, and interaction with potential employers through internships (CEDA 2015). However, there is no integrated and systematic approach across all education levels and institutions. Current programs are basic and not properly integrated, and some appear to have no links to actual needs.

Figure 1. 6: Moldova: Schooling Decision Points



Box 1. 1: Tracking in the Moldovan Educational System

The two main nodes at which Moldovan students are confronted with the need to make a significant decision are after 9th grade, when they decide between general (lyceum) or vocational (professional school or collegium) education, and after 12th grade, when they decide whether to continue their education in university or vocational schools or not.

What students expect to do after finishing 9th grade can determine their future schooling and occupational opportunities. This is especially true for those who decide to study in a professional school, as the opportunities to later switch to a different track are very limited.

After graduating from 12th grade, students may continue studying at a university, if they can pass the Baccalaureate exam, or pursue vocational education by entering a professional school or a collegium. In the 2014/2015 school year, among the 73.9 percent who continued studying after lyceum, the vast majority (87 percent) chose a university, with only 5 percent going to professional school and 8 percent to a collegium (National Bureau of Statistics 2015a).

In-school career orientation begins in grade 5 and continues for general education students through university. The general education curricula for gymnasium (grades 5–9) and lyceum (grades 10–12) students include modules on personal development and career guidance that constitute 25% of civic education courses. Career orientation is also incorporated into the curricula taught by the master teacher, including topics such as self-management and personal achievement. In addition, school psychologists are sometimes involved in providing assessments and career counseling to students. Counseling centers in the Moldova State University and the Moldova Technical University cater to students considering university and already enrolled as well as to companies interested in providing internships or jobs for

university students and graduates. These centers also provide information on the labor market and on job search techniques for internships and permanent post-graduation jobs. [3]

However, students in collegiums and professional schools currently are given little career guidance, and the use of internships can be improved. Except in some ad hoc projects (see below), the only in-class career orientation for students in collegiums and professional schools is entrepreneurship training, which has five modules on starting a business; if these students wish to continue their education or enter wage employment, they would likely benefit from more guidance to facilitate these transitions. Although internships are compulsory for university, collegium, and professional school students, they do not seem to be well-regulated or structured. The combination of matching difficulties, insufficient quality assurance, and brevity (1–3 months) reduces the value of internships in terms of exposure to the labor market.[4]

Information and counseling services are also provided by municipal centers and the National Employment Agency (ANOFM[5] offices and through ad hoc initiatives financed by development partners. Municipal Centers for Information and Vocational Orientation offer students individual and group counseling as well as training in career planning. They also provide group counseling sessions and training for parents on how to support youth career choices. Regional ANOFM offices have resource centers that provide both information and counseling services. External development partners also support initiatives in career orientation. SYSLAB has set up Career Development Centers in Chisinau and Rezina that assist graduates, the unemployed, and returning migrants through career development, counseling, etc. CARITAS has established career counseling units in vocational schools in Riscani and Ungheni (CEDA 2015). The Austrian-supported Re-Engineering Vocational Orientation and Career Counselling (REVOCC) project is currently focused on generating a more positive image of vocational training by helping the Ministry of Education to revise the career orientation curriculum and setting up three out-of-school career guidance centers in collaboration with ANOFM (CEDA 2014).

Although there has been no comprehensive evaluation of the effectiveness of any of these programs, there are indications that they could be significantly improved. The 2013 SABER Workforce Development report gave a low score to Moldova's policy for access to career guidance services (World Bank 2013). The 2015 CEDA report on career orientation collected data on career guidance from students and teachers and identified problems, such as weaknesses in classroom delivery of career guidance for general education students (CEDA 2015). Moreover, it seems that employers are not systematically involved in career guidance and provision of information, though there is sometimes interaction on an ad hoc basis. According to teachers surveyed, a minority of schools receives visits from firms in grades 5–9, and even in professional schools, visits by firms are rare and career fairs are neither regularly organized nor systematically advertised (CEDA 2015).

Role of this Report

This report sheds light on information sources and on gaps in educational and occupational choices in Moldova by presenting findings based on original data collected in 2015. To support the government in reinforcing Moldova's career guidance and information systems for education and jobs, individual interviews and focus group discussions were conducted during the 2015 school year with secondary and tertiary students, graduates, parents, and teachers. The data address, for the first time in Moldova, issues related to how students make choices, what information they use and what they lack, and what assistance

[3] http://cariera.utm.md/.
[4] From consultations with government representatives, Moldova, December 2015.
[5] Agenţia Naţionala pentru Ocupare a Forţei de Muncă

they find useful. As previously noted, one issue with career guidance in Moldova is that non-school actors are only minimally involved in such activities. This report highlights how career guidance involves numerous actors well beyond the education system by examining the sources of information that students use and extensively reviewing international experience.

The remainder of the report is organized as follows: Section 2 describes the methodology of the study, with an overview of what factors into educational and occupational choices and the data used to assess the role of information in Moldova. Section 3 presents the main findings from both quantitative and qualitative data. Section 4 discusses the policy implications of the findings and presents examples from other countries of systematic educational information and career guidance that could be useful in designing reforms in Moldova.

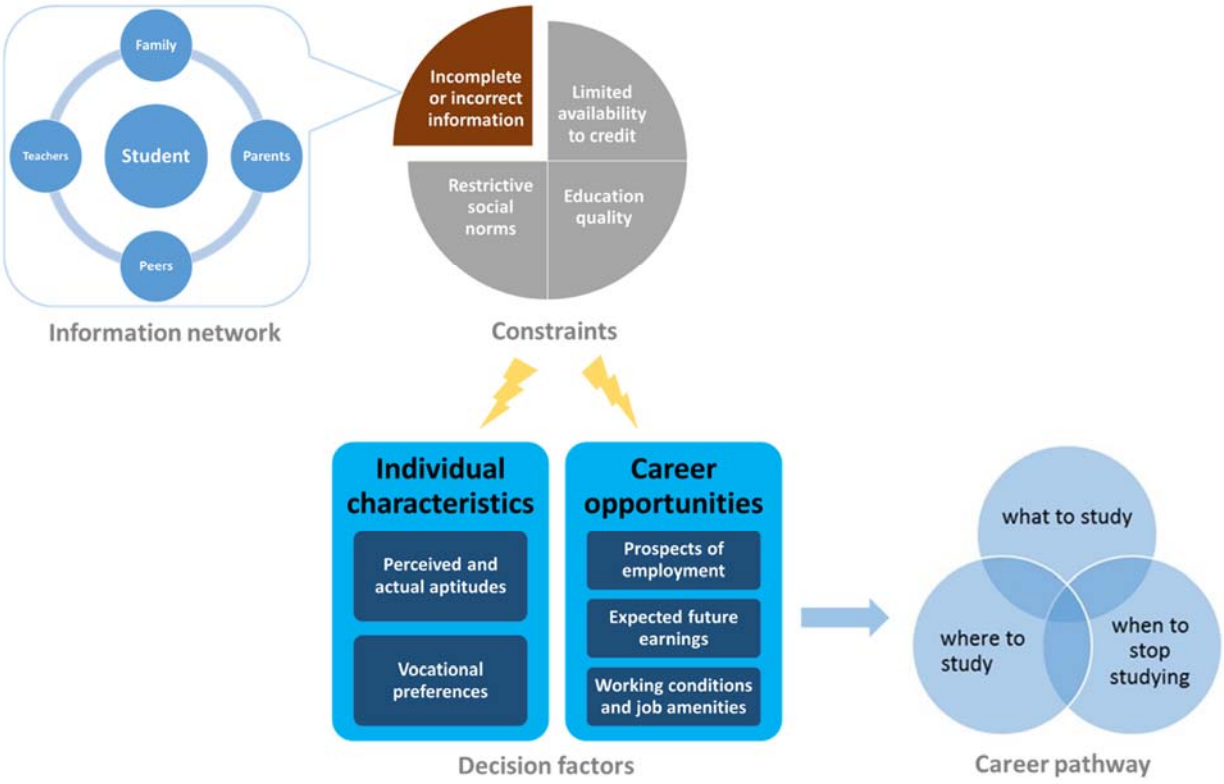
2. Methodology: Assessing the Role of Information in Educational and Career Decisions in Moldova

How Education and Career Decisions Are Made

During their schooling, students make three related decisions: where to study, what to study, and when to stop studying. The educational pathways in a country determine the menu of educational options open to students thinking of *where to study*—in a general or vocational education track and in a specific educational institution. *What to study*—the field of study—is a decision shaped throughout one's upbringing and can be related to both preferences and expected earnings. The decision on *when to stop studying* is related mainly to the choice of occupation and the optimal timing for entering the labor market, but it can also be driven by such factors as the need to generate income or to provide care to family members.

The analytical framework used for this report considers the main factors behind educational and career decisions and the main intervening actors. The value of a certain career pathway is determined by individual preferences and perceptions and the career opportunities available in the labor market. However, such external factors as information deficits, restrictive social norms, and credit constraints can limit the educational and occupational choices open to each individual (Figure 2.1). Actors other than that individual may also have considerable influence on the decision process. Parents may have a determining role in decisions about the educational investments of their children, and beyond the family, social networks of peers and teachers, among others, can also affect the decisions a young person makes.

Figure 2.1: The Role of Information in Choosing Education and Jobs



Educational decisions are shaped by several elements that interact: the perceived direct costs of education, the student's perceived aptitudes and preferences, and the perceived ultimate benefits. Perceived aptitude and expected returns affect both the benefits and the costs of education (Manski 1993). Individuals' perceptions of their aptitudes are shaped by personal experience and social context and are often mediated by teachers, family, and peers (Bandura et al. 2001). Since accurate information on aptitudes is difficult to gather, aptitudes may be overestimated (Stinebrickner and Stinebrickner 2014) or underestimated based on social norms or income level (Ray 2006). Individual preferences and interests, such as enjoyment derived from specific courses, also affect educational pathways and career decisions (Wiswall and Zafar 2015; Beffy et al. 2012).

Gaps in information about the returns and costs of education pathways often make it impossible to make optimal decisions and investments. When accurate information is available on the costs and benefits of education, including career opportunities at different education levels, individuals can compare alternative career pathways and choose the optimal educational investment. However, if, for example, information on occupational wage differentials is difficult to obtain, students may underestimate the returns of a specific educational degree or discount future labor market opportunities in their choice of field and subsequent occupation. Moreover, students may not have access to useful information on financial assistance for education. Interventions that address information gaps on the returns to education have proved effective elsewhere, leading to better-informed and more efficient decisions by students (Box 2. 1).

Box 2. 1: The Role of Information in Educational Decisions

Accurate information about labor market returns is essential to the decision on investment in education. As set out in the seminal paper by Gary Becker (1962), an individual making a decision related to education considers the expected benefits of a certain pathway in terms of increased earnings [1] and compares these to the costs of obtaining that education, both direct (such as tuition, books, and supplies) and indirect (such as earnings given up in order to study full-time). This basic model of investment in human capital assumes that individuals possess accurate information about the costs and benefits of education.

However, the assumption of perfect information on returns to education often does not hold. While students in the United States seem to be relatively well-informed about the payoff of a college education (Smith and Powell 1990, Avery and Kane 2004, Rouse 2004), in the Dominican Republic and Mexico, secondary-school students significantly underestimated the earnings returns to education (Jensen 2010, Avitabile and de Hoyos 2015). Even in the U.S., significant misperceptions were discovered for wage differentials of graduates with different college majors; the authors suggested that 7.8 percent of students would likely switch majors if these misperceptions were corrected (Arcidiacono, Hotz, and Kang 2012). Moreover, information on how to mitigate the costs of education may not be available: in Chile, 40 percent of 8th graders had "no idea how to pay for studies" beyond high school (Dinkelman and Martinez 2014).

The good news is that there is evidence that better information can improve educational attainment. When Jensen (2010) provided some students in the Dominican Republic with accurate information on labor market returns, they completed significantly more schooling over the next four years than students who were not provided with such information. Wiswall and Zafar (2015) provided university students in the U.S. with objective information about expected labor market outcomes for different majors; they found that students' beliefs adjusted in response to this information, with long-lasting impacts and significant expected welfare gains. After presenting some Chilean students with information about financial aid opportunities, Dinkelman and Martinez (2013) found less absenteeism from school and increased enrollment in preparatory high school than in the control group.

With access to accurate information often more difficult for people from disadvantaged backgrounds due to weaker information networks (Schneider et al. 1997), these information experiments demonstrate that focusing on the provision of objective and timely information can increase not just the efficiency of educational and occupational choices but also their equity by leveling the playing field on awareness of educational costs and benefits.

[1] Though benefits to education may include returns on the marriage market (e.g., Chiappori, Iyigun, and Weiss 2006), these are beyond the scope of this report.

Besides information, potential limitations on the menu of educational and occupational decisions include restrictive social norms and credit constraints. Social norms can deter certain groups from even forming certain professional aspirations. For example, if girls are not expected to continue schooling beyond the basic levels or are not expected to make schooling choices that take them away from home, these expectations will necessarily limit their aspirations and opportunities. Normative beliefs can also drive occupational segregation by gender, which is still high in European countries (Burchell et al. 2014). Factors such as self-perception, self-confidence, and the availability of female role models are internalized by girls and women throughout their lifetimes (World Bank 2011). In addition, even with perfect information regarding returns to education, students may not be able to afford their preferred career pathway if they cannot borrow against expected future earnings, which may lead them to choose cheaper schools, shorter studies, schools closer to home, or vocations that allow them to combine working with

studying (Osman 2014). Finally, perceptions about the quality of the education available may shape occupational preferences and affect career opportunities.

Educational decisions are made with the help of the child's information network, with parents having the most influence. Although the basic human capital model has individuals deciding on their own educational pathway and future occupation, in reality the whole social network takes part in these decisions. Parents are at the core of this social and information network. They may filter the information that reaches the child, reinforce social norms, or transmit signals about the child's ability in certain domains. Moreover, parents often hold the ultimate decision-making power in allocating household expenditures, including investment in a child's education. Indeed, many information experiments are directly targeted to parents or facilitated through parent-teacher meetings in schools, both with significant impacts in terms of educational investment and attainment (Nguyen 2008, Dizon-Ross 2014, Goux, Gurgand, and Maurin 2014, and Cerdan-Infantes and Filmer 2015).

Teachers and peers can also exert influence on a young person making educational and occupational decisions. Besides parents, school teachers may have a filtering role in terms of the interpretation and relevance of information conveyed. For example, teacher biases, manifested in differences in attention, interactions, discipline, and praise to their students, can affect student perceptions of their ability (DeJaeghere and Wiger 2013). Friends and peers can shape educational and occupational choices, especially due to the high prevalence of conformist behaviors in adulthood (De Giorgi, Pellizzari, and Redaelli 2009).

This report focuses on information sources and gaps and on policies to address them. While acknowledging that educational and occupational decisions have numerous dimensions, the report focuses specifically on mismatches that can be avoided with better labor market information and career guidance. It also centers on choices made by children and youth, although skills mismatches can and should be tackled through lifelong learning and skills development for workers already in the labor market, particularly in countries like Moldova where the workforce is aging and shrinking. To make informed choices, children and youth need guidance and information in a number of areas: (1) the range of educational and occupational options available to them; (2) what options are likely to lead to satisfactory employment; (3) an objective assessment of their own inclinations and abilities; (4) the educational pathways that can lead to a particular career; (5) the quality of different educational and training options (the institutions best placed to help them realize their aspirations); (6) the costs associated with different options; and (7) options for financing education. This kind of information could form part of a broad-based career guidance system for Moldova**.**

The Moldova Job and Schooling Decisions Survey

The analysis in this report is based on data from the Moldova Job and Schooling Decisions Survey (MJSDS) collected during the 2015 school year. The intent of the survey was to understand how individuals make job and schooling decisions—who makes and shapes these decisions, what factors are considered, and what information is used when making them. Both individual interviews and focus groups were conducted. The information collected in the interviews can be categorized in four main groups: socioeconomic background, education and labor market information, preparation for and knowledge of the labor market, and sources of information. Qualitative data obtained in the focus groups enabled collection of data through open-ended questions; the intent was to understand the thinking process behind participant responses, to explore specific pathways in decision making, and to drill down on the information required and other factors that influence decision-making at different moments.

The primary MJSDS target group was 9th and 12th graders, who must soon make major educational and occupational decisions; their insights were complemented by the perspectives of students in professional schools, collegiums, and universities and of out-of-school youth, parents, and teachers. It is in the 9th and 12th grades that students in Moldova decide whether to pursue further general or vocational education (Box 1. 1), so these two groups dominate the MJSDS individual interview data (Table 2.1). Students in post-secondary vocational and tertiary institutions and out-of-school youth were surveyed to capture the perspective of those who have already made the most important educational decisions and to understand the link between educational decisions and labor market outcomes. Finally, the insights from the interviews were enriched with focus group discussions with parents and teachers at different educational levels. Due to cost limitations, the sample of survey participants is not large enough to be representative of the populations of interest in Moldova. However, sampling for the MJSDS tried to capture variations across urban and rural communities and different socioeconomic backgrounds; selection of respondents was randomized wherever this was technically possible (for more information on sampling, see Annex B).

Table 2.1: Sample Summary

Group type	Number of communities		Number of Respondents	
	Interviews	Focus Groups	Interviews	Focus Groups
9th graders	23	3	304	26
12th graders		3	306	24
Professional school students	4	3[1]	95	24
Collegium students	3		103	
University students	3	3	102	25
Out-of-school youth who are jobless or in occasional jobs	22	3	203	21
Out-of-school youth who have made a complete transition to the labor market	None	2[2]	0	14
Parents of 9th and 12th graders	None	2	0	16
Parents of professional school students	None	1	0	7
Teachers of 9th and 12th grades	None	2	0	16

[1] 2 groups mixed professional school and collegium students and 1 had only professional school students.
[2] 1 group mixed professional school and collegium graduates and 1 had only with university graduates.

3. Findings: Information Sources and Constraints on Schooling Decisions

This section presents findings based on the Moldova Job and Schooling Decisions Survey (MJSDS) that address the following questions: (1) What schooling and occupational options do young people in Moldova find attractive? (2) To what extent does information on labor market opportunities matter in the formation of preferences and thus on ultimate decisions? (3) What is the extent, if any, of information constraints? (4) Which sources of information do students rely on and find useful? The main findings from the analysis can be summarized as follows:

- For 9th graders in Moldova, especially males, vocational education is as popular as general education.

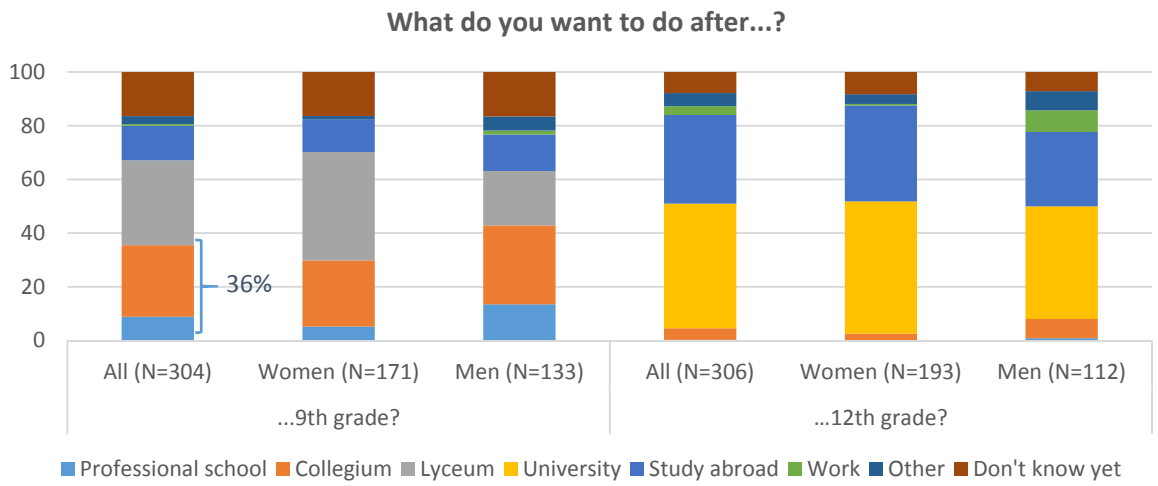
- Most students want to continue studying beyond the secondary level, with women more likely to postpone entry into the labor market.
- Many students do not form clear occupational aspirations even after making their educational decisions, perhaps because of a scarcity of labor market information.
- While future labor market opportunities are a key factor for schooling decisions, there is evidence of self-reported information deficits and objective information gaps on the opportunities and limitations of different schooling options and on returns to particular educational choices.
- Gender differences in aspirations in terms of vocational or general and preferred fields of study may perpetuate the existing occupational segregation in the labor market.
- Parental guidance is very important for student choices, especially at a young age, but parents often feel unprepared to guide their children's educational and occupational decisions.
- Although many rely on the Internet for guidance, accurate and relevant information does not seem to reach all students and their information networks.
- Students with less-educated parents demonstrate the highest information deficits, which can exacerbate inequality of opportunity.
- Moldova's current career guidance efforts lack coordination and are not well-implemented: a majority of survey respondents reported not having attended any career guidance activity, and few are aware of existing tools.
- The students interviewed considered activities providing practical information through labor market exposure, such as internships, to be very useful instruments of career guidance.

Preferred Educational Pathways

Contrary to anecdotal evidence, vocational is as popular as general education among students in Moldova, although interest is mainly in collegiums rather than professional schools. About 32 percent of 9th grade students in Moldova want to pursue general education and 36 percent vocational education, although only 13 percent aspire to do so in a professional school (Figure 3. 1). There is a clear gender difference: while 43 percent of male 9th graders are interested in vocational education, only 30 percent of the females are.

The appeal of university education is very strong, especially for women. Of lyceum (12th grade) students, almost half (42 percent of men and 49 percent of women) want to continue to study in a Moldovan university, and another 33 percent are interested in continuing their studies abroad; only 7 percent of men and 3 percent of women want to enter the labor market immediately after graduation (Figure 3. 1). Moreover, despite already having acquired professional qualifications, the vast majority of collegium students surveyed (74 percent of men and 82 percent of women) also reported wanting to go to university. Even among students in professional schools, almost half (44 percent of men and 48 percent of women) reported wanting to pursue further education. That relatively more women want to continue their studies was most evident for university students in their last year of undergraduate studies: 48 percent of women but just 28 percent of men reported an interest in further study.

Figure 3. 1: Student Aspirations after 9th and 12th Grade, Percent



Source: Authors' calculations based on MJSDS 2014/2015 data.

Students surveyed saw education-related emigration, a common phenomenon in Moldova, as an attractive prospect. As early as 9th grade, 13 percent of students indicated that they wanted to study abroad, and the percentage went up among those contemplating university: One in three lyceum students in the survey (28 percent of men and 36 percent of women) wanted to continue their studies abroad. Focus group discussions suggest that the attraction stems from a broader range of options for quality university education, easier access to university (especially given Moldova's requirement of passing the Baccalaureate exam), and more affordable options. As an urban female collegium student explained, some students decide to migrate to Romania after 9th grade in order to increase their chances of accessing university and attending a more prestigious institution: "I know persons who have chosen to go to lyceum in Romania, because it is easier to enter the university, compared to those of us who complete the lyceum in Moldova. And the universities in Romania are recognized in Europe."

Educational aspirations reveal a shortage of information on the opportunities for and limitations of different educational pathways. In theory, collegium students can enter university by passing the Baccalaureate exam; however, in reality, only one-third of collegium students taking the exam actually pass, compared to 64 percent of lyceum students (Ministry of Education 2015), which suggests that the university aspirations of many of the collegium students surveyed may not be realized.[6] The situation is even more dire for professional school students: unless they attend a lyceum at night, they cannot even take the Baccalaureate exam, which is a necessary requirement to enter university. With only 15 percent of the professional school students surveyed who have university aspirations attending night lyceum, the

[6] It is not possible to evaluate the extent to which the difference in the Baccalaureate pass rates of collegium and lyceum students reflects self-selection (students with lower ability to pass the test enter collegiums to hedge their risk in case of failure), or poorer preparation for the Baccalaureate exam in collegiums than in lyceums. The problem for collegium students may thus be excessive optimism about their own ability to pass the Baccalaureate exam or lack of information about the relative preparedness for the exam provided by lyceums versus collegiums.

vast majority suffer from unrealistic aspirations, which could have been addressed with proper information on education pathways when these individuals were making their post-9th grade decision.

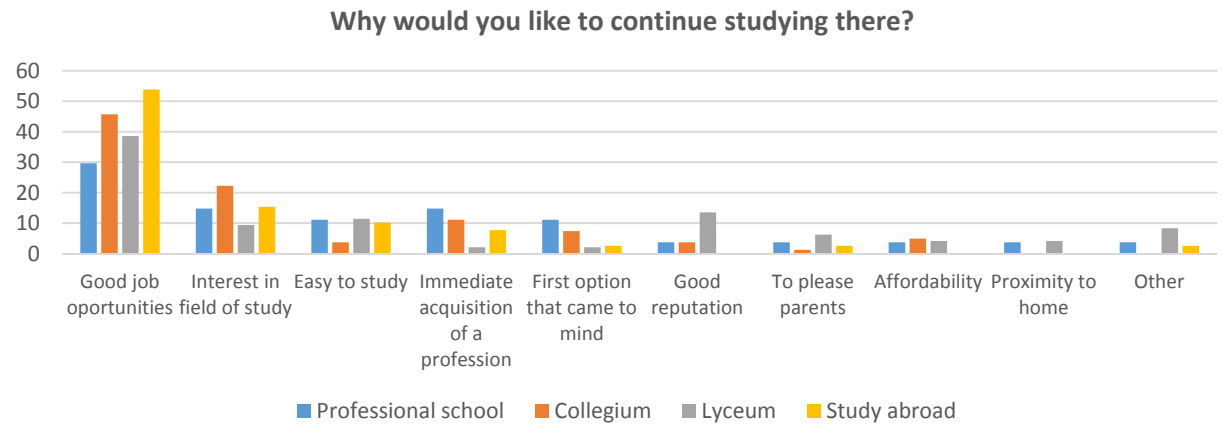
Main Factors behind Educational Decisions

- *Moderator: To what extent does your wish to find a job influence your decisions regarding studies?*
- *S: 98 percent.*
- *Moderator: It matters that much?*
- *All: YES!*

- Focus group discussion with urban 12th graders

Students reported that expectations of good future job opportunities matter the most for their schooling preferences, especially for 9th graders wanting to study abroad and 12th graders wanting to pursue university education. Asked about the top three reasons for wanting to pursue a certain education option, more than half of the 9th graders chose "in the future I will have good job opportunities" (Figure 3. 2). Focusing on the single most important reason, however, reveals significant heterogeneity in the importance of expected labor market returns: they were the most important factor for 54 percent of those who wanted to continue their studies abroad but for only 30 percent of those who wanted to study in a professional school. The vast majority of 12th graders–85 percent–who wanted to continue studying said that job opportunities were the main reason for their aspiration, perhaps because higher education is seen as a necessity to find a good job.

Figure 3. 2: Most Important Reason for 9th Graders Choosing each Academic Option, Percent

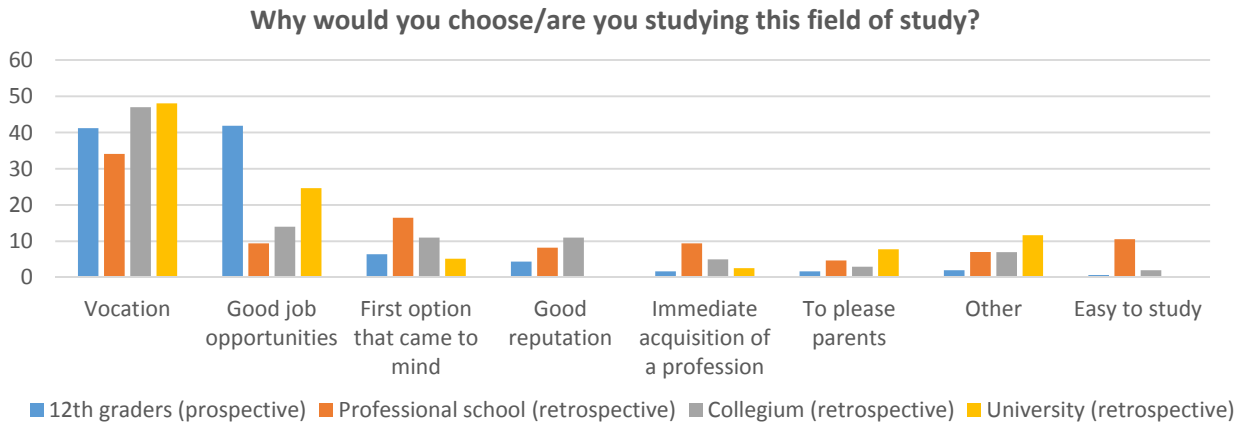


Source: Authors' calculations based on MJSDS 2014/2015 data.

In choosing a field of study, students reported opting for fields at the intersection of their vocational preferences and expected job opportunities (Figure 3. 3). However, for those who have already embarked on a defined occupational path (those in collegiums, professional schools, or university),

vocational preferences were the reason most often mentioned for their choice. The consideration of both job opportunities and vocational interests in deciding on a field of study was corroborated by the focus group discussions. As an urban male professional school student put it: "I have chosen the profession [of carpenter] I know I will be able to work in and I like it." An urban male collegium student said he liked his choice, but also "I have chosen computer science because nowadays this profession is highly sought after. Any company needs a computer, because everything is based on computers nowadays and this is well paid."

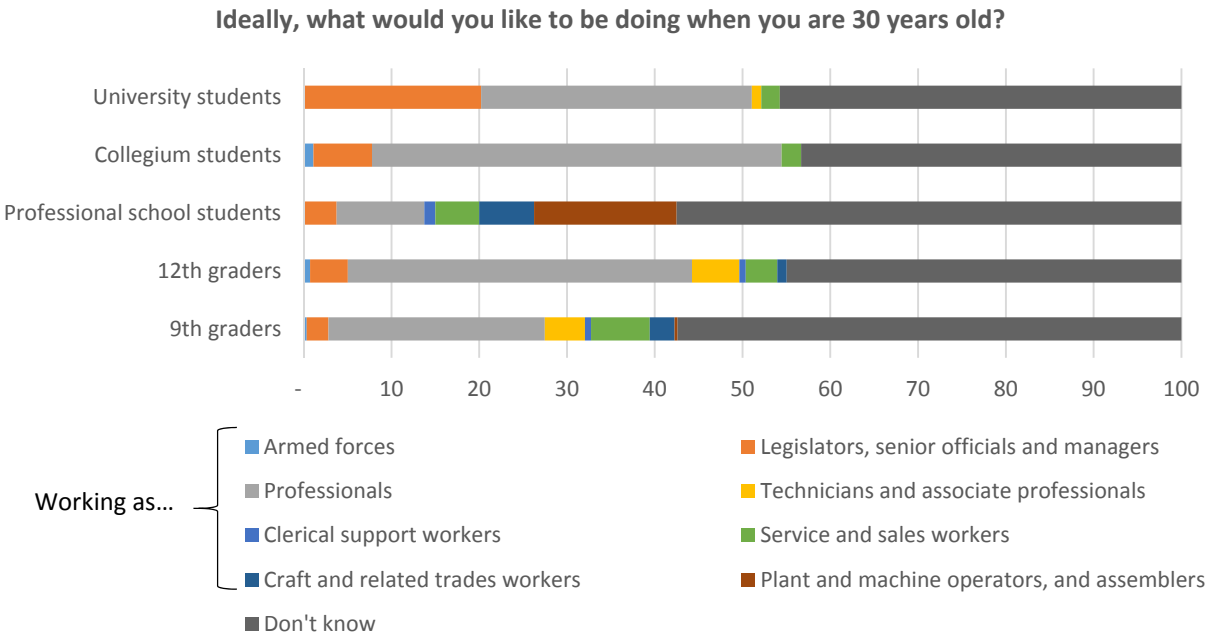
Figure 3. 3: Most Important Reason for Choosing a Field of Study, Percent



Source: Authors' calculations based on MJSDS 2014/2015 data.
Notes: For each group, the response options sum up to 100 percent. The "other" category includes the following response options: to study with my frieds, the teachers recommended me to study there, it is/was taught at the closest school to my home, it is/was a family tradition, other.

However, many students, even some in their last year of professional school or university, have no clear occupational aspirations. A high percentage of students interviewed were not able to state their preferred occupation at age 30 (Figure 3. 4). This was particularly striking for students in their last year of studies: 39 percent of university students, 43 percent of collegium students, and 52 percent of professional school students who wanted to start working after graduation still had no medium-term occupational aspirations. This may reflect information gaps, whether about the job opportunities available on the labor market or the occupational options that different educational paths actually lead to.

Figure 3. 4: Occupational Aspirations, Percent



Source: Authors' calculations based on MJSDS 2014/2015 data.

Perceived ability as well as the quality of education also help shape schooling decisions in Moldova, in particular the minimal interest in professional schools. According to focus group participants, the quality of education provided in professional schools is markedly worse than in collegiums and lyceums; even professional school students themselves considered their option as least prestigious. Because of their poor reputation, professional schools are thought of as a last-resort option for poor academic performers. In a vignette exercise,[7] individuals interviewed advised a hypothetical 9th grader, Anna, what to do next in different scenarios. In the scenario where Anna is a bad student, two-thirds of students who advised her to continue studying recommended that she go to a professional school.[8] For students who fear failing the Baccalaureate exam, collegium education makes it possible to hedge the risk.[9] A rural female 12th grader summarized the views of several other focus group participants: "in college, I could take the Baccalaureate [exam], but also finish with a profession."

Significant gender disparities in occupational aspirations could indicate the influence of social norms, gender pay gaps in different occupations, or a shortage of information on occupational wage differentials. Both male and female 12th graders showed a preference for degrees in social sciences, business, and law (Figure 3. 5). However, the second-most popular aspiration for men was the STEM fields (science, computing, engineering, and math), while women were more interested in studying health, the

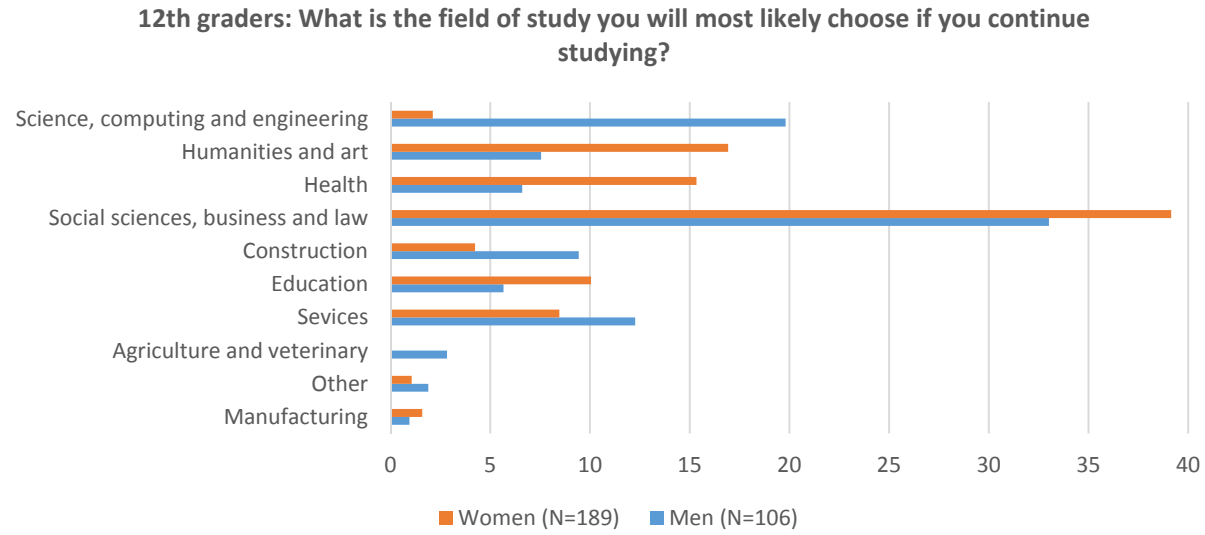
[7] Vignettes are short stories about a hypothetical person that are used in both quantitative and qualitative research to gather information about people's beliefs that might not be explicitly expressed when talking about their own experience (Finch 1987). Via vignettes, respondents are able to comment on and advise the character in the story how to act in the given situation, reflecting on what they would do themselves.

[8] A substantial share (38 percent) advise Anna to stop studying altogether in this scenario, which is not going to be an option with the new Education Law.

[9] In recent years, the rate of passing the Baccalaureate exam has decreased dramatically, from 92 percent in 2011 to 56 percent in 2014, because increased monitoring during the examination significantly decreased cheating attempts (Ministry of Education 2015).

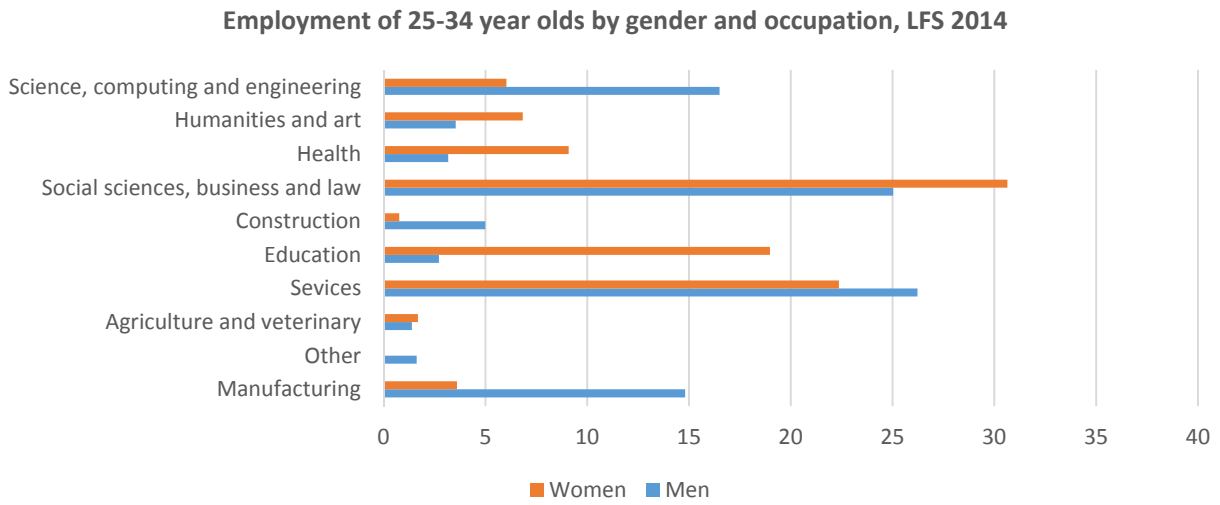
humanities, and art. These differences in aspirations are reflected in differences in actual occupations for Moldova's workers aged 25–34 (Figure 3. 6): women are much less likely than men to end up in STEM occupations. The gender disparity in occupational aspirations, which are formed by a range of factors including the social context, may thus be perpetuating occupational segregation in the Moldovan labor market. The provision of gender-specific information on occupational wage differentials has the potential to inform the formation of expectations and aspirations. Indeed, female 9th graders apparently perceive higher returns to education than men, but this gender gap reverses for collegium, professional school, and university students. This could imply that older female students have already sorted themselves into occupations, for which the returns to schooling may be indeed lower. Thus, providing information at younger ages to inform occupational aspirations could help reduce the observed gender disparities.

Figure 3. 5: 12th Graders' Preferred Field of Study, Percent



Source: Authors' calculations based on MJSDS 2014/2015 data.

Figure 3. 6: Employment by Gender and Occupation, Ages 25–34, 2014, Percent



Source: Authors' calculations based on Labor Force Survey 2014.
Note: Employed 25–34-year-olds with collegium education or higher.

Financial constraints prevented some MJSDS participants from realizing their post-9th grade aspirations. Though the majority of the students interviewed had been able to pursue their desired option after 9th grade (Table 3. 1), one-third of those who had been interested in pursuing collegium ended up in a lyceum. While nearly two-thirds of those planning to enter professional schools did so, out of those that did not, most had started working after 9th grade. Financial considerations were the most commonly cited constraint, mentioned by 41 percent of those with unrealized post-9th grade aspirations.

Table 3. 1: Aspirations and Actual Activity after 9th Grade, Percent

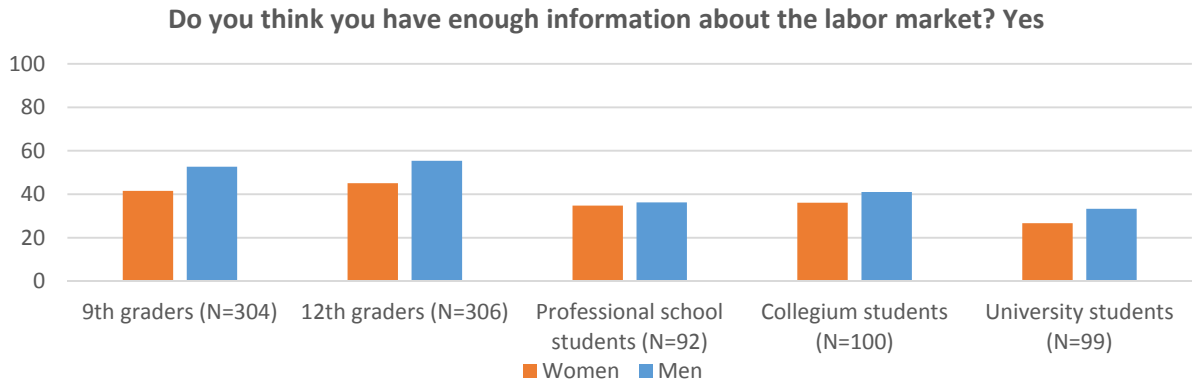
		Actual Education Pathway after 9th grade					N
		Professional School	**Collegium**	**Lyceum**	**Start Working**	**Stop Studying**	
Aspirations after 9th grade	Professional school	**62**	2	11	21	4	114
	Collegium	7	**50**	35	6	2	202
	Lyceum	4	2	**89**	3	1	285
	Study abroad	14	10	75	1	0	73
	Work	21	3	23	**49**	5	39

Source: Authors' calculations based on MJSDS 2014/2015 data.
Sample: 12th graders, professional school students, collegium students, university students.

The Role of Information Constraints

About half of general school students and two-thirds of older students felt they did not have enough information about the labor market. Although expected labor market opportunities are often reported to be the single most important factor in educational aspirations, and indeed weighed heavily in the occupational aspirations of MJSDS participants, many students reported not having sufficient information about the labor market (Figure 3. 7). Across all educational levels, female respondents were more likely to perceive an information deficit (e.g., among 12th graders, 55 percent of the women felt they did not have sufficient information compared to 45 percent of the men). As expected, the closer individuals were to moving from school to labor market, the more aware they had become about labor market information gaps: while 53 percent of 9th grade males felt sufficiently informed, only 33 percent of university males did. Somewhat surprisingly, there did not appear to be an urban-rural divide in self-reported deficits of labor market information.

Figure 3. 7: Amount of Information Students Have about the Labor Market, Percent



Source: Authors' calculations based on MJSDS 2014/2015 data.

Despite their perceived lack of labor market information, students undertaking a job search considered themselves well-equipped to do so. Most of the students surveyed in professional schools, collegiums, and universities who had already started looking for a job considered themselves able to perform a variety of job search tasks, such as filling out employment applications, interviewing well, using a computer to prepare a CV, learning about job vacancies, and being qualified for jobs they are interested in. As a result, more than two-thirds of students thought it likely or very likely that they would find a job in the next six months.

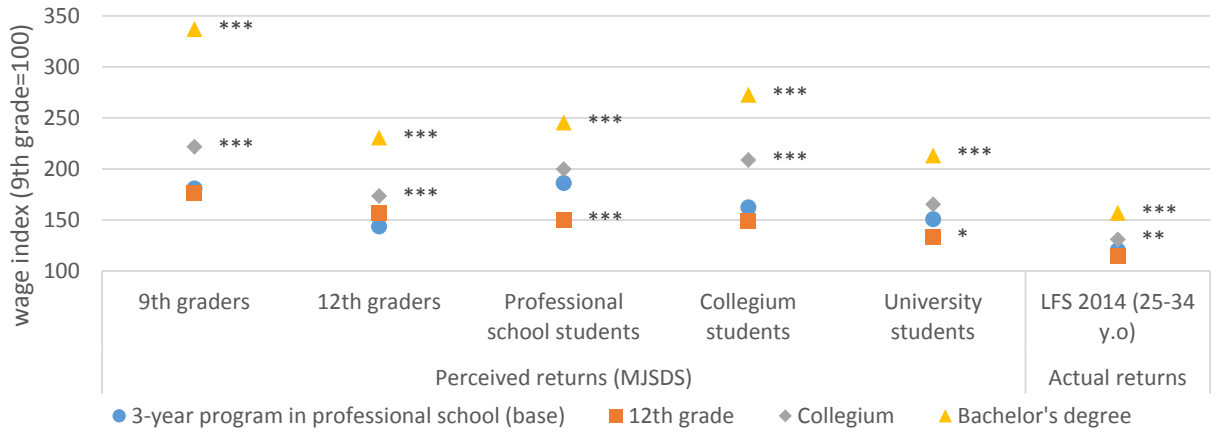
About half of the collegium students participating underestimated the education required to work in their ideal job in Moldova, so that they risk underinvesting in education. Information deficits were explored in the MJSDS not only through subjective perceptions but also with a test of labor market knowledge: First, student perceptions of educational requirements for their ideal job at age 30 were compared with the median education of workers aged 25–34 in each major occupational group (according to 2014 Labor Force Survey [LFS] data). It was found that half of the collegium students underestimated the education required for their occupational aspirations. In other groups the proportion was much lower, ranging from 28 percent for 9th graders to 4 percent for university students. The difference is that most collegium students aspired to work as professionals and thought a collegium diploma would be sufficient. However, according to the 2014 LFS, 86 percent of individuals aged 25–34 employed as professionals have tertiary education. This is an information gap that should be addressed before the crucial 9th grade

decision on educational pathway is made, and then again for collegium students, to prepare those aspiring to professional careers to pass the Baccalaureate exam and continue on to university.

In general, students correctly perceived that there are increasing returns to education after 9th grade, but information gaps on the returns are present. Figure 3. 8 presents, for each respondent group, the wage they think they would earn at age 30 with different educational levels (represented by different-shaped dots) relative to what they would earn if their highest education was completion of 9th grade. Ninth graders, for example, thought that if they obtained either a lyceum or a professional school diploma before entering the labor market, by the age of 30 they would earn about 75 percent more than if they had started working with only a gymnasium diploma. The stars next to the dots point to significant differences in the perceived returns between the particular level of education and a 3-year professional school diploma. For example, 9th graders thought that while a collegium or university diploma delivers an earnings premium over the 3-year professional school diploma, a lyceum diploma does not. The last panel of the figure also presents the actual returns to different education levels (relative to 9th grade) for 25–34-year-olds working in Moldova in 2014. All participants correctly perceived that continuing their studies after 9th grade pays off and that university education has the highest returns. However, different groups had different perceptions of the returns to intermediate educational levels. According to professional school and university students, someone with a 3-year professional school diploma earns significantly more than someone with a 12th grade (lyceum) diploma; however, according to the 2014 LFS data, the two degrees are similarly remunerated for workers aged 25–34.[10] Also, professional school students perceived that there are no significant returns to a collegium diploma, but the LFS results demonstrate that the difference in earnings between collegium graduates and holders of a 3-year professional school diploma is significant (Figure 3. 8). Given the relationship between perceived returns to education and educational attainment (Jensen 2010, Nguyen 2008, McGuigan, McNally and Wyness 2012), these misperceptions of the returns to different education levels can have significant consequences for investment in education. Notably, as education increases, the magnitude of the returns to education becomes closer to reality. It may be that although older students *felt* less informed about the labor market, they were actually the best-informed but were also the most aware of their information gaps.[11]

[10] The difference in average earnings for 25–34-year-old holders of these two diplomas (lyceum and professional school), holding other factors constant, is significant only at the 18 percent level, above the 10 percent level used.
[11] Another point from figure 3.8 is that Moldovan students seem to overestimate returns to education, compared to the LFS (the estimates are wider for perceived than for actual returns). One would not expect an accurate estimate of the levels of earnings, in particular from students in 9th grade, who may have very limited awareness of earning levels in general. What is important is the perceived relative returns between different education levels. Additionally, although the survey question asked respondents to think of a job in Moldova, given widespread emigration, student perceptions may be partly driven by earnings abroad.

Figure 3. 8: Perceived and Actual Returns to Education after 9th Grade



Source: Perceived returns: authors' calculations based on MJSDS 2014/2015 data; actual returns: authors' calculations based on LFS 2014.
Notes: Significant differences in the wage index compared to the base category of the 3-year professional school program: * 10%, ** 5%, ***1%. The wage index is calculated by setting the perceived monthly wages at age 30 after completing 9th grade as equal to 100. The actual returns to education are based on the results of a Mincer regression controlling for gender, age, marital status, education, and location. For more details, see annex C.

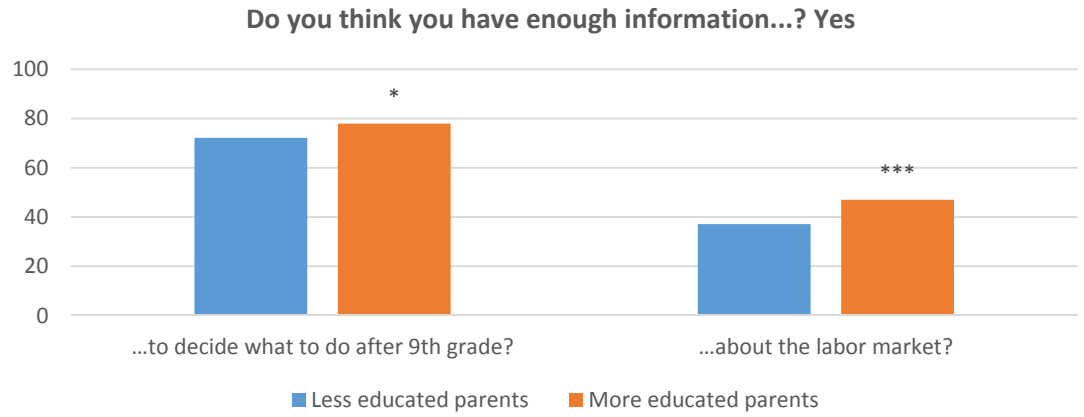
There was also a sense that information on the costs associated with certain educational and occupational choices may be lacking. A jobless out-of-school urban female described the lack of practical information on the costs of studying at the time she was making her educational decisions: "If someone wrote that he wanted to go into Medicine, he did not know that money was needed to study this profession. He was not guided about whether he had or not the possibility to study in such a field." With most collegiums and professional schools located in urban areas, the aspirations of rural students to attend these institutions may be thwarted due to the additional costs associated with internal migration. A rural female 12th grader described her lengthy choice process, made difficult by financial constraints and remote location:

> I tried to get into several colleges, because college was my goal. I tried in Orhei because it is closer to the village where I live; but because my average grade was not sufficient [for a scholarship], I had to continue studying by paying. But I clearly had no money to pay the contract, plus I would have other expenses too: to buy a uniform, to live somewhere. I needed a lot of money that I did not have, so I had to choose another option. The simplest and most convenient was the option to go to lyceum. The lyceum [I wanted] was far from my village, Telenești, but there was no dormitory there, so I had to find somewhere else. And the best option was Sipoteni.

Information gaps are more severe for disadvantaged students, which may exacerbate inequality of opportunity. Students whose parents had completed at most professional school were more likely to perceive a shortage of information about both their options after 9th grade and the labor market, compared to peers who had at least one parent with completed collegium or university education (Figure 3. 9). Additionally, students whose parents had less education misperceived the returns to collegium education: 9th graders with less educated parents perceived 12th grade, a 3-year professional school, and collegium education as equally compensated in the labor market, and 12th graders saw no significant returns to a collegium diploma compared to completing 12th grade.

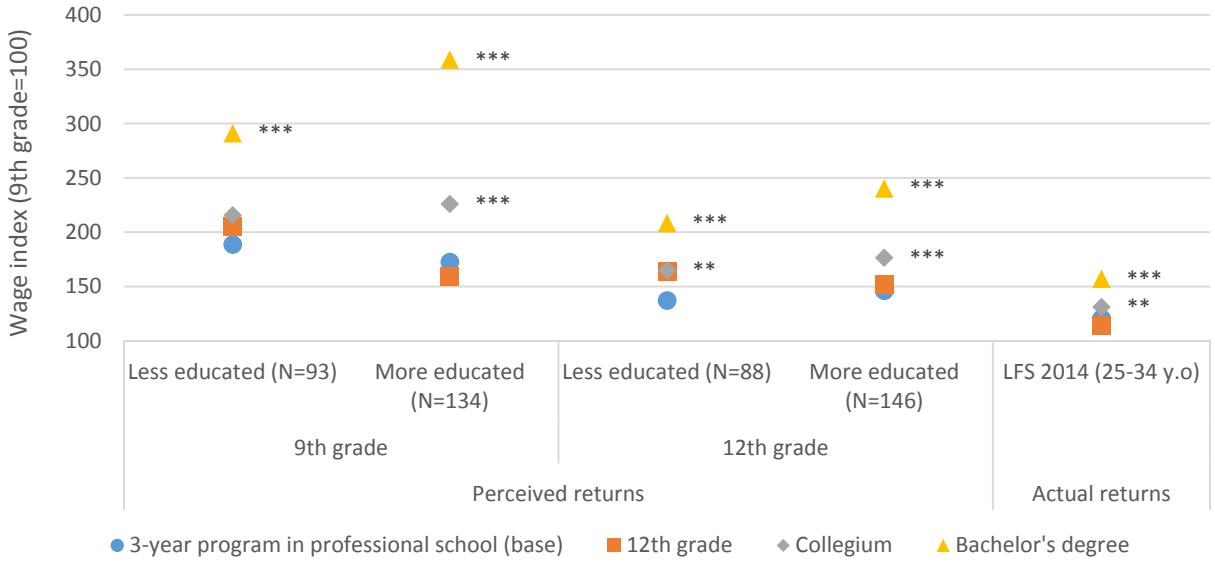
However, the LFS results for young workers demonstrate that the difference in earnings between collegium graduates and individuals with lyceum education is significant (Figure 3. 10). Similar results were found in other countries: children from underprivileged households, in addition to having heavier financial constraints than others, tended to be further disadvantaged by more significant information gaps for career choices and less informed guidance from parents (Dizon-Ross 2014). It appears that information barriers can perpetuate intergenerational inequality by limiting access to opportunities.

Figure 3. 9: Amount of Information Students Have and Parental Education, Percent



Source: Authors' calculations based on MJSDS 2014/2015 data.
Sample: 9th graders, 12th graders, professional school students, collegium students, university students.
Note: Less educated parents are those that have completed at most professional school; with more educated parents, at least one has a collegium or university education.

Figure 3. 10: Perceived and Actual Returns to Education after 9th Grade by Parental Education



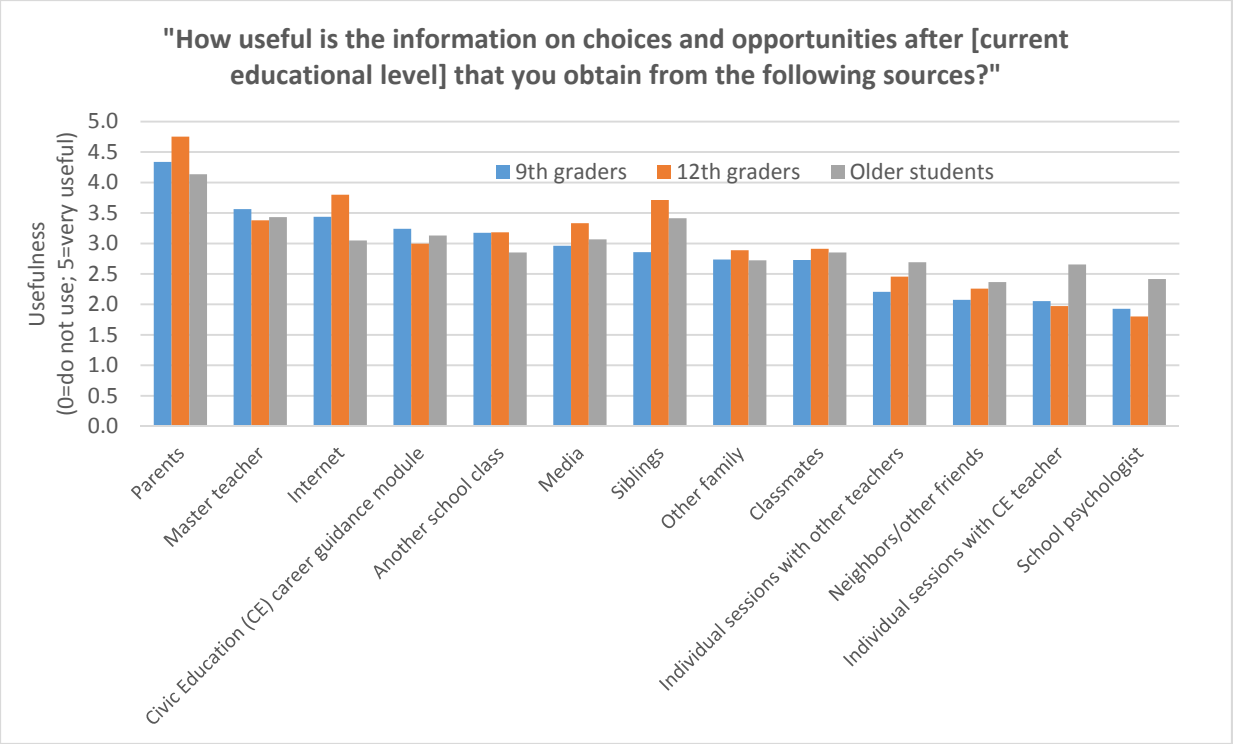
Source: Perceived returns: authors' calculations based on MJSDS 2014/2015 data; actual returns: authors' calculations based on LFS 2014.
Notes: Significant differences in the wage index compared to the base category of 3-year professional school program: * 10%, ** 5%, ***1%. Wage index is calculated by setting the perceived monthly wages at age 30 after completing 9th grade equal to 100.
The actual returns to education are based on the results of a Mincer regression controlling for gender, age, marital status, education and location. For more details, see annex C.
Less educated parents are those who have completed at most professional school; with more educated parents at least one has a collegium or university education.

Sources of Information and their Usefulness

At different decision points, participants in the MSJDS sought information on education options, current and future labor market trends, and the characteristics of jobs in different sectors and occupations. When making educational decisions, students need both general information about educational pathways they can pursue, with their relative advantages and disadvantages, and specific information on entry and graduation requirements, costs, availability of schools, and the quality of the education in a particular institution or field of study. They also seek Information on the labor market; study respondents wanted to know which professions had high or growing demand and the fields of study that would allow them to find jobs in certain industries. When transitioning into the labor market, students thus seek detailed information on the characteristics of different jobs, such as qualifications, compensation, career prospects, social prestige, and work environment. Where can Moldova's young people get all this information?

Parents are perceived as the most useful source of educational and occupational information and often as co-decision makers. Students of all ages and educational levels considered parents to be the most helpful source of information for making educational and career-related decisions (Figure 3. 11). In general, the aspirations of parents and children seem to be fairly well aligned: the overlap between the aspirations of students and what parents wanted them to do after 9th grade (as reported by students) ranged from 64 percent for 9th graders wishing to study abroad to 87 percent for those wanting to study in a lyceum. Indeed, students perceived parents as co-decision makers or as supporters of their children's decisions; only 17 percent reported that parents have the last word in student educational plans.

Figure 3. 11: Usefulness of Information Sources for Current Students



Source: Authors' calculations based on MJSDS 2014/2015 data.
Notes: Sample includes 9th graders, 12th graders, and older (professional school, collegium, and university) students.

Of in-school information sources, master teachers were considered the most useful. According to the MJSDS, for all educational levels the master teacher offered information on choices and opportunities upon graduation; for current students surveyed, for usefulness the master teacher was second only to parents (Figure 3. 11). More than two-thirds of the students considered the information they received from the master teacher to be useful or very useful, whether the question was asked prospectively or retrospectively. The familiarity of master teachers with students is a major reason for their perceived usefulness: "[The other teachers] don't know what skills we have; they don't know … how we manage in practice. But the master teacher knows everything because he is with us on a daily basis. He knows what mistakes we make, how we cook, that's why he can give advice" (urban female professional school student).

Other in-school resources can also be powerful in shaping educational aspirations. The career guidance modules in the Civic Education class were perceived as relatively useful: 61 to 68 percent of the respondents considered this curriculum useful or very useful. A recommendation from school personnel of a particular educational pathway can shape or reinforce a student's aspiration. Half of the 12th graders and professional school, collegium, and university students surveyed acknowledged that their school had encouraged them to choose a specific academic option after 9th grade; for the vast majority of the collegium and university students, the option recommended was the one they eventually pursued (Table 3.1). The correlation was much lower (43 percent) for students who ended up in professional schools, which indicates the importance for this group of vocational preferences, norms, or credit constraints not observed by the school. Among current 9th graders, 67 percent considered that their school was encouraging them toward a particular academic choice, which for 77 percent of these was to continue

studying in a lyceum.[12] The least useful source of career guidance information was perceived to be school psychologists, with more than half of the students surveyed claiming not to have received any guidance from them.

Table 3.1: School Recommendations and Student Decision after 9th Grade, Percent

		Decision after 9th grade		
		Professional School	**Collegium**	**Lyceum**
School recommendation after 9th grade	Professional school	**43**	2	3
	Collegium	32	**88**	11
	Lyceum	24	9	**84**
	Other	0	2	3
N		201	38	58

Source: Authors' calculations based on MJSDS 2014/2015 data.
Sample: 12th graders and professional school, collegium, and university students.

Information scarcity often prevents parents and teachers from properly assisting young Moldovans with educational and occupational decisions. Given the role of parents as advisers on these decisions, it is of particular concern that parents reported not feeling informed enough to provide good guidance, especially on job opportunities. As one rural mother put it in a focus group, "They want to know... where to get employed, if our country needs such professions. We as parents do not have such information—which professions are in demand, so that they could get hired here, in our country." The children also recognized their parents' information gaps: "My father probably did not even know what a collegium was in order to guide me, that's why he kept on saying that I need to go to the lyceum and then to university" (an urban female collegium student). There was also a sense that teachers are not well-informed about careers and labor market trends and were only able to provide very general information. An urban female university graduate who had found stable employment justified not getting career advice from her lyceum teachers by describing them as too removed from the general labor market ("far from what happens elsewhere"). Teachers themselves acknowledged their information gaps; as one rural female teacher lamented, "We only know the inclinations of children and parents; we don't know the jobs they can get."

Other informal information sources are siblings and classmates. Among informal sources of information, students participating in the MJSDS found siblings to be second only to parents (Figure 3. 11). Older siblings may set valuable precedents in terms of an educational path, but they can also be useful advisers on what to consider in making these decisions, having done so themselves relatively recently. An urban female collegium student explained that "It was my sister who guided me where to go, which school to choose. She was a psychologist in the lyceum where I studied. She guided me very well and I have no regrets." While classmates were not necessarily considered the most useful source of information, they were a very frequent source. When students were asked "How often do you talk about your possible options after finishing [current educational level] with the following people?", classmates were cited as the third-most-frequent source for 9th graders after parents and master teachers and the second-most-frequent source for 12th graders, behind only parents. Given the importance of parents, siblings, and classmates in student information networks, it may be worthwhile to consider school-wide and community-wide information interventions.

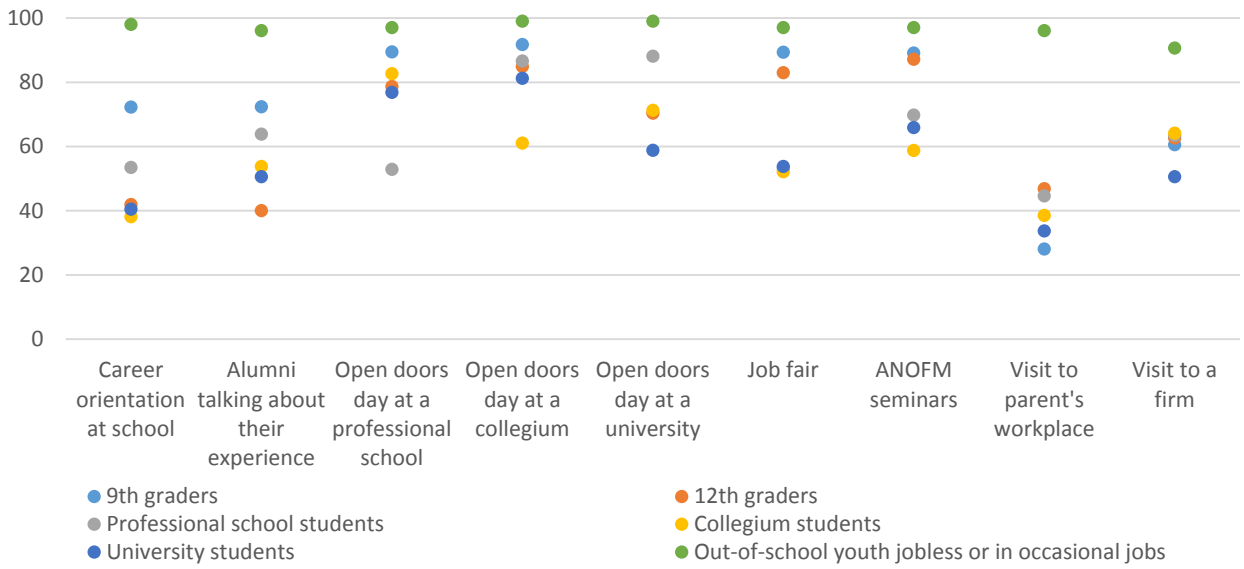
[12] This recommendation may suffer from a conflict of interest because financing of lyceums is per capita.

The Internet is thought to be a useful information source, but the quality of the information obtained from it may be dubious. MJSDS respondents considered the Internet to be the third-most-useful source of information for educational and occupational decisions. In focus groups 9th and 12th graders emphasized that anyone with interest and motivation can get the necessary educational and labor market information from the Internet. These students considered getting informed to be the individual's responsibility. However, without a well-structured online platform for up-to-date labor market information, the Internet may create a misperception of being informed.

Assessment of Career Guidance Activities

In general, participation in career guidance activities seems very low, particularly for the jobless youth. Despite the claim of most schools participating in the MJSDS that they organize career guidance activities (e.g., talks by alumni or field trips to firms), most students said they had never attended such activities (Figure 3. 12). Indeed, the only activity in which at least half of the survey respondents participated in 9th grade was to visit their parents' workplace. Beyond 9th grade, career orientation sessions at the school seemed to be the most common activity. Notably, young respondents without jobs reported no exposure to career orientation either while studying or since; almost half claimed they were never made aware of any career orientation activities except for visiting a parent's workplace or another firm. Utilization of ANOFM services was also low; only 20 percent of the out-of-school youth interviewed who were jobless or in only occasional jobs reported being registered with the agency.

Figure 3. 12: Individuals Who Have not Attended or Are Unaware of Orientation Activities, Percent



Source: Authors' calculations based on MJSDS 2014/2015 data.

Activities that expose individuals to the labor market were highlighted as most useful. Qualitative analysis found that participants voted as most useful those activities that they had not experienced, and justified their potential usefulness based on individual information needs and expectations. Activities were classified as useless mostly based on past experience with them.

Table 3. 2: Most Useful Career Orientation Activities

lists activities voted most useful by students and by youth who had already found stable jobs. Except for career orientation sessions at school, which are more theoretical, the remaining activities considered most useful were those that gave participants real work experience. Notably, 9th and 12th graders preferred school-based activities, while students closer to the labor market, such as those in professional schools, collegiums, and universities, also valued experiences outside school, such as job fairs, visits to firms, and internships. Examples of the reasons stated to explain the perceived usefulness of each of the top five activities are as follows:

- *Career orientation sessions at school:* "I'd suggest periodic orientation sessions [starting] in the lower grades… so that when [students] get to the moment when they need to choose they would have the necessary knowledge to make the correct decision" (urban female collegium student).
- *Individuals coming to talk about their experience:* "You get oriented [when you talk to experienced people]. They give you information, suggest different opportunities, strengths and weaknesses, opinions and suggestions" (urban male professional school student).
- *"Open doors days" in other schools:* "They allow beginners to get to know the school. So that they don't get scared when they go, or think it will be difficult, the best is to let to see everything on their own" (rural female out-of-school who is jobless or in occasional jobs).
- *Job fairs:* "At job fairs, there are representatives who show you jobs and all the advantages. There is a person who highlights what are the jobs, the salaries. They bring you information. They are specialized people" (urban female vocational school student).
- *Visits to firms:* "The best would be to drop by companies in different fields and see how the manager works, how the carpenter, the locksmith works. To see all the levels and the environment and the one that will attract him more to go and study it" (urban female university student).
- *Internships:* "From hearsay you hear: look how beautiful it is. But when you go to see: it's different, and when you work is the same" (urban male collegium student)

Table 3. 2: Most Useful Career Orientation Activities

Most useful activity	9th graders	12th graders	Professional school and collegium students	University students	Out-of-school youth (professional school and collegium graduates) with complete transition to the labor market	Out-of-school youth (university graduates) with complete transition to the labor market	Out-of-school youth jobless or in occasional jobs
	Individuals coming to talk about their experience	"Open doors days" in other schools	Career orientation sessions at school	Job fairs	Career orientation sessions at school	Visits to firms	"Open doors days" in other schools
	"Open doors days" in other schools	Career orientation sessions at school	Job fairs	Career orientation sessions at school	"Open doors days" in other schools	Job fairs	Visits to firms
	Career orientation sessions at school	Individuals coming to talk about their experience	Individuals coming to talk about their experience	Individuals coming to talk about their experience	Individuals coming to talk about their experience	"Open doors days" in other schools	Career orientation sessions at school
			Internships	Internships			
5th most useful activity			"Open doors days" in other schools				

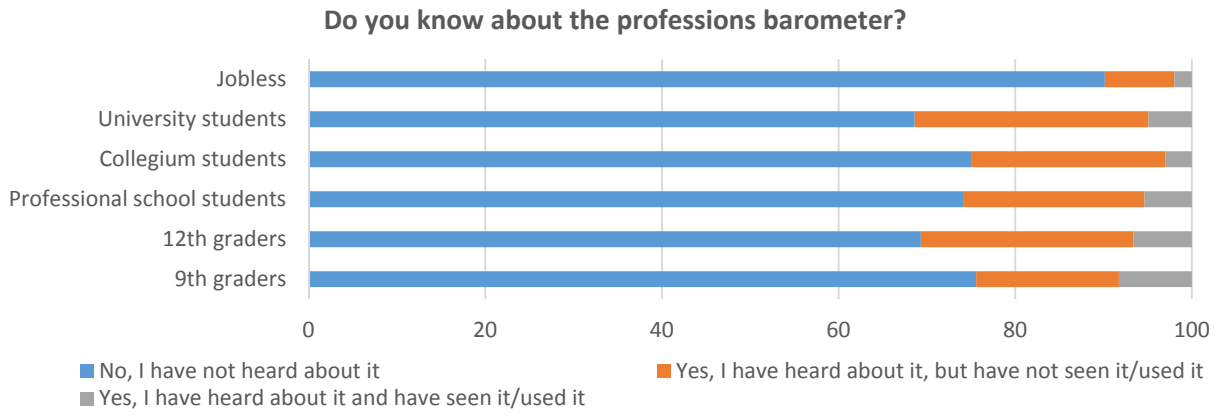
Vocational school and university students in particular considered internships to be useful. Respondents in individual interviews cited them as a valuable opportunity to get work experience and to raise the likelihood of finding a job after graduation. In Moldova all professional school, collegium, and university students are required to do an internship before graduating. While most internships last less than three months, they were still perceived as useful or very useful by almost 90 percent of the students at all educational levels. Internships were valued for allowing participants to learn about the real characteristics of a job they aspire to do and for providing students with work experience. Almost half of the students also thought it likely or very likely that after graduation they would work in the firm where they did their internship, with women being more likely to report this than men.

MJSDS participants had mixed feelings about the usefulness of the Civic Education career guidance module. More than 60 percent of all students interviewed who had received information about choices and opportunities after their current studies from the Civic Education class considered it useful or very useful. However, for focus group participants, the perceived usefulness of the class varied considerably. Some found it to be a forum to reflect about their schooling and occupational plans: "Actually only after I had been to these classes did I set a foundation and reinforce my opinion about what I wanted to do after the lyceum" (rural female 12th grader). However, for others, the subject was often neglected by both students and teachers: "The Civic Education classes were not considered important and students did not give them much attention. We were not at the age to understand that this is needed" (urban female university student).

Making educational and career-related information (such as the Professions Barometer) more easily accessible and well-structured could enhance take-up. According to both the individual interviews and the focus group discussions, awareness of the existence of the Professions Barometer is very low, especially among youth who are jobless or only employed part time (Figure 3. 13). When voicing their information needs, focus group participants described how useful information could be provided:

> There is information, but they don't know how to manage it. … It would be good to classify it so that people could orient themselves the right way and are able to find jobs. Now they go and study, but then … they go and sell fish at the marketplace with a higher education diploma. They should be able to orient themselves to understand what [a certain profession] consists of and what they have to do to further themselves…. Also I think information about job openings should be more structured—not just announcements thrown here and there—to make it easier for young specialists. In our country it is more based on: "Look my neighbor or godfather told me that there is a job there and I'm going to apply for it." [Some system] is necessary, especially for the youth—they are not so well-oriented in life yet, in order to allow them to find a job easier."
>
> - Urban female professional school student

Figure 3. 13: Awareness of the Professions Barometer, Percent



4. Policy Implications: Learning from Other Countries

The Findings as They Relate to Moldovan Institutions

A positive finding of the survey on jobs and schooling decisions is that students value information related to occupational and educational choices. There is no need to convince Moldova's students that information on educational pathways or available jobs is important as they make post-9th grade or post-12th grade decisions. Students recognized that the job opportunities they will have tomorrow affect the choices they make today. They were also specific about the *kinds* of information they need: education options (what to study and where, the quality of different educational institutions, entry requirements, and costs); current and future labor market trends for different occupations, sectors, and industries; and specific job characteristics (e.g., earnings and working conditions). The emphasis on using the Internet to search for information suggests that online tools can be an effective option for delivering information to this target group.

However, Moldova has significant information gaps that need to be addressed from early school years through university and beyond. Many survey respondents were concerned that they lack information about the labor market, with girls more concerned than boys. The perceived information deficits were higher for those closer to moving from school to work—university students and those in professional schools—which suggests that earlier on students may be underestimating their information needs. At the same time, many students in universities and professional schools do not know what they want to do by the age of 30, perhaps because they lack information, which may be contributing to lengthening the school-to-work transition. There are also some misperceptions about educational pathways (e.g., the relative ease of continuing to university from different tracks); educational qualifications for certain occupations; and the earnings returns to some educational levels. Finally, both exposure to and the salience of career orientation activities is very low: few people reported having participated in them, even though they are part of the secondary school curriculum. Since important career decisions are made quite early in life, in particular whether to pursue vocational or general education (in 9th grade), activities that help students make good choices would be valuable in lower secondary school and throughout the different levels of education, taking into account the most relevant types of information and the delivery mode for each target audience.

Information services are likely to be particularly important for Moldovan children and youth from more vulnerable backgrounds. As demonstrated by the MJSDS data, children with less-educated parents are likely to face more information deficits than their more privileged peers. Evidence from other countries suggests that these and other vulnerable groups, such as girls, rural youth, and school dropouts, may also be more constrained in their choices by social norms and more vulnerable to "aspiration traps." Experience from OECD countries suggests that preventive and early interventions to reach these groups are likely to pay off. Examples are measures to increase the awareness and accountability of schools, especially teachers and those directly involved in career orientation, to identify vulnerable individuals, or to set up follow-up services for school leavers (OECD 2004).

Since children value the guidance and opinions of adults, information services would benefit from engaging young people's social networks, such as parents, family, and the community. MJSDS respondents emphasized the role of parents and, to a lesser extent, other family members and the surrounding community in providing advice on educational and occupational decisions. Evidence from other countries shows that giving parents information on educational pathways, labor market trends, and the returns on education is vital. Interventions that make parents partners with a direct role in career orientation activities—for example, by providing them with guidance materials to study and discuss with their children and to inform a joint action plan for the short, medium, and long term—can improve both the bonds between parents and children, and the ability to plan careers, make decisions with respect to those plans, and gather relevant information on education and occupation (Palmer and Cochran 1988). An experiment in (mostly) deprived neighborhoods in Paris, France, found that information meetings in junior secondary school between school principals, low-performing students, and their parents resulted in students better adapting their planned educational choices for high school to their expected grade outcomes and thus reduced grade repetition and dropouts (Goux et al. 2014). More generally, examples across Europe suggest that coordination of many different stakeholders is needed to improve education and labor market outcomes: schools, parents, community groups, mentors/role models, and employers (CEDEFOP 2010).

Effective career guidance services would provide an interface with employers to ensure practical content and exposure to the world of work. Participants in the MJSDS placed a high value on real job experience not only as a way to find out more about jobs in making career decisions but also to facilitate job search by providing an interface with employers and to impart labor market skills. In addition to career

orientation in schools, survey respondents were interested in insights and hands-on job experience, through both in-school activities, such as guest lectures by employers and workers, and out-of-school activities, such as career and job fairs, workplace visits, and internships. From the perspective of reducing skills mismatches, active involvement of the private sector—future employers—in activities that support educational and occupational decisions is also critical.

Based on these preliminary conclusions, Table 4. 1 summarizes useful examples of programs from OECD and other countries. Some policies can be easily put in place in the short term; others need more preparatory steps and are thus long-term objectives. Policies with short-term impact can (1) make the available education and labor market information more accessible, user-friendly, and relevant; and (2) improve existing career guidance tools. Policies with medium-term impact can (3) identify and assist students who may be at higher risk of information gaps, and (4) reach out to potential advisers, such as parents or community leaders. Finally, the impact of some policies is more likely to be observed in the longer term; these focus on (5) strengthening partnerships with employers, and (6) creating innovative career guidance tools. Most of the programs listed in Table 4. 1, which are described more fully in Annex D, have not been rigorously evaluated; rather than being best practices they are simply examples that can be considered in designing programs for Moldova. Since Moldova lacks information on the coverage and effectiveness of interventions being applied within the country, monitoring and evaluation would be a key part of any strategy to make the system more efficient (Box 4. 1).

Box 4. 1: Monitoring and Evaluation of Career Orientation Systems

There is a general lack of evidence about what works for career orientation. Rigorous evaluations would require, among other things, follow-up of individuals over time to observe the effect of different types of career orientation practices on earnings, job satisfaction, and how well matched education is with actual occupations. Moreover, good monitoring and evaluation is essential to continuously update the relevance of career orientation systems. Some approaches that Moldova could consider are

- Surveys of student and parent awareness of and satisfaction with in-school career education and guidance programs;
- Tracer surveys by schools to follow their students' educational and occupational paths;
- Consultations with employers to ensure that labor market trends are well integrated in career orientation programs and that skills deficits identified in the labor market are being addressed in the curriculum; and
- Drafting of national guidelines with clear assignment of responsibilities to such stakeholders as schools, public employment services, employers, and students; clear results-based targets; and dissemination of the results to students, parents, and employers.

Source: OECD 2004.

Table 4. 1: Policy Experiences from other Countries

OBJECTIVE	IMPACT TIME-FRAME	INITIATIVE	INTERNATIONAL EXAMPLES
Making the available education and labor market information accessible, user-friendly, and more relevant	Short term	Labor market observatories	Poland's regional labor market offices operate as labor market observatories, and direct their information to a wide range of stakeholders: Regional and local authorities, regional and local labor offices, employers, investors looking for information on workforce skills, and secondary educational and training institutions. These offices provide the results of the labor market monitoring and analysis in a variety of forms: regular bulletins and reports, occasional studies, workshops, etc. The information produced is made available on the individual websites of Regional Labor Offices.
Improving existing career guidance tools	Short term	Providing information and career orientation to students at a relatively young age	In Switzerland, during lower secondary education students attend career orientation and vocational preparation classes in which they are encouraged to think about their future and analyze their career preferences and capabilities and where they, if necessary, can get additional support from information and guidance centers.
			In Austria, for 7th and 8th graders in all schools, career orientation is a mandatory subject, consisting of 32 weekly lessons. The curriculum can be taught as a stand-alone subject or integrated into other compulsory subjects. Much attention is also paid to "early work experience" in local businesses or institutions. These job placements are allocated at least 30 lesson hours in the 7th and 8th grade, in addition to the mandatory 32 hours of career orientation.
			In Finland, the Grade 7 (ages 13–14), curriculum includes three days of work experience, often at a parent's workplace or a business selected from a local database. The mandated days of work experience rises to 5 for grade 8 and 9 for grade 9.

		Improving the internship system in vocational and university education	The apprenticeship approach that is integral to vocational training in Germany involves a dual training system where job training is completely integrated through part-time on-the-job training in companies and part-time classroom instruction in vocational schools. The emphasis is on practical training, with only about 20 percent allocated to theoretical, in-class training. Apprenticeships are in recognized learning companies that are subject to national training regulations, and with quality assurance by chambers of skilled crafts and of industry and commerce. The success of the dual system lies in the ownership of the private sector and other partners, and in the combination of local needs analysis with overarching educational and economic strategies.
			U.S. universities like Northeastern and Drexel are well known for providing "cooperative" education, which involves students completing mandatory internships with companies for 2–3 semesters during undergraduate studies. These internships provide students with valuable work experience, often in large companies, and enable them to expand their networks for future job searches. Due to cooperative education, university students often move seamlessly from graduation to employment.
		Job and career fairs	In Austria, three large career fairs are held each year in order to cover all target groups: Students in vocational training, tertiary education, and adult education. The fairs attract thousands of people, involve hundreds of professional and trade organizations, employers, trade unions, and educational institutions, and are strategically marketed to schools and the community.
		Alumni visits to schools	In Finland, alumni frequently visit upper secondary schools to provide information to current students about their experiences at university and in their careers.
	Medium term		

identifying and assisting students that may be at higher risk of information gaps		Early identification of needs for academic support and targeted provision of such support.	In the United Kingdom, young people with special educational needs or disabilities are informed of education, training, and employment opportunities on offer, and are directed to educational programs that enable their transition into paid employment.
			Community-based programs in the U.K., such as Mosaic provide volunteer-based mentoring to primary and secondary students from vulnerable backgrounds to help them realize their talents and potential.
			IntoUniversity are local learning centers in the U.K. that offer an innovative program that helps young people from disadvantaged backgrounds to attain admission to a university or in another chosen aspiration, providing them with primary and secondary academic support, with learning experiences focusing on one topic/subject area, and with mentoring programs involving university students or graduates in full-time employment.
		In-school support by external career counselors from employment services	In Germany, in-school teachers, psychologists, and counselors is supported by outside experts. Specialized counselors visit schools and work with in-school career counselors. They also host school field trips to their offices so that students can familiarize themselves with the resources available at the employment centers. Career counselors are each assigned to about five secondary schools, and given their knowledge of local employer needs, they are in a position to advise students about labor market trends, the working conditions of different jobs, and the skills required by different local employers. Their networking and coordinating role is thus an essential element of the German career orientation system.
		Promoting school social accountability	In the UK, schools are accountable for providing information to students and for collecting information on the educational and career outcomes of their graduates. All registered students are provided with independent career orientation from grade 8 (12–13-year-olds) to grade 13 (17–18-year-olds).

			In Austria, schools are required to coordinate career orientation for their students, creating an implementation plan for career orientation activities and documenting the implementation of these activities.
		Pop-up services for difficult to serve areas	In Germany, the Federal Employment Office installs temporary job centers to service remote regions.
			In South Africa, employment services operate mobile kiosks (in buses) open to both employers and job seekers.
			In Russia, Mexico, Argentina, and Turkey, public employment agencies use partnerships with local governments, nongovernmental organizations (NGOs), and private agencies to deliver services to small remote communities.
Reaching out to potential advisers	Medium term	Engaging parents in counseling activities	In Austria, as early as 5th grade counselors are available for all students and their parents to answer general questions about future education and career options. Child-parent-teacher talks in 7th and 8th grade also ensure that parents are involved in the discussion of their children's strengths, challenges, and inclinations.
			In the UK, Information, Advice and Guidance services and events are provided for young people aged 14–19, bringing together them, their parents, and training providers. Events include supporting Year 9 option choices, education tours, mentoring projects, career fairs, and staff conferences.
			A recent World Bank–funded project in Azerbaijan included design and conduct of a media advocacy campaign to help change the mindset of parents about the future of their children.

Strengthening partnerships with employers	Long term	Partnerships between schools, employers, and/or Public Employment Services for student interaction with firms through, e.g., visits to schools by employers, workers, and alumni, work place visits, and internships.	Germany has close school-employer collaboration, with the federal government, the Länder (states), municipalities, NGOs, and private providers of career orientation services all having important roles in the system, which is led by the Federal Employment Office (FEO). Also, the dual education curriculum focuses explicitly on exposure to work as a means of providing information on education and occupational options. Bringing all stakeholders—parents, alumni, representatives from the business community, trade unions, and non-government organizations—into the process enables the system to work.
			In the UK, schools can use free resources such as Inspiring the Future to connect with volunteer employers and professionals from all sectors and occupations and invite them to come to state secondary schools and colleges to talk to students about their jobs. Employers also help with career talks, job fairs, and visits to workplaces. Business Class, run by Business in the Community, provides a systematic framework for firms to support young people facing social disadvantage by forming long-term partnerships with the schools they attend. Schools can also sign up with Career Academies UK, which offer structured programs providing 16–19-year-olds with access to the world of work; volunteer employers provide classes, mentoring, workplace visits, and internships at their firms.
			In Austria, schools must set up their own career orientation systems and cooperate closely at the regional level with such stakeholders as the Public Employment Service and regional economic and business associations.

Developing innovative career guidance tools	Long term	Online information on educational pathways and institutions, such as school rankings and self-assessment and decision-making tools.	In Mexico, "Career Orientation in my Memory" (*Orientación vocacional en mi memoria*) consists of an information package – self-assessment tools, lists of education options for different interests and abilities, and descriptions of job characteristics for different occupations — and provided it to high school students on a memory stick and also online.
			Bulgaria's Mycompetence project has put in place an online system for self-assessment of competences and information on those that are required for different occupations. The website gives students and job-seekers catalogues of different sectors and jobs, a map of competences, professional standards for key positions, self-assessment tools, and an E-learning platform for different skills.
			The USA College Navigator gives students access to information on more than 9,000 colleges, universities, and postsecondary vocational and technical schools. Users may search the database by location, type of institution, majors offered, availability of housing, and many more options. Users can also select several school profiles for side-by-side comparison, and all search results can be saved. This is a product of the National Center for Education Statistics (NCES), part of the U.S. Department of Education's Institute of Education Sciences.
			In the U.S. Peterson's is a well-known publisher of guides to colleges that provides a free searchable resource for information on a variety of training and education programs, undergraduate and graduate programs, professional schools, and distance education programs. Bestcourse4me provides information on wage returns to particular degrees *and* universities.
		Online resources to guide	CareerOneStop is a U.S. government resource that gives job seekers a variety of tools and resources for career exploration, education, job search instruction, and salary information.

		occupational choices	USA Vocational Situation is often used to measure career-related knowledge and certainty in career decision-making. It identifies sources of uncertainty (e.g., lack of clarity on the characteristics of different occupations, on how to choose an occupation, or on what to study to qualify for a certain occupation) and constraints (e.g., financial or social).
			UCAS is the UK Universities and Colleges Admissions Service, which manages applications for UK undergraduate courses and specialist applications for postgraduate courses, conservatories, and teacher training. To connect students to higher education, UCAS provides impartial advice on post-16 options. Unistats provides official data for different undergraduate courses according to satisfaction scores in the National Student Survey, as well as jobs and salaries after study.

What Can Moldova Learn from other Countries?

The public policy rationale for removing information constraints is that doing so can make both education and labor markets more efficient at relatively low cost. Interventions that provide educational and labor market information enable more optimal investments in human capital and a better allocation of resources in the labor market. Indeed, information-related interventions have proven to be a cost-effective means to address specific labor market challenges (Kuddo 2009; Betcherman, Dar, and Olivas 2007).

An effective system of career guidance in Moldova would require close coordination among all stakeholders and exposure to the world of work as an integral part of education and training. The MJSDS revealed both perceived and actual information gaps related to factors that matter to educational and occupational decisions. Although it is difficult to decide on best practices without more information on coverage, and ultimately labor market outcomes, two themes emerge: The importance of close collaboration between labor market actors, social partners, schools, and public agencies, and the importance of practical, hands-on experience of what a job is.

Effective career guidance systems are anchored in strong networks. Career guidance systems designed to reduce labor market mismatches depend, of necessity, on coordination between numerous actors—educational institutions, employers, students, public employment agencies, etc. One central lesson from the review of different international initiatives, whether in terms of providing information, identifying needs, or increasing links to the world of work, is that the most comprehensive systems (e.g., in Germany) rely on close collaboration between all the actors. The business community in particular is closely involved in education and training systems and career orientation.

Providing early, frequent, and ample exposure to the world of work is an efficient way for students to learn about the work experience in general, the conditions of different jobs, and how well jobs match their own inclinations. Interactions between students and potential employers help build networks and provide practical experience, which can help students become more competitive in the labor market. It also gives students useful information for deciding on a career path, allowing them to test whether they are suited to different occupations. Firms and youth can meet in many different ways, for instance in school, through informal visits to enterprises, and through apprenticeships and internships. Rallying enterprise support and engagement for these activities entails a close dialogue with the private sector to market the advantages of closer collaboration and make enterprises partners in the design of career guidance systems.

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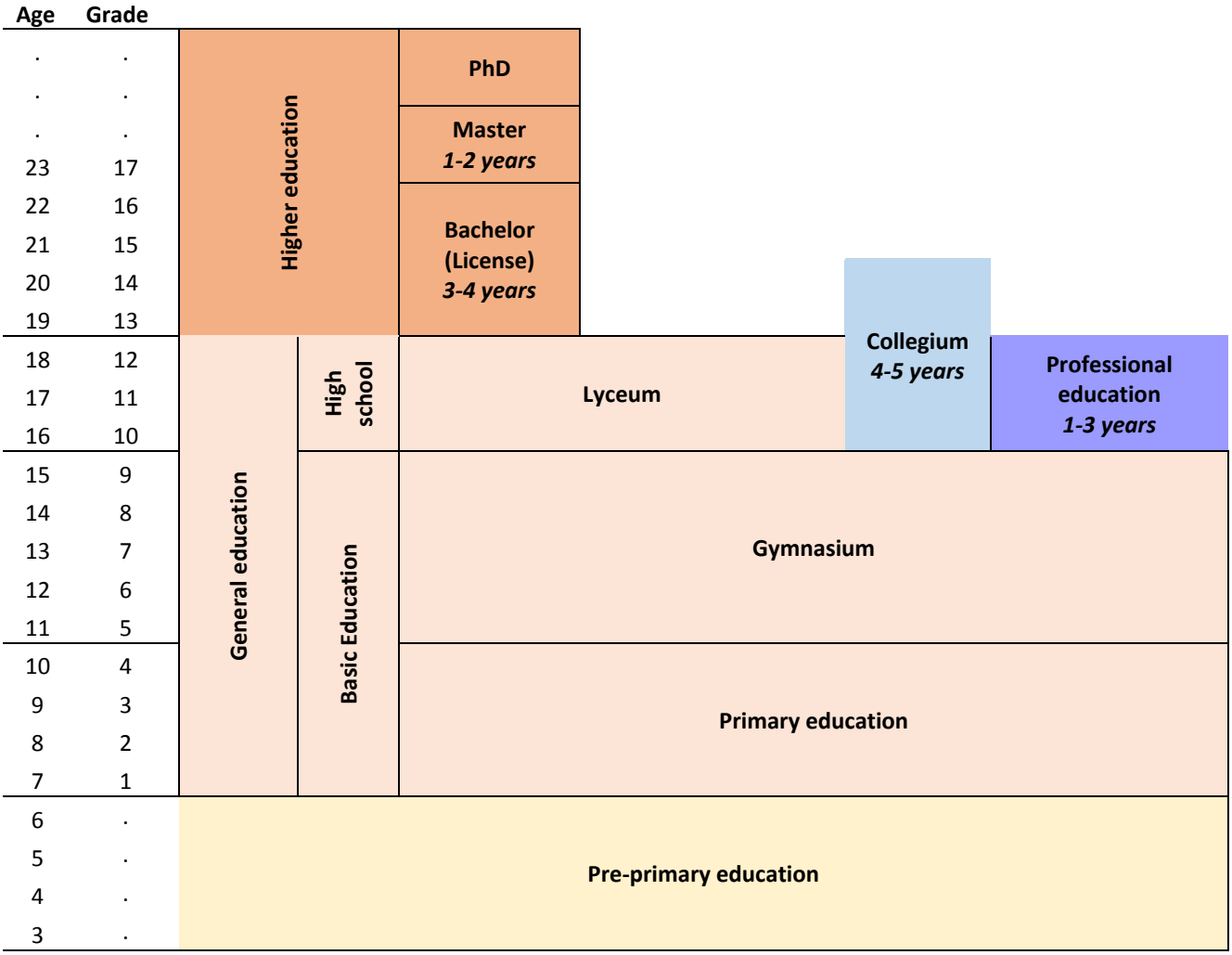
Annex A: The Moldovan Education System

Figure A.1: The Moldovan Education System



Source: Education in the Republic of Moldova, statistical publication for 2014/2015

Table A.1: Students and Institutions in Moldova by Educational Level, 2014/15 School Year

Level	No. of Students	%	% Females	% Rural	No. of public schools	No. of private schools
Pre-primary education	130,937	21.5	48.1	54.3	N.A.	N.A.
General education, *of which*	340,977	56.0	49.4	54.5	1332	15
Grades I-IX	300,841	49.4	48.4	58.4		
Grades X-XII	40,136	6.6	57.1	25.0		
Professional schools	17,508	2.9	31.2	N.A.	59	2
Collegiums	29,810	4.9	52.8	N.A.	41	4
Universities	89,529	14.7	57.5	0	19	12
Total	*608,761*	*100*	*50.5*	-	*1451*	*33*

Source: *Education in the Republic of Moldova*, statistical publication for 2014/2015

Table A. 2: Distribution of Students by Type of Funding, 2014/2015 School Year

	Professional Schools		Public Collegiums		Public Universities	
	No. students	%	No. students	%	No. students	%
Total, *of which*	17,508	100	27,993	100	72,474	100
Paying tuition	682	3.9	11,301	40.4	45,004	62.1
Subsidized, *of which*	16,826	96.1	16,692	59.6	27,470	37.9
Receiving a scholarship	16,180	92.4	10,987	39.2	14,547	20.1
Accommodated in boarding schools	8,586	49.0	11,859	42.4	17,083	23.6

Source: *Education in the Republic of Moldova*, statistical publication for 2014/2015
Note: Information is presented without educational institutions from the left side of the river Nistru and Bender municipality. Data are for the beginning of the school year.

Table A. 3: Students in Highest Level of Education, 2014/2015 School Year, Percent

		Admitted to		
		Professional school	Collegium	University (Bachelor's degree)
Graduates from	Gymnasium	85.5	86.8	-
	General secondary school	-	0.9	0.9
	Lyceum	14.5	11.7	79.2
	Professional school	-	0.5	-
	Collegium	-	-	18.7

Source: *Education in the Republic of Moldova*, statistical publication for 2014/2015.

Table A.4: Top 10 Fields of Study by Schooling Option

Professional School		Collegium		University (Bachelor's degree)	
Field of study	**%**	**Field of study**	**%**	**Field of study**	**%**
Cook	13.0	Economy	14.9	Economics	24.8
Mechanic on repair of automobiles	11.6	Medicine	12.7	Education	15.8
Electrogas welder, rigger	7.0	Transport	9.1	Law	15.5
Plasterer	6.9	Services	6.4	Engineering and related activities	12.1
Computer operator	5.9	Information science	5.8	Medicine	4.8
Seamstress	5.4	Teaching	5.3	Architecture and construction	4.6
Electrical engineer, repair and service of electric equipment	4.2	Mechanics	5.1	Humanities	3.2
Cutter	3.0	Construction	5.1	Manufacturing and processing	3.1
Joiner	2.7	Electrical engineering and energetics	3.9	Public service	2.3
Tractor-operator-machinist for agricultural production	2.2	Technology of food processing	3.8	Political science	2.2

Source: *Education in the Republic of Moldova*, statistical publication for 2014/2015
Notes: (1) Figures from "Higher Education in Medicine and Pharmacy" have been merged with the information on other fields of study for "First Cycle Licentiate." (2) Information is presented without educational institutions from the left side of the river Nistru and Bender municipality. Data are for the beginning of the school year.

Annex B: Sampling Methodology

Although the sample of survey participants is not large enough to be statistically representative, in its sampling the MJSDS tried to capture as much variation as possible across urban and rural communities and socioeconomic backgrounds, randomizing respondent selection whenever possible. Participants were selected in two stages, based on the information available for each target group, and in sequential order.

The sample for the individual interviews was selected first. For students, the MJSDS aimed at capturing variations by location and institution quality, approximated by the success rate in the 2014 BAC exam of the students from each institution. Because the purpose of the information gathered from the out-of-school youth who are jobless or in occasional jobs was to complement the insights of the 9th and 12th graders, they were selected from the same communities as the students.

The sample for participants in focus groups was then defined. For the 9th and 12th graders, given that the number of communities surveyed in the individual interviews was large enough (23), the focus group participants were selected from a sub-sample of the same schools. Additionally, the insights of these students were complemented with the ones of teachers and parents of 9th and 12th graders and out-of-school youth who are jobless or in occasional jobs from the same communities. On the other hand, for older students, since the number of communities from which individual interviews were collected was smaller (3 for professional school and collegium and 4 for university students), focus group participants were selected from institutions not represented in the individual interviews. The insights of these older students were complemented with focus group discussions with parents of professional school students and with out-of-school youth who have made a complete transition to the labor market; both of these groups were selected from the same communities as the students.

Table B. 1 and Table B. 2 summarize the sampling methodology employed for interviewees and focus group participants, and

Table B.3 shows the distribution of respondents by location and gender.

Table B. 1 Methodology for the Individual Interview Sample

Group type	First stage		Second stage	
	Sampling Frame	Selection Method	Sampling Frame	Selection Method
9th and 12th graders	Public schools teaching both 9th and 12th grade[1]	Random selection, stratifying by region, size of the locality (large city, urban, rural) and Baccalaureate exam quartile.	All students in 9th and 12th grade	Random selection, stratifying by grade
Out-of-school youth who are jobless or in occasional jobs		Catchment areas[2] of the lyceums participating in the survey	Individuals aged 18–30 who are unemployed,	Respondents were selected by the local social assistants.[3]

			inactive, or in occasional jobs	
Collegium students	Public urban collegiums[4]	Random selection, stratified by BAC quartile.	All students in their last year of studies	Respondents were selected through a contact person (director or deputy director), who chose an equal number of students in each field of study and a mix of good and bad students.
Professional school students	Public professional schools[4]	Professional schools teaching the highest number of specializations	All students in their last year of studies	
University students	All universities in Moldova	Random selection, stratifying by type of ownership (3 public universities and 1 private).	All students in their last year of studies	

[1] Excluded were sport lyceums, boarding schools, professional lyceums, theater lyceums, evening lyceums, theological seminary, and lyceums situated in Transnistria.

[2] The notion of catchment area, a heritage of the Soviet educational system, is used mainly to estimate the number of students expected to attend the school given their residence. For rural localities the catchment area is better defined, since the Ministry of Education uses it in planning transport from the villages to the school. In urban localities, where catchment area is not used anymore because children do not necessarily attend the closest school, it was approximated by the neighborhoods of the lyceums participating in the survey.

[3] Because there is no official registry of individuals who are jobless or in occasional jobs, random selection was not possible. Therefore, selection of participants relied on informants, who for this particular target group are social assistants.

[3] Excluded were collegiums specializing in music, arts, choreography, and agriculture and the Ungheni collegium, which had participated in the pilot.

[4] Excluded were trade schools with 1-year programs.

Table B. 2 Methodology for Choosing the Focus Group Sample

Group Type	First Stage		Second Stage	
	Sampling Frame	**Selection Method**	**Sampling Frame**	**Selection Method**
9th and 12th graders (3 focus groups each)	Schools participating in the individual interviews[1] (2 focus groups each)	1 rural school that is rich and with informed students[3] 1 urban school with a higher proportion of students who felt uninformed	Students not participating in individual interviews	Random selection
	Poor rural schools without a lyceum[2] (1 focus group each)	1 gymnasium from the most deprived locality in Moldova and 1 lyceum nearby[4]	All students in 9th and 12th grade	Random selection

Teachers (2 focus groups)	Localities of the schools participating in the 9th and 12th grader focus groups	2 schools were selected for each focus group: the school participating in the 9th and 12th grader groups and a school nearby not covered by the individual interviews	Teachers of 9th and/or 12th grade	Mix of Civic Education teachers, master teachers, and school psychologists, stratified by school
Parents of 9th and 12th graders (2 focus groups)		Schools selected for the 9th and 12th graders' FGD	Parents of 9th and 12th graders	Participants selected by the school manager or other school representative
Out-of-school youth who are jobless or in occasional jobs (3 focus groups)	Communities of the schools participating in the 12th grader groups	Catchment area of the schools selected for the 12th grader groups	Individuals aged 18–35 who are unemployed, inactive, or in occasional jobs and who have looked for work after graduating from their highest educational level	Participants selected by social assistants[5]

Group Type	**First Stage**		**Second Stage**	
	Sampling Frame	**Selection Method**	**Sampling Frame**	**Selection Method**
Collegium and professional school students	Professional schools and collegiums that did not participate in the individual interviews	- Professional schools teaching with the highest number of specializations - Random selection of collegiums in the same localities as the selected professional schools, stratifying by BAC quartile	All students in their last year of studies	Participants from different fields of study selected by the educational institution manager or other school representative[6]
University students (3 focus groups)	Universities in Chisinau that did not participate	Random selection, stratifying by ownership (2 public, 1 private)		

	in the individual interviews			
Out-of-school youth who made a complete transition to the labor market	Universities in Chisinau and professional schools and collegiums in Cahul	1 university in Chisinau (1 group) 1 professional school and 1 collegium in Cahul (1 group)	Graduates aged 18–35, formally employed and satisfied with their jobs	
Parents of professional school students (1 focus group)	Professional schools selected for the student' groups	Professional school in Balti	Parents of professional school students	

[1] Excluded were schools where all 9th or 12th graders were surveyed in individual interviews.

[2] The purpose was to understand whether or not these students had different aspirations and faced different constraints than 9th graders who can continue studying in the same physical space through 12th grade, without incurring any additional costs.

[3] Students' information was assessed using the results of the individual interviews. The schools selected had higher or lower shares than average of students feeling informed enough to decide what to do next.

[4] Due to cost limitations.

[5] Because there is no official registry of individuals who are jobless or in occasional jobs, random selection was not possible. Therefore, selection of this group relied on informants who, for this target group, are social assistants.

[6] By the time the group discussions were conducted, professional school, collegium, and university students were no longer attending classes, so that random selection of participants from the classroom was not possible, and the selection had to rely on an informant, who in this case was the school manager or another school representative.

Table B.3: Sample Characteristics

Group type	Number of Respondents		Urban Respondents		Female Respondents	
	Individual Interviews	Focus Groups	Individual Interviews	Focus Groups	Individual Interviews	Focus Groups
9th graders	304	26	70%	35%	56%	46%
12th graders	306	24	70%	33%	63%	58%
Professional school students	95	24	100%	100%	26%	46%
Collegium students	103		100%		59%	
University students	102	25	100%	100%	60%	48%
Out-of-school youth who are jobless or in occasional jobs	203	21	54%	33%	67%	67%
Out-of-school youth who made a complete transition to the labor market	0	14	-	100%	-	43%
Parents of 9th and 12th graders	0	16	-	50%	-	94%
Parents of professional school students	0	7	-	100%	-	100%
Teachers of 9th and 12th grade	0	16	-	50%	-	88%

Annex C: Returns to Education

Table C.1: Correlates of Hourly Wages, Linear Regression, Both Sexes, by Age Group, 2014

	Aged 15–64 y.o.		Aged 25–34	
	(1)	(2)	(1)	(2)
Male	0.129***	0.129***	0.162***	0.162***
	(0.018)	(0.018)	(0.028)	(0.028)
Age	-0.002	-0.002	-0.021	-0.021
	(0.005)	(0.005)	(0.098)	(0.098)
Age squared/100	-0.003	-0.003	0.030	0.030
	(0.006)	(0.006)	(0.164)	(0.164)
Married	0.068***	0.068***	0.050*	0.050*
	(0.016)	(0.016)	(0.030)	(0.030)
Lower secondary or less (ISCED 0-2)		-0.154***		-0.206***
		(0.027)		(0.051)
Upper secondary, general (ISCED 3)	0.096***	-0.058**	0.146**	-0.060
	(0.029)	(0.024)	(0.056)	(0.046)
Upper secondary, vocational (ISCED 3)	0.154***		0.206***	
	(0.027)		(0.051)	
Collegium (ISCED 4)	0.386***	0.232***	0.313***	0.107**
	(0.029)	(0.021)	(0.056)	(0.052)
University (ISCED 5-6)	0.696***	0.542***	0.573***	0.367***
	(0.035)	(0.030)	(0.048)	(0.039)
Urban	0.133***	0.133***	0.085**	0.085**
	(0.028)	(0.028)	(0.035)	(0.035)
Center	0.081**	0.081**	0.043	0.043
	(0.036)	(0.036)	(0.048)	(0.048)
South	-0.036	-0.036	-0.118**	-0.118**
	(0.034)	(0.034)	(0.046)	(0.046)
Chisinau municipality	0.162***	0.162***	0.100**	0.100**
	(0.039)	(0.039)	(0.050)	(0.050)
Constant	2.150***	2.303***	2.515*	2.721*
	(0.104)	(0.101)	(1.444)	(1.441)
Observations	14,762	14,762	2,759	2,759
R-squared	0.309	0.309	0.276	0.276

Source: authors' calculations based on LFS 2014.