

CAREER AND TECHNICAL EDUCATION SERIES

Technical Careers in a Time of Crisis:

Perceptions of Essential
Career Paths in a Sample of
Young Adults in NYC

Margarita Olivera-Aguilar, Katrina C. Roohr, Steven B. Robbins,
Laura McCulla and Jennifer L. Bochenek



Technical careers as a path to economic recovery

We are experiencing an unexpected time of disruption and unemployment due to the COVID-19 pandemic. While a multitude of factors will be needed for the successful economic recovery of the country, investments in education, reskilling and upskilling will play an important role.

Career and technical education (CTE) — also known as vocational or technical education — offers students and young adults a clear, practical route from school to the workforce. It is short and affordable; has low barriers to entry; and directly applies to employers' needs — often leading to good, in-demand jobs (Carnevale, Jayasundera & Hanson, 2012). CTE includes a diverse set of programs and courses in high schools and community colleges that lead to skilled technical jobs (National Academy of Sciences, 2017) in areas such as health care, information technology (IT), transportation and logistics, and advanced manufacturing.

Interest in technical careers

Although we see ongoing opportunities in selected technical jobs, historically we do not see an equal response from young adults in pursuing skilled technical careers. According to the National Skills Coalition®, 52% of the jobs in 2018 were middle-skill jobs. These jobs require more than a high school diploma but not a bachelor's degree, and they are ideally aligned with CTE pathways. However, only 43% of U.S. workers are trained at that level (National Skills

Coalition, 2020). At the postsecondary level, we see that although 40% of the students in higher education in 2015 were enrolled in two-year institutions — which are an important avenue for acquiring technical skills — 80% of these students planned to transfer to a four-year institution (Jenkins & Fink, 2015). At the secondary level, Sublett and Griffith (2019) found that high school students take far fewer CTE courses than one would expect given the abundant CTE-aligned job opportunities. This indicates that many students may be missing out on important education and employment opportunities. Additionally, only one in six high school students concentrate on any CTE field¹ — suggesting a misalignment between students' course-taking patterns and the national and local economy (Sublett & Griffith, 2019).

There are many possible explanations for the lack of skilled workers and the mismatch in course-taking patterns and the job market, such as a lack of interest in CTE, a dearth of knowledge about what CTE is and can offer, missing information about local job markets or a mismatch between program offerings and employers' needs. In this research brief, we explore two possible factors that may be related to these mismatches: young adults' opinions about CTE and their opinions and interests about specific technical careers.

About this study

The purpose of this study was to explore several factors that young adults may consider when making career decisions through an online survey. We restricted our sample to individuals between 18

¹ CTE concentrators are defined as high school students who take 3 or more courses in a specific industry.

and 30 years old who were likely in the process of making a career decision or who had recently made one. For this reason, we focused on individuals who had earned at least a high school diploma, GED® or another equivalency, but who had not earned a bachelor's degree. The data were collected in the New York City metropolitan area² utilizing Qualtrics panels³ to recruit participants. Specific quotas were set for gender (i.e., equal representation for males and females) and race/ethnicity (i.e., 50% Whites, 25% African Americans and 25% Hispanics/Latinos⁴). We report results from a sample of 749 individuals⁵, with a roughly equal distribution by gender (46.2% male, 53.8% female) who were 47.3% White, 26.2% African American and 26.6% Hispanic/Latino.

The online survey asked about their opinions of CTE; their views about jobs in health science, IT, and transportation, as well as the jobs' relevance during the pandemic; and their interest in pursuing career paths in these industries. Previous research has shown a mismatch between the number of job offerings and the number of students who concentrate on these fields in high school in the NYC area (Sublett & Griffith, 2019). More specifically, while the health science industry accounts for 7.4% of job openings in the NYC metro area, it accounts for only 2.3% of the high school concentrations. In contrast, the IT field accounts for only 2.4% of jobs in the NYC metro area, but 12.5%

of the courses taken by students in this field. This field also accounts for 6% of high school CTE concentrators.

Considering the average annual wage of IT jobs is \$88,111 (as reported by Sublett & Griffith, 2019), it is not surprising to see students interested in exploring this field. The field of transportation, distribution and logistics also shows more high school CTE concentrators (26.6%) than jobs (7.1%) in the area, but the average annual pay for this type of job is only \$38,256. We decided to focus on these industries to explore whether the mismatches previously reported may be related to individuals' attitudes and interest in them.

Opinions and perceptions about CTE

We asked participants their general opinions about CTE to explore whether there are stereotypes about this path that could represent a barrier to pursuing a technical career. We found that participants have positive attitudes toward CTE; more than 60% of participants indicated that CTE involves challenging content or it helps prepare students for college (Figure 1). Our results also indicate that 20% of participants reported not having an opinion about CTE, highlighting the need to increase the efforts to provide information about CTE and its potential benefits.

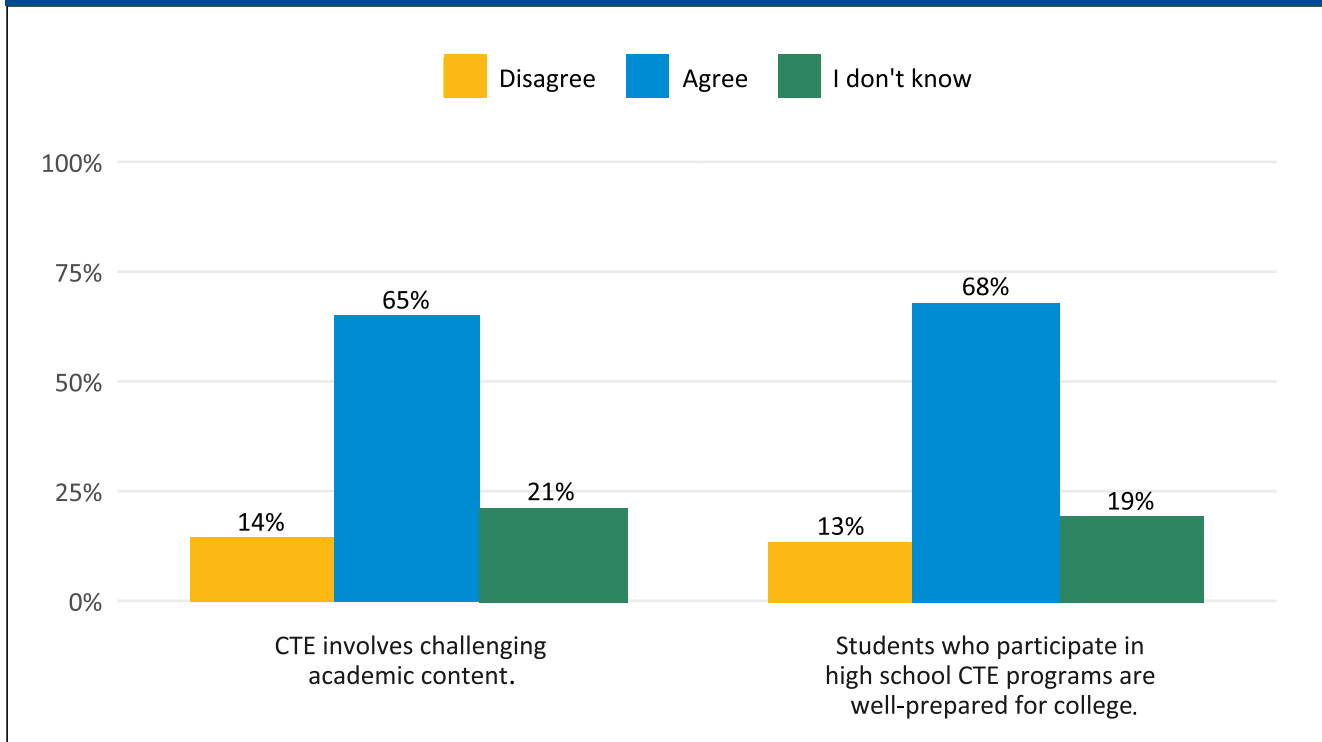
² The New York-Northern New Jersey-Long Island/NY-NJ-PA Metropolitan Statistical Area includes the cities of New York, N.Y.; Newark, N.J.; Edison, N.J.; White Plains, N.Y.; Union, N.J.; Wayne, N.J.; and New Brunswick, N.J. It also includes the N.J. counties of Middlesex, Monmouth, Ocean, Somerset, Nassau, Suffolk, Essex, Hunterdon, Morris, Sussex, Union, Bergen, Hudson and Passaic; the Pa. county of Pike; and the N.Y. counties of the Bronx, Kings, New York, Putnam, Queens, Richmond, Rockland and Westchester.

³ Qualtrics is an online survey tool that we used to build and distribute the survey and recruit participants. More information about Qualtrics panels can be found here: www.qualtrics.com/experience-management/research/research-panels-samples/

⁴ Note that we oversampled African Americans and Hispanic/Latinos, as we plan to conduct subgroup comparisons in future studies.

⁵ At the time this report was written, we had collected responses from 790 out of the targeted 825 participants. We discarded responses from 41 participants who after being screened for living in the NYC metropolitan area, reported in a subsequent question that they lived in a different metropolitan area.

FIGURE 1: Participants' perceptions about CTE high school programs



Note: These are results from a sample of 749 respondents. The agree category includes responses to “agree” and “totally agree,” while the “disagree” category includes “disagree” and “totally disagree.”

Opinions and interest in the industries of health science, IT and transportation

We randomly assigned participants to answer questions about health science, IT or transportation to explore whether the mismatches previously reported between the number of job offerings and the number of high school concentrators in these industries may be related to individuals' attitudes and interest in them. The questions targeted the criticality and stability of jobs in these fields, as well as the likelihood that participants would pursue education and professions in these industries. We found that 78% of participants responding to questions about health science jobs agreed that professions in this field have been critical during the pandemic, with smaller percentages of

agreement found for the criticality of jobs in IT (70%) and transportation (71%). Regarding job stability, more than 75% of participants believe that jobs in IT and health science represent stable employment during the pandemic, while this proportion is lower for jobs in transportation (57%).

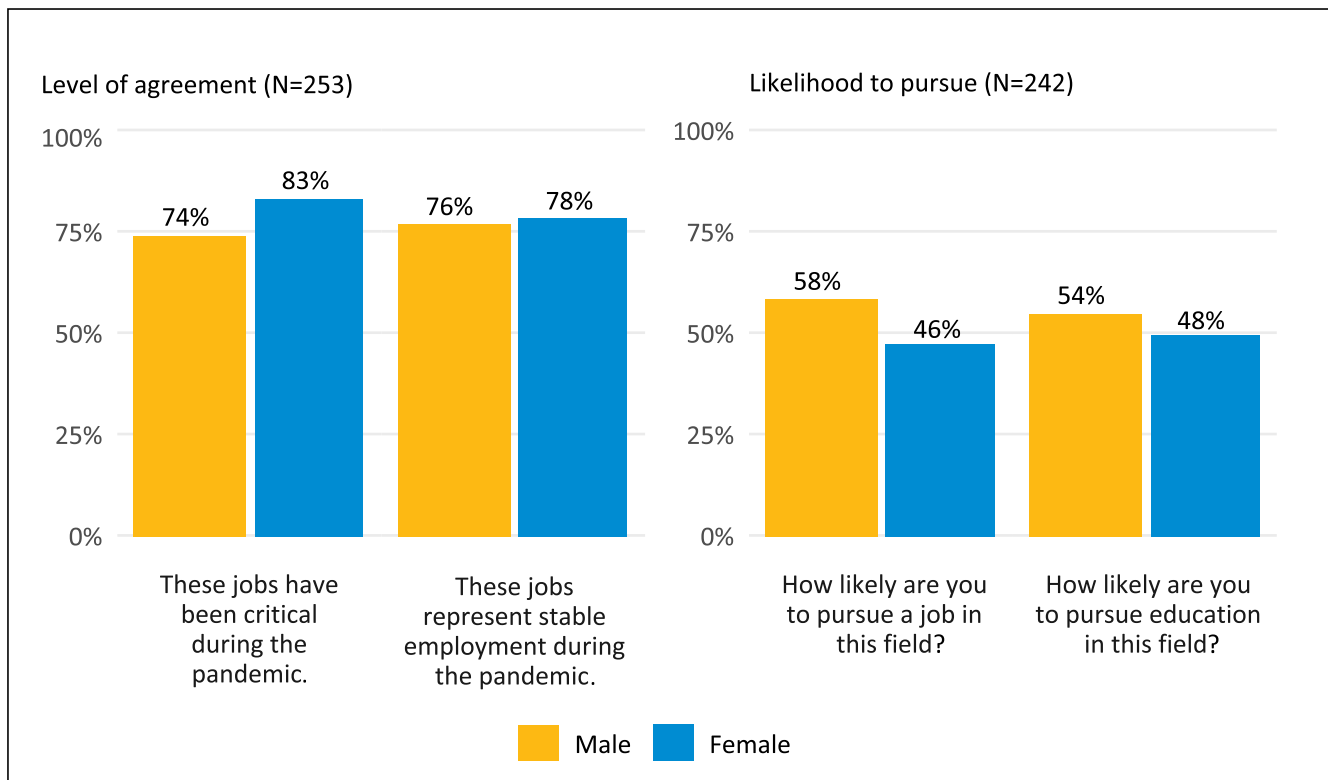
When looking at results by gender, we found that female participants tend to value health science and IT jobs similarly in terms of their importance and stability during the pandemic, but their self-reported likelihood to pursue jobs or education in IT was lower than for health science jobs. Forty-six percent and 48% of the female participants reported being likely to pursue jobs and education in health science, respectively (Figure 2a). In contrast, only 38% and 37% of female participants indicated interest in jobs and education, respectively, in the IT field (Figure 2b).

Furthermore, we found that while more male participants showed interest in pursuing jobs or education in IT (64% and 62%, respectively) compared to transportation jobs or education (54% and 47%, respectively), female participants did not show a strong preference for one field over the other (Figure 2c). Our results regarding females' lack of interest in pursuing IT careers are aligned with the reported underrepresentation of women in STEM fields; only 18.7% of computer science degrees, 42.4% of mathematics and statistics degrees, and 20.9% of engineering bachelor's degrees awarded in 2016 were earned by women (National Science Foundation, National Center for Science and Engineering Statistics, 2019).

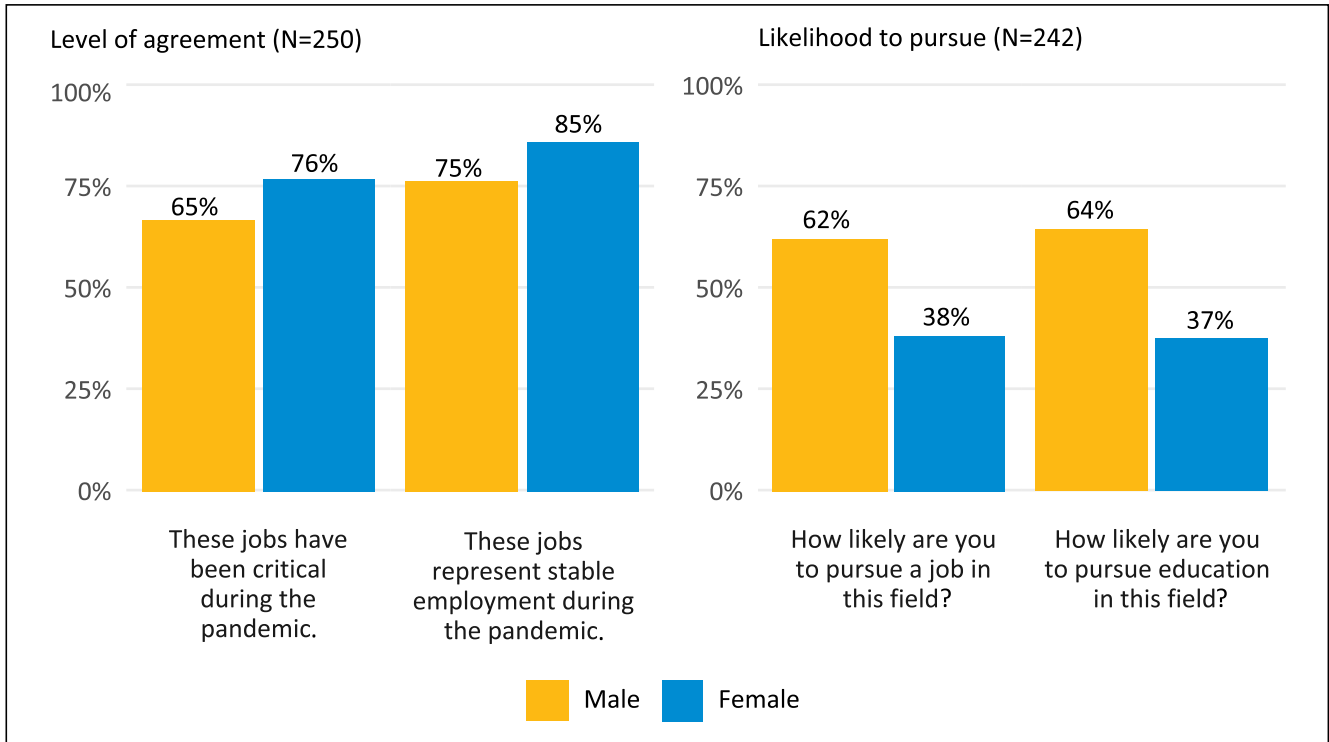
Considering that the responses we observed about the likelihood to pursue jobs or education in each industry may depend on several factors, such as employment status and postsecondary enrollment status, a better indicator of how much value they assign to these industries may be the likelihood that they would recommend that someone else pursue education or jobs in these fields. Regardless of their personal experiences or interest, if people perceive that an industry yields positive education or job outcomes, they may be more likely to recommend it to someone else. As expected, we found that more participants would recommend someone else to pursue a career in health science, IT or transportation rather than pursuing the professions themselves (Table 1).

FIGURE 2: Opinions about and likelihood to pursue jobs and education by gender and industry

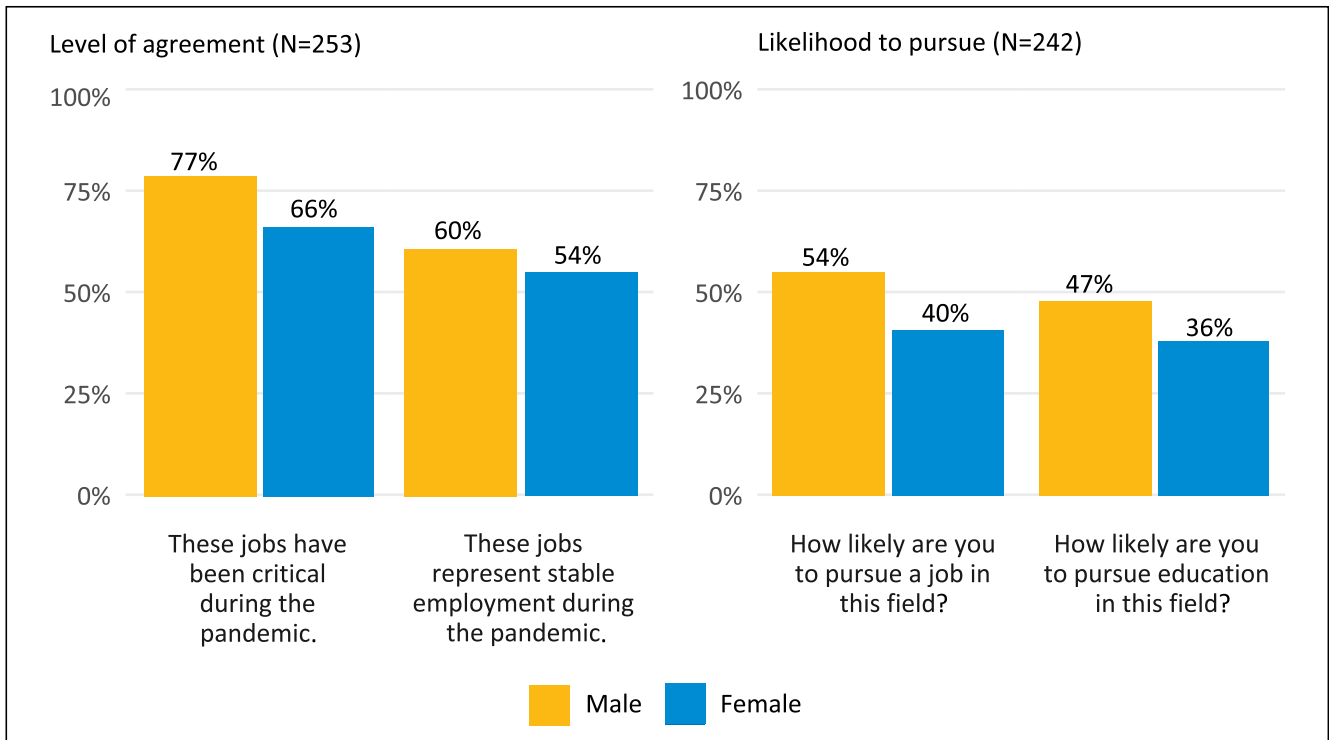
(A) HEALTH SCIENCE



(B) IT



(C) TRANSPORTATION DISTRIBUTION AND LOGISTICS



Note: The figures to the left (level of agreement) shows responses to the categories of “agree” and “totally agree.” Responses to “disagree” and “totally disagree” are not shown. The figure to the right (likelihood to pursue) shows responses to the categories of “likely” or “very likely.” Responses to “unlikely” and “very unlikely” are not shown.

TABLE 1: Self-reported likelihood to recommend someone to pursue education or a job in health science, IT or transportation

	LIKELY TO RECOMMEND SOMEONE TO PURSUE EDUCATION IN THIS FIELD		LIKELY TO RECOMMEND SOMEONE TO PURSUE A JOB IN THIS FIELD	
	MALES	FEMALES	MALES	FEMALES
HEALTH SCIENCE	77%	75%	72%	70%
IT	80%	64%	74%	62%
TRANSPORTATION	66%	49%	69%	50%

However, we also found the same general pattern in which female participants are not as likely to recommend education or jobs in IT or transportation as male participants.

There are several possible explanations for our findings. For example, males and females may differ in the accuracy of the information they have regarding the number of available jobs and salaries in these fields or in how they weigh various factors when choosing a field (e.g., meaningfulness of the job versus salary). We plan to conduct future studies to examine these results in more depth.

Conclusions

This brief discussed initial findings from a survey of a sample of young adults in the NYC metropolitan region that sought to better understand their attitudes toward CTE and technical jobs in specific industries. Initial results showed overall positive attitudes about CTE and optimism about the value of jobs in the industries of health science, IT and transportation. Our results showed differences by gender — with female participants reporting they are less likely to pursue jobs or education in health science, IT or transportation as compared to male participants. They were also less

likely to recommend jobs in IT or transportation as compared to male participants. These initial findings highlight the need to continue examining gender inequalities and access to job opportunities. We need to understand why women were less likely to pursue IT training and jobs even though they value this field as much as men.

Our results also lead to more questions about career decisions, such as whether young adults will pursue training opportunities as state and federal policies move to aid the unemployed and displaced. Historically the answer is mixed, with young adults expressing interest and value in targeted skilled technical jobs but not following through (Barshay, 2020). Another question that arises is how to encourage access and completion of CTE programs and courses in high school, technical careers in two- and four-year institutions, and on-the-job training opportunities. How do we mobilize a burdened and fatigued young adult population? One possible solution is to establish partnerships between local high school and community colleges to better align career-training pathways to emergent, skilled technical work. The role of proactive communication and career guidance will play a key role in informing young adults about career options. Education and workforce development

systems can also work with local employer groups to highlight on-the-job training opportunities and hiring expectations.

As the pandemic continues to disrupt the economy and create more inequality, it is critical to identify appropriate ways to create information sharing between educational institutions and the workforce to ensure an accurate understanding of opportunities, as well as create more access to training and future career options. We do not claim that our results are representative of the population of individuals between 18 and 30 years old in the NYC metropolitan area, and more research is needed to replicate our findings and ensure their generalizability. However, our results constitute an important effort in expanding our knowledge of some of the factors that may be influencing career decisions. As we continue our research studies, we hope to develop a better understanding of factors related to career decision making, which will in turn lead to further research and recommendations.

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