CESifo WORKING PAPERS

10791
2023

November 2023

Reaching for Gold! The Impact of a Positive Reputation Shock on Career Choice

Daniel Goller, Stefan C. Wolter

CESifo

Impressum:

CESifo Working Papers
ISSN 2364-1428 (electronic version)
Publisher and distributor: Munich Society for the Promotion of Economic Research - CESifo GmbH
The international platform of Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute
Poschingerstr. 5, 81679 Munich, Germany
Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de
Editor: Clemens Fuest
https://www.cesifo.org/en/wp
An electronic version of the paper may be downloaded
· from the SSRN website: www.SSRN.com
· from the RePEc website: www.RePEc.org
· from the CESifo website: https://www.cesifo.org/en/wp

CESifo *Working Paper No. 10791*

Reaching for Gold! The Impact of a Positive Reputation Shock on Career Choice

Abstract

We analyze the causal influence a positive reputation shock for a particular occupation may have on career choice. The measure of the positive reputation shock is the unpredictable event that a young adult from one's own country wins a (gold) medal in a particular occupation at the World Skills—the world championship of vocational skills. In an occupation with a gold medal won, searches for apprenticeship vacancies increase significantly by around 7 percent compared to occupations that do not win a competition. In occupations where only a silver or bronze medal is awarded, the effect is also positive and statistically significant, but less pronounced. More importantly, the increase in searches for apprenticeship vacancies in the current year has also led to around 2.5 percent more contracts being signed in the winning occupation, and there are indications that these apprenticeships have a better match between employers and employees (trainees).

JEL-Codes: I210, J220, J240.

Keywords: role models, reputation shock, career choice, labor supply, apprenticeship.

*Daniel Goller**
Centre for Research in Economics and Education, University of Bern / Switzerland
daniel.goller@unibe.ch

Stefan C. Wolter
Centre for Research in Economics and Education, University of Bern / Switzerland
stefan.wolter@vwi.unibe.ch

*corresponding author

We thank the SDBB | CSFO, especially Marc Fuhrer, for providing the data, valuable assistance, and support. We thank the Swiss State Secretariat for Education, Research and Innovation for financial support through its Leading House on the Economics of Education. The usual disclaimer applies.

1 Introduction

From an economic point of view, career choices are among the most important personal decisions. Even if decisions can be reversed or changed once they have been made, they are usually accompanied by high costs, i.e., investments in job-specific skills, and they largely determine the expected income, career advancement opportunities, and, of course, job and life satisfaction.

Not surprisingly, the determinants of career choice have long been the subject of research in a wide range of scientific disciplines, not just economics. Of course, this choice depends on personal career preferences, skills, and gender, but also personality traits and non-cognitive skills. Furthermore, and depending on the age at which the decisions are (or have to be) made, the important influence of parents, teachers, and peers is also well documented, and, finally, the institutional conditions under which the decisions have to be made play a decisive role.

Compared to the determinants mentioned, the academic literature on the role of the reputation of a particular profession on the decisions of people in the career choice phase is much less comprehensive. This paper aims to contribute to this strand of literature by examining the influence of a positive exogenous shock on the reputation of a specific occupation on the interest, decisions, and stability of the choice made. The influence of occupational reputation is examined using the example of the career choice of young people in Switzerland, who have to decide on a specific occupation at the end of compulsory schooling if they choose the vocational track at the upper secondary level, which around two-thirds of young people in Switzerland do.

There are three reasons for choosing this specific subject to study the influence of an occupation's reputation on the choice of an occupation. First, these are high-stakes decisions. Choosing an occupation from more than 200 options represents an investment of at least three and, in many cases, four years. Even if many young people later change careers, either through

further training or tertiary education, such changes mean that, in the worst-case scenario, they lose a substantial proportion of the career-specific skills they have acquired (Eggenberger, Janssen, & Backes-Gellner, 2022). Therefore, choosing a specific apprenticeship is generally a more far-reaching decision than choosing a field of study, which often leaves various career options open.

The second reason is the availability of a specific data source ideally suited to this question. Most training places companies offer are registered on a national platform. Accordingly, most young people deciding on an apprenticeship look for vacancies on this platform. All online search queries are registered and available for this study. Each search query for an apprenticeship vacancy includes three pieces of information that we used: the exact training occupation, the location or region in which the company is located, and the exact time of the query. We merge the latter into daily queries. This data set has two decisive advantages over some of the alternatives used. On the one hand, the search queries do not simply show an interest in an occupation or a need for information, as would be shown by search queries on search engines. Individuals here are looking specifically for open training places in a particular occupation, i.e., for information on whether a company in their vicinity offers a training place in their desired occupation. On the other hand, the temporal structure of the data makes it possible to distinguish precisely between the frequency before and after the reputation shock. In most other cases, the timing of the shock can be determined quite precisely, but not the behavior on which the shock should have an effect.[1] This is particularly important in the case presented here because our reputation shock occurs on different days for different occupations.

[1] A topically comparable paper (Di Pietro, 2018) shows the influence of a television competition "MasterChef," a television show featuring celebrity chefs for becoming master chefs on the choice of this occupation. While the paper is able to identify temporarily random treatments of the population (in Italy), the impact can “only” be measured through the regional differences in the number of yearly enrollments in hospitality and catering

Thirdly, we not only have the exact figures on the apprenticeship contracts concluded in the training year following the reputation shock, but also, thanks to the national longitudinal statistics based on individual data, information on the stability of the training contracts concluded in a specific training year and specific training occupation.

Last but not least, we need a reputation shock, which should be exogenous to draw causal conclusions from the correlation between shock and behavior. This exogenous shock is winning a (gold) medal at the WorldSkills Championships, something like the Olympic games for professions. As we can show, this is an exogenous, unanticipated shock for three reasons. Firstly, because a comparison of the different years in which the WorldSkills were held shows that—relevant to our case—the success of the Swiss varied greatly, i.e., it is impossible to estimate ex-ante whether the Swiss would win any medals at all. Secondly, there are only a few cases where a gold medal was won in more than one competition in the same occupation, i.e., even if the chances of Swiss competitors winning a medal were generally considered high, it would not be possible to anticipate in advance in which specific occupation this win would occur. Thirdly, in contrast to sporting events, which have given rise to similar studies, the public has no track record of the competitors. This is because competitors usually only take part in WorldSkills once in their lives. Based on the competitor's performance in the national environment, it is therefore impossible to draw any conclusions about how they will perform in the international competition. All this together leads us to the reasonable assumption that winning a (gold) medal is a random shock to the reputation of a profession.

The crucial question that forms the hypothesis of this paper is, of course, why winning a medal at an international occupational competition should represent a positive reputational

schools. His study aligns with other studies claiming that media attention can affect occupational aspirations and individual vocational choices (Gehrau, Brüggemann, and Handrup, 2016; Zopiatis and Melanthiou, 2019).

shock[2] for an occupation and why this should influence young people's choice of occupation. Our hypothesis is based on the positive effects of the perceived social status, see, e.g., contributions as early as Goldthorpe and Hope (1972), the prestige of professions, and the role model effects[3] documented in the literature. When choosing an occupation, young people (but also adults) pay attention to how it is perceived by society. Social status shows how highly an occupation is valued by society, and we assume that the media attention given to medal winners has a (at least temporary) positive effect on the social status of an occupation. It is also crucial for the impact channel that the winners of these medals are young people "like you and me" (Lockwood & Kunda, 1997). If the winners stood out due to specific characteristics, such as exceptional academic performance, then they would have a limited role model effect, as the young people on whom the award is intended to have a positive impact would assume that these achievements are beyond their own capabilities.[4]

[2] That the reputation and prestige of professions are subject to exogenous shocks has also recently been demonstrated during the COVID-19 pandemic (Kramer & Kramer, 2020).

[3] Role models may challenge dominant stereotypes and inspire individuals to set new goals. In education, role models are found to affect educational attainment (Riley, 2022), performance in standardized tests (Lim & Meer, 2017), graduation success in high school (Gershenson, Hart, Hyman, Lindsay, & Papageorge, 2022), or major choices in college (Canaan & Mouganie, 2023). Besides educational outcomes, role models can also influence career aspirations (Beaman, Duflo, Pande, & Topalova, 2012) and occupational choices (Kofoed & McGovney, 2019). To develop their professional identity, young people look to role models (Gibson, 2003). Role models represent the possible, such as being successful in a profession, and potentially inspire others to pursue or evolve a goal and increase the perceived similarity to the role model (Gibson, 2004).

[4] There is a strand of literature that examines whether a demonstration effect of elite sports affects sports participation in the population (compare, e.g., Frick and Wicker (2016) or Weed et al. (2015)). There are two key differences between the setting in these studies and ours. First, elite athletes are perceived as far from what an ordinary human being can achieve; their success does not seem very attainable compared to our role models, people like you and me (Lockwood & Kunda, 1997). Second, the relevance of the affected decision is not comparable. Starting an apprenticeship in a certain profession is a considerably more fundamental decision than joining a handball club, for example.

We find that the positive reputation shock increases the potential labor supply in the affected occupations, as shown by about 7 percent more search queries for their online job market postings. This increase in potential supply affects the equilibrium outcome in the apprenticeship market for the affected occupations in two ways: First, 2.5 percent more apprenticeship contracts are signed, and second, the quality of apprentices-employer matches increases. For the latter, we document an increase of 1.4 percent in the completions of apprenticeships in the regular time for the affected occupations. Importantly, we find these effects predominantly in regions of Switzerland where the dual apprenticeship system is less prevalent, which helps generalize the results for countries where apprenticeships are less common than in Switzerland.

The rest of this work is structured as follows. A short overview of the setting is contained in Section 2. Section 3 introduces the databases. Sections 4 and 5 present the empirical strategy and results of the main analysis. Results and implications are discussed in Section 6.

2 Background

In Switzerland, at the age between 14 and 16, young adolescents decide on their educational path. They can choose between general education, a purely school-based education path, or vocational education, which comes mostly in the form of an apprenticeship. In apprenticeships, not only a part of the curriculum is taught in firms, but most importantly, firms select the trainees and train them for specialized and distinct occupations. An apprenticeship lasts for three or four years[5] and leads, upon passing an examination, to a generally recognized diploma. This is acknowledged as a certificate of proficiency in the occupation and also confers an educational degree that opens further education at the tertiary level of the education system.

[5] There are also 2-year programs, which are excluded in our analyses, for less talented school-leavers not fit for the more demanding three- and four-year programs.

On average, almost 70 percent of Swiss pupils choose the vocational path, although there are considerable (cultural) differences in this proportion between Swiss regions, i.e., cantons.

The market for apprenticeships consists on the demand side of companies offering apprenticeships and on the supply side of young adolescents, who continue their education at the upper secondary level after completing compulsory school. These young people apply to firms with vacancies, and in the positive case, a work and training contract is signed by both parties and the state.[6] In Switzerland, more than 200 different occupations can be learned through an apprenticeship. All apprenticeships in a given school year start in the late summer of this year, and most individuals start looking for an apprenticeship in the autumn of the year before. Although many students know early what they want to learn, choosing between numerous occupations is challenging for many students (Jaik & Wolter, 2019), and very few pupils are aware of the full range of possibilities. Besides the compulsory career guidance in the last two years of compulsory schooling, career fairs also play an important role in helping young people make these decisions.

In addition to these information activities, vocational skills championships have been held for many years, e.g., at the national level (SwissSkills). These championships have a dual purpose: on the one hand, they are intended to get young people interested in vocational education and training (VET) in general and, on the other, to provide a hands-on insight into professions and thus promote specific occupations. Internationally, the World Championships of Vocational Skills (WorldSkills) are the most prestigious competitions and are the subject of this study. They usually feature contests in more than 50 fields closely related to vocational skills needed in specific occupations. Each of the more than 80 member countries can send only

[6] The state is offering the school part of the training and is also responsible for quality control. For an overview of the economics of apprenticeships, see, e.g., Wolter and Ryan (2011) or Mühlemann and Wolter (2020).

one participant not older than 22 years, usually pre-selected in national competitions, to each contest. The world championship takes place every second year. It is hosted by one city/country over about one to two weeks, e.g., the WorldSkills 2017 in Abu Dhabi / United Arab Emirates. However, due to the COVID-19 pandemic, the WorldSkills 2021, initially planned for Shanghai, was postponed by one year and finally replaced by a decentralized special edition of the world championship at short notice. Therefore, for the first time, this last contest took place in 15 different countries over a time span of 12 weeks in 2022.

3 Data

To investigate the impact of winning (gold) medals on the apprenticeship market in these occupations, we constructed three data sets from four data sources. First, we collected information on the exact dates, contests, and results of the WorldSkills. Second, to observe the supply side in (specific) occupations, we use daily search queries on the online apprenticeship vacancies market for occupations in Switzerland. Third, we use the Swiss national register data for apprenticeship contracts and fourth, administrative register data on educational trajectories for existing apprenticeship contracts to analyze the number and matching quality of contracts.

Information on the WorldSkills is taken from the WorldSkills and SwissSkills websites.[7] We collect dates, participants, locations, and results of the contests for the WorldSkills events in 2013, 2015, 2017, and 2022.[8] The contests are linked to the apprenticeship in which the contested skill is trained. While for a few skill contests, there is no related apprenticeship

[7] SwissSkills (https://www.swiss-skills.ch) is the coordinating organization that selects and supports the contest participants representing Switzerland. WorldSkills (https://worldskills.org) is both the name of the world championship of vocational skills and the organization that coordinates the contests.

[8] We do not use the 2019 WorldSkills championship as its' potential impact was overshadowed by the 2020 COVID-19 pandemic, which had a temporary but substantial negative impact on the supply of apprentices (Goller & Wolter, 2021).

offered in Switzerland, e.g., '3D Digital Game Art' or 'Aircraft Maintenance,' for some professions, there are multiple (specialized) contests, e.g., both 'CNC Milling' and 'CNC Turning' are skills one learns when becoming a 'Polymechanic.' Our treatment variable reflects a positive reputation shock of becoming a world champion for the occupation of the Swiss gold medalist. Similarly, we also look at the impact of silver and bronze medals. At the 2022 WorldSkills, Switzerland won five gold medals (Patisserie and Confectionery; Automobile Technology; Landscape Gardening; Industry 4.0; Bricklaying), Table 6 in Appendix B.1 displays the contests with Swiss winners for the previous world championships.

The first outcome of our study comes from the data set that contains all search queries on the national platform for vacancies in apprenticeship occupations.[9] The national platform from which we draw this information offers interested individuals the opportunity to search for vacancies in their preferred occupation in their region and provides contact details for applications.[10] We extracted the number of search queries by occupation, canton, and day from log files from the 28th of February 2020 until the 30th of June 2023, resulting in about 5 million observations. The outcome variable represents the number of search queries by occupation, canton[11], and day and is used in a log transformation for easier interpretation. We added information on bank holidays, as well as on school holidays in each canton. This is combined

[9] This data set was first used to analyze the impact the COVID-19 pandemic had on search activities of adolescents during and after the school closures imposed by the measures to fight the pandemic (Goller & Wolter, 2021).

[10] berufsberatung.ch (de; fr: orientation.ch; it: orientamento.ch) is the official platform of the Swiss Conference of Cantonal Ministers of Education for information about and search for apprenticeship positions. There are also other ways to search for apprenticeships, including private platforms. Still, the national platform, which collects data on vacancies from employers in all cantons, is likely to be the platform that the majority of apprenticeship seekers rely on during their search and application process.

[11] The geographical location to which the search refers is equated with the place of residence of the person searching, as young people of training age generally still live with their parents and therefore limit the search for training places to a close perimeter around their place of residence.

with the information on the WorldSkills 2022 event. The binary treatment variable is 1 for the (five) gold medal winning occupations from the day of winning the contest and 0 otherwise. Similarly, an indicator for other medals, i.e., silver or bronze, is constructed.

The national register for apprenticeship contracts is part of the administrative data from the Swiss Federal Statistical Office that records and follows every individual in every educational institution in the Swiss education system. We use the (log of the) number of newly signed contracts in each year, for each occupation, and in each canton, resulting in 34,034 observations from 2013 through 2019 as the outcome variable. The treatment variable captures which occupation a gold medal won at the WorldSkills in 2013, 2015, and 2017. To investigate the impact of the WorldSkills on newly signed apprenticeship contracts starting in the respective year after the event, the treatment variable is 1 in the respective subsequent years in these gold medal winning occupations, and 0 otherwise.

For the third data set, the administrative register data from the Swiss Federal Statistical Office allows us to follow three cohorts of newly signed apprenticeship contracts (2013 – 2015) for four years to investigate if winning a gold medal (in the WorldSkills 2013) impacts the successful completion of the apprenticeship in the respective occupations. We regard the 2014 cohort as potentially influenced (treated) by the gold medals won in late autumn at the WorldSkills 2013. Unaffected units started their apprenticeship prior (2013) or after (2015) the WorldSkills 2013 or in an occupation that did not win a gold medal. We used individual-level data to investigate the stability and success of the potentially influenced cohort in the gold medal winning occupations. We construct two outcome variables: (a) drop out of the apprenticeship and (b) successful completion within the regular time. Descriptive statistics for all data sets can be found in Table 5 in Appendix A.

4 Empirical Strategy

To investigate the effect of a positive reputation shock on the (potential) supply of apprentices for a specific occupation, we rely on randomly occurring wins of gold medals at the WorldSkills championships. Although vocational education and training enjoy a high status in Switzerland (due to the historically successful dual apprenticeship system), the WorldSkills championships are not in people's minds prior to the event and are barely communicated in advance. This is also evident in Figure 2 in Appendix B.2, showing almost no media coverage for the WorldSkills before the event started. Few people know when (and where) the competitions happen, except for the friends and families of those competing.

Our identification strategy relies on the randomly occurring 'shock' of winning a gold medal. As for the chances of winning, not even the participants can estimate their success prospects. Since most international opponents are unknown, the winners remain unpredictable in advance. Moreover, with the age limit of 22 years and the two-year rhythm of the event, participation at the WorldSkills, for most individuals, is a one-time event; therefore, no track record of previous performance exists for the participants.

Furthermore, the list of occupations with Swiss gold medalists for each of the championships (Table 6 in Appendix B.1) indicates the randomness of having a Swiss champion in a specific skill in two respects. Firstly, there is a high variability in the total number of gold medals across the world championships, with nine gold medals in 2013, only one in 2015, eleven in 2017, and five in 2022. Secondly, 26 gold medals were won in 22 different skills; only in 4 skills did Swiss participants win gold medals twice in the championships.

For our causal analysis, we employ a fixed effects estimator. We are holding year-, canton-, and occupation-specific effects constant for the analysis using administrative data. For the analysis using the daily search queries, the variation in our treatment variable is over time

and occupations. The outcome measure follows some cycle throughout the year. Most apprenticeship positions start in autumn each year. Moreover, supply and demand settle the market for apprenticeship contracts early for attractive occupations. To account for this, we employ months by occupations fixed effects. We additionally control for the time in which the 2022 WorldSkills competitions took place. Moreover, previous work (Goller & Wolter, 2021) showed a high and robust statistical correlation between our measure of the supply of apprentices with school vacations and public holidays. To additionally account for fluctuations on the demand side, we also control for the number of open vacancies by day, occupation, and canton in a separate specification.

5 Empirical Results

First, we investigate how the positive reputation shock of a Swiss contestant winning a gold medal influences the supply of future potential apprentices in the form of daily search queries on the online portal for apprenticeship vacancies. Subsequently, we analyze how this effect, in turn, influences the equilibrium in the form of concluded apprenticeship contracts. This is followed by analyzing the matching quality, i.e., how successful the affected cohort was during their time in the apprenticeship.

Winning a gold medal at the WorldSkills leads to about 7 percent more search queries in the respective occupations compared to all other occupations. Table 1 shows the insensitivity of this result once the essential potential confounding factors are controlled for in column (2). Column (3) restricts the sample to January 2022 until June 2023 because control observations from the time before might potentially be influenced by the COVID-19 pandemic (Goller & Wolter, 2021). Moreover, for this time period, we can add a measure for the demand for apprentices, i.e., the number of open vacancies by day, canton, and occupation, to the regression

in column (4). Whereas the coefficient for open vacancies positively correlates with the number of search queries, the coefficient of interest barely changes.[12]

Table 1

Results; Daily Search Queries

	(1)	(2)	(3)	(4)	(5)
Gold Medal	0.098***	0.067**	0.071**	0.074**	0.053*
	(0.042)	(0.034)	(0.034)	(0.035)	(0.031)
WorldSkills		0.040***	0.039***	0.038***	0.065***
		(0.005)	(0.005)	(0.005)	(0.011)
Public Holiday		-0.161***	-0.137***	-0.136***	-0.146***
		(0.012)	(0.011)	(0.011)	(0.024)
School Vacation		-0.125***	-0.108***	-0.104***	-0.104***
		(0.008)	(0.007)	(0.007)	(0.017)
Open Vacancies				0.008***	
				(0.001)	
Occ. x Month Fixed Effect	x	x	x	x	x
Sample	all	all	01.22-06.23	01.22-06.23	Contested occupations
Observations	4,857,008	4,857,008	2,221,024	2,221,024	1,022,528

Notes: The log(daily queries per canton and occupation) is the outcome. Occ. = Occupation. Standard errors in parentheses are clustered standard errors on occupation level. Silver and bronze medal winning occupations are excluded. *, **, and *** marks statistical significance at the 10 %, 5%, and 1% levels.

In column (5), we restrict the sample to occupations with their skills contested at the WorldSkills championship. Here, we compare the occupations winning a gold medal to those that could potentially take part in the championship and omit those occupations that do not have any skills contested. Interestingly, the positive association of the WorldSkills event to the number of daily search queries for those occupations, with 6.5 percent, is higher than for the full sample, for which there is a positive correlation of about 4 percent. This might indicate that

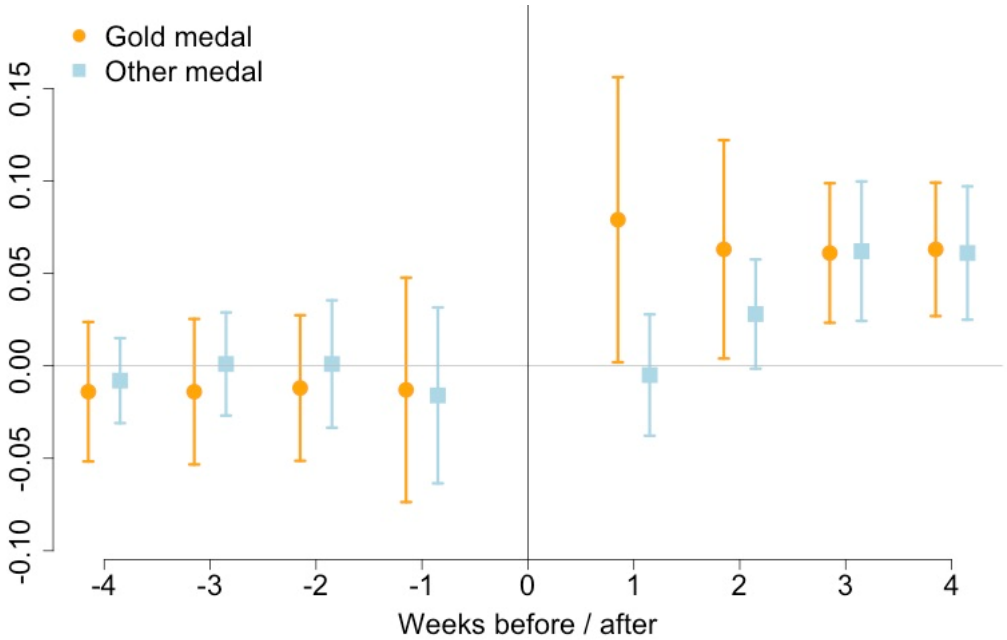
[12] Due to the unavailability of the measure for open vacancies before 2022, we can only include this control variable in the regression restricted to the subsample from January 2022 until June 2023.

the event has a general additional positive effect on the interest in apprenticeships, and even more so for showcased skills. Although the positive effect of winning a gold medal is lower, it remains positive and significant, with about 5 percent more search queries than for other contested occupations.

Besides the effect of winning a gold medal, we could expect that winning a silver or bronze medal could also boost attention for an occupation. In Appendix C, Table 7, we replace the treatment variable with a binary variable indicating other medals than the gold medal, i.e., the silver medal for the second place and the bronze medal for the third place in the competition. The lower but significant and positive coefficient indicates that not only does becoming the champion bring a positive reputation shock but also when standing on the winner's podium.

Figure 1

Effects over Time



Notes: Effects of winning a medal (in t=0) in the t = [-4,4] weeks before/after the competition. Specification as in column (2) of Table 1. Whiskers mark the 90 % confidence intervals.

Figure 1 examines this in more detail. On the right side of the figure, we show the effects of winning a gold medal (golden dot) and another medal (silver square) for the weeks after the

contest. Whereas from the first week after the contest, the effect of a gold medal is large and significant, winning another medal evolves from no effect after the first week to about the same effect size as the gold medal after three weeks. The weeks before the championship event is shown on the left side of Figure 1. As expected, the (pseudo) effects for gold and other medals are around zero and insignificant prior to winning. This can be seen as a placebo treatment test and shows that, as detailed in Section 4, there is no anticipation effect, and the reputation shock is unexpected.

Even if medals at WorldSkills positively impact the reputation of the professions awarded, it is not clear a priori whether this will, in the equilibrium, affect the number of apprenticeship contracts actually concluded. It is possible that the market is already saturated on the demand side and that an increase in supply due to the supply shock is not reflected in more contracts, although eventually, in the quality of apprentice-employer matches. Furthermore, it is also not at all certain that the increased interest in certain occupations will translate into additional contracts when applicants actually look at the occupations, companies, and vacancies.

Table 2

Effects on Signed Apprenticeship Contracts

	(1)	(2)	(3)	(4)	(5)
	All	Non-Swiss	Swiss	Women	Men
WorldSkills Gold Medal	0.025*	-0.026	0.036**	0.031	0.020
	(0.015)	(0.021)	(0.016)	(0.019)	(0.018)
Year Fixed Effects (FE)	x	x	x	x	x
Occupation FE	x	x	x	x	x
Observations	34,034	34,034	34,034	34,034	34,034

Notes: Outcome is the log(signed apprenticeship contracts [of *All / Foreigners / Swiss / Women / Men*] per canton and occupation). Treatment (=1) if gold medal in the occupation in the year before. Canton fixed effects included. Standard errors in parentheses are clustered standard errors on occupation level. *, **, and *** marks statistical significance at the 10 %, 5%, and 1% level.

Table 2 shows the effects of the positive reputation shock on the number of signed apprenticeship contracts in the years after the WorldSkills championships. Those occupations with Swiss gold medalists experienced an increase in the total number of contracts of about 2.5 percent. Columns (2) - (5) show the estimates for different variations of the outcome variable. Insignificant estimates are reported in column (2) for the number of contracts signed by non-Swiss apprentices. In contrast, in column (3), we find a large, positive, and significant effect on the number of contracts Swiss individuals sign. Columns (4) and (5) show the effects for the number of contracts separately by women and men. The coefficients align with the main results, and the differences between genders are not statistically significant.

Table 3

Effects on the Success of Newly Signed Apprenticeship Contracts, 2013-2015

	(1)	(2)	(3)	(4)	(5)
	All	Non-Swiss	Swiss	Women	Men
	Panel A: Finishing apprenticeship in regular time				
WorldSkills Gold Medal	0.014**	0.020	0.013*	0.013	0.016**
	(0.007)	(0.025)	(0.008)	(0.020)	(0.007)
	Panel B: Dropout of apprenticeship				
WorldSkills Gold Medal	-0.011	-0.016	-0.010	-0.010	-0.013*
	(0.007)	(0.027)	(0.007)	(0.021)	(0.007)
Year Fixed Effects (FE)	x	x	x	x	x
Canton FE	x	x	x	x	x
Occupation FE	x	x	x	x	x
N	148,179	27,484	120,695	66,503	81,676

Notes: Outcome is the graduation within the regular time (three or four years, depending on apprenticeship) from the apprenticeship in Panel A and the dropout within four years of the apprenticeship in Panel B. Apprenticeship starting cohorts 2013 – 2015 and investigating the WorldSkills 2013, i.e., potentially influencing the 2014 starting cohort. Standard errors in parentheses are clustered standard errors on the occupation level. *, **, and *** marks statistical significance at the 10 %, 5%, and 1% level.

To analyze the quality of the increased number of contracts due to the increased potential supply of apprentices, we investigate two measures of quality of the apprentice-employer fit in

the following. First, in Table 3, Panel A, our outcome variable is a binary indicator of whether the apprentice finished the apprenticeship in the regular time. Panel B investigates if the apprentice dropped out of the apprenticeship. Dropout of the apprenticeship is one obvious reason why apprentices do not finish their apprenticeship in the regular time. Other reasons for not finishing in the regular time is if the apprentice has problems learning the skills at work or in school, among others.

In Column (1) of Table 3, we see a small positive effect for the cohort in the gold medal winning occupation on finishing the apprenticeship in time and a negative effect on dropping out. Whereas this effect is significant for the more comprehensive measure in Panel A, it is in line but insignificant in Panel B. Columns (2) to (5) analyze the subsamples of non-Swiss and Swiss and women and men. For none of the subsamples, the effects are substantially different. Overall, we can conclude that the quality of apprenticeship contracts has not deteriorated in any case but tends to improve slightly.

Table 4

Results by cantons in which apprenticeships are more or less popular

	(1) Search Queries	(2) Signed Contracts	(3) Graduation in time
Cantons in which apprenticeships are...[a]			
... more popular	0.016	0.003	0.008
	(0.045)	(0.020)	(0.016)
... less popular	0.124**	0.047**	0.018**
	(0.050)	(0.022)	(0.009)

Notes: Outcome in Column (1) is the log(daily search queries by canton and occupation), in Column (2) the log(signed apprenticeship contracts by year, canton, and occupation). Standard errors in parentheses are clustered standard errors on the occupation level. *, **, and *** mark statistical significance at the 10 %, 5%, and 1% level. [a] Cantons are divided in half according to the proportion of pupils choosing the vocational (vs. the academic) path in 2015/16—Source: Swiss Federal Statistical Office.

So far, the results show that the Swiss apprenticeship system benefits globally from the success of Swiss participants in the WorldSkills Championships. However, given the historically and culturally strong differences in the popularity of apprenticeship between regions (cantons), it is interesting to know whether the apprenticeship market reacts in a similar way regardless of these differences. For this purpose, we have divided the Swiss cantons into two subgroups (Table 4) in which apprenticeship training is either more or less familiar. Interestingly, the effects found at the average level are only found in regions where apprenticeships are less popular, and no effect is found in regions where apprenticeships have always been popular. This applies to all aspects: the potential supply of apprentices (see column (1)), the number of contracts signed (column (2)), and the quality of the apprentice-employer match (column (3)).

6 Discussion and Conclusion

In this study, we show, for the first time to our knowledge based on daily data, how an unexpected positive reputation shock causally affects the supply of candidates for specific occupations. We can show that such reputation shocks, in the form of winning gold medals at the world championship of vocational skills, have a statistically and economically significant positive impact on supply. Furthermore, the analysis of the data on apprenticeship contracts shows that the supply shock also impacts the number of contracts concluded in the occupations affected by the positive reputation shock. Importantly, these apprenticeships show a comparable, if not better, match between the training company and the apprentice.

Since a career choice is associated with substantial investments of time and money in job-specific skills, these results also show that coincidences such as winning a gold medal can lead to behavioral changes associated with major economic consequences. The results also imply that young people are influenced in their process of choosing a career not only by their

immediate environment but also that exogenous events to which they have only an indirect connection can have a substantial impact, too.

Analyzing the heterogeneity of the effect according to regions in which VET is widespread or weakly established allows two further interesting conclusions to be drawn. Firstly, the observation that this change in training plans only occurs where apprenticeship, in general, was not the first choice before the positive reputation shock leads us to assume that it is precisely the weak position of vocational education and training and the low prestige of the occupations learned through it that allows the positive surprise effect to have such a great impact. In this case, however, we should be less surprised by the malleability of career aspirations than by the question of whether career decisions are sufficiently efficient if they can be changed so easily with little additional information.

Secondly, and perhaps more importantly for all those countries in which vocational education and training is struggling and where efforts are being made to strengthen it, the results provide an answer to the frequently asked question of the chicken and the egg. In other words, whether the lack of interest in VET among young people or the lack of companies offering apprenticeships are the main reasons for the stagnation of this type of training. The substantial effect of the increase in apprenticeships due to the supply shock in regions with a low proportion of VET programs clearly shows – at least in this case – that companies would be willing to offer apprenticeships if there were a corresponding supply of interested applicants.

References

Beaman, L., Duflo, E., Pande, R., & Topalova, P. (2012). Female Leadership Raises Aspirations and Educational Attainment for Girls: A Policy Experiment in India. *Science*, 335(6068), 582-586.

Canaan, S., & Mouganie, P. (2023). The Impact of Advisor Gender on Female Students' STEM Enrollment and Persistence. *Journal of Human Resources*, 58(2), 593-632.

Di Pietro, G. (2018). Do media play a role in promoting vocational education and training? The case of MasterChef. *Policy Studies*, 39(1), 37-53.

Eggenberger, C., Janssen, S., & Backes-Gellner, U. (2022). The Value of Specific Skills under Shock: High Risks and High Returns. *Labour Economics*, 78, 102187.

Frick, B., & Wicker, P. (2016). The trickle-down effect: How elite sporting success affects amateur participation in German football. *Applied Economics Letters*, 23(4), 259-263.

Gehrau, V., Brüggemann, T., & Handrup, J. (2016). Media and Occupational Aspirations: The Effect of Television on Career Aspirations of Adolescents. *Journal of Broadcasting & Electronic Media*, 60(3), 465-483.

Gershenson, S., Hart, C. M., Hyman, J., Lindsay, C. A., & Papageorge, N. W. (2022). The Long-Run Impacts of Same-Race Teachers. *American Economic Journal: Economic Policy*, 14(4), 300-342.

Gibson, D. E. (2003). Developing the Professional Self-Concept: Role Model Construals in Early, Middle, and Late Career Stages. *Organization Science*, 14(5), 591-610.

Gibson, D. E. (2004). Role models in career development: New directions for theory and research. *Journal of Vocational Behavior*, 65, 134-156.

Goldthorpe, J. H., & Hope, K. (1972). Occupational grading and occupational prestige. *Social Science Information*, 11(5), 17-73.

Goller, D., & Wolter, S. C. (2021). "Too shocked to search" The COVID-19 shutdowns' impact on the search for apprenticeships. *Swiss Journal of Economics and Statistics*, 157(6).

Jaik, K., & Wolter, S. C. (2019). From dreams to reality: market forces and changes from occupational intention to occupational choice. *Journal of Education and Work*, 42(4), 320-334.

Kofoed, M. S., & McGovney, E. (2019). The Effect of Same-Gender or Same-Race Role Models on Occupation Choice. *Journal of Human Resources*, 54(2), 430-467.

Kramer, A., & Kramer, K. Z. (2020). The potential impact of the Covid-19 pandemic on occupational status, work from home, and occupational mobility. *Journal of Vocational Behavior*, 119, 103442.

Lim, J., & Meer, J. (2017). The Impact of Teacher-Student Gender Matches. *Journal of Human Resources*, 52(4), 979-997.

Lockwood, P., & Kunda, Z. (1997). Superstars and Me: Predicting the Impact of Role Models on the Self. *Journal of Personality and Social Psychology*, 73(1), 91-103.

Muehlemann, S., & Wolter, S. C. (2020). The Economics of Vocational Training, in: Bradley, S. and Green, C. (Eds.):. *The Economics of Education, A Comprehensive Overview*, Second Edition, Elsevier, 543-554.

Riley, E. (2022). Role models in movies: The impact of Queen of Katwe on students' educational attainment. *Review of Economics and Statistics*, 1-48.

Weed, M., Coren, E., Fiore, J., Wellard, I., Chatziefstathiou, D., Mansfield, L., & Dowse, S. (2015). The Olympic Games and raising sport participation: A systematic review of evidence and an interrogation of policy for a demonstration effect. *European Sports Management Quarterly*, 15(2), 195-226.

Wolter, S. C., & Ryan, P. (2011). Apprenticeship, in: Hanushek, E.A., Machin, S. and Woessmann, L. (Eds.):. *Handbook of Economics of Education*, Volume 3, Elsevier, 521-576.

Zopiatis, A., & Melanthiou, Y. (2019). The celebrity chef phenomenon: A (reflective) commentary. *International Journal of Contemporary Hospitality Management*, 31(2), 538-556.

Appendices

Appendix A: Descriptive statistics

Table 5

Descriptive Statistics

	Mean	Standard deviation	N
Panel A: Dataset 1 (Daily Search Queries)			
Log (search queries by occupation, canton, day)	0.553	(0.930)	4,857,008
WorldSkills	0.045	(0.207)	4,857,008
WorldSkills Gold Medal	0.007	(0.082)	4,857,008
WorldSkills Other Medal	0.015	(0.120)	4,857,008
Open vacancies	6.987	(27.075)	2,352,532
Panel B: Dataset 2 (Signed Contracts)			
Log (signed contracts)	1.215	(1.449)	34,034
Log (signed contracts, men)	0.947	(1.288)	34,034
Log (signed contracts, women)	0.596	(1.097)	34,034
Log (signed contracts, Swiss)	1.107	(1.373)	34,034
Log (signed contracts, non-Swiss)	0.521	(0.929)	34,034
WorldSkills Gold Medal	0.015	(0.120)	34,034
Panel C: Dataset 3 (Individual Contracts)			
Completion of Apprenticeship in time	0.683	(0.465)	148,179
Dropout of the Apprenticeship	0.306	(0.461)	148,179
WorldSkills Gold Medal	0.037	(0.188)	148,179
Female	0.449	(0.497)	148,179
Non-Swiss	0.185	(0.389)	148,179

Appendix B: Additional Resources

Appendix B.1: WorldSkills Gold Medals for Switzerland

Table 6

Contests in which Swiss participants won a gold medal

2022	Patisserie and Confectionery; Automobile Technology; Landscape Gardening; Industry 4.0; Bricklaying	[5]
2017	Mechatronics; Bakery; IT Software Solutions for Business; Plumbing and Heating; Web Design and Development; Electronical Installations; Industrial Control; Cabinetmaking; Restaurant Service; Health and Social Care; Heavy Vehicle Maintenance	[11]
2015	IT Software Solutions for Business	[1]
2013	Car Painting; Landscape Gardening; Restaurant Service; Joinery; Mechanical Engineering Design – CAD; Print Media Technology; Electronics; Electrical Installations; Wall and Floor Tiling	[9]

Notes: The number of gold medals by year is shown in square brackets.

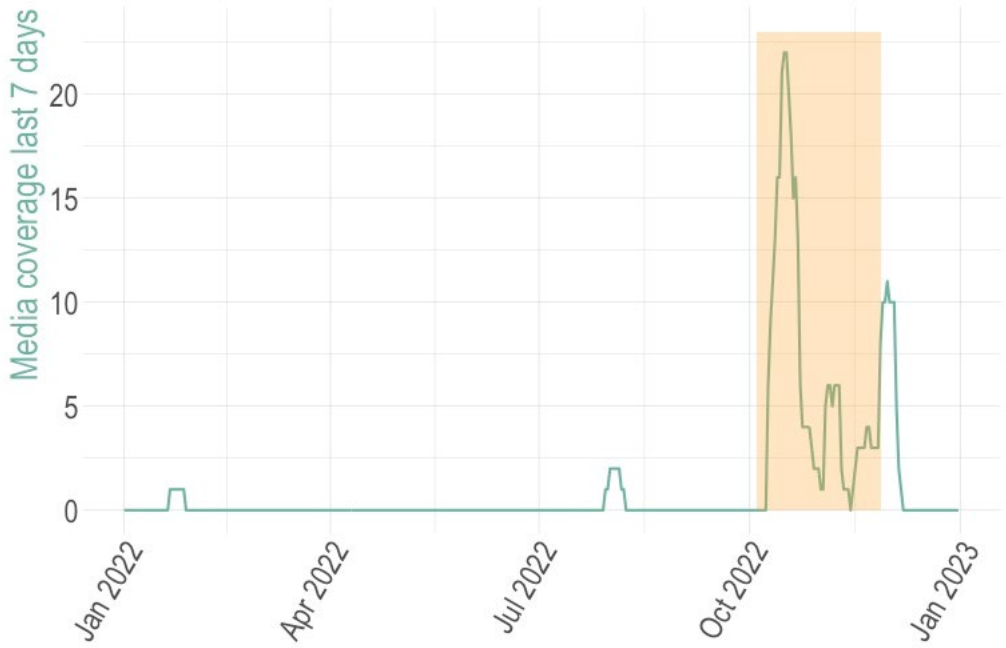
Appendix B.2: Media coverage

The Swiss newspaper archive collects and archives all articles that appear in print and online media outlets in Switzerland. Most Swiss newspapers are part of the archive, including most local newspapers and major news companies. One exemption that needs to be mentioned is the NZZ group that publishes, e.g., the 'Neue Zürcher Zeitung,' one of the largest newspapers, but despite its name, it is an international German-speaking newspaper. Within the archive, we searched for articles that appeared in 2022 in Switzerland and were related to the WorldSkills 2022. We construct a measure for the number of print media articles that appeared within the previous seven days in each canton.

Similarly, a measure that counts the number of online media articles that appeared in the canton's main official language in the previous seven days. The sum of both is captured in the variable 'media coverage.' For illustrative purposes, this measure is summed up to a measure of national media coverage that counts all media coverage across Switzerland within the past seven days for 2022. Figure 2 shows that only a few media articles were published before the WorldSkills Event (marked in yellow). At the same time, during and after the World Championship, there was substantial coverage.

Figure 2

The WorldSkills event (in yellow) and their media coverage in Switzerland, prev. seven days



Appendix C: Additional Results

Table 7

Results; Daily Search Queries; Silver and Bronze Medals

	(1)	(2)	(3)	(4)	(5)
Silver or Bronze Medal	0.082**	0.054*	0.051*	0.055*	0.038
	(0.042)	(0.030)	(0.030)	(0.031)	(0.028)
WorldSkills		0.051***	0.050***	0.049***	0.080***
		(0.005)	(0.005)	(0.005)	(0.011)
Public Holiday		-0.157***	-0.148***	-0.146***	-0.140***
		(0.012)	(0.012)	(0.012)	(0.025)
School Vacation		-0.124***	-0.111***	-0.106***	-0.104***
		(0.008)	(0.008)	(0.007)	(0.017)
Open Vacancies				0.008***	
				(0.001)	
Occ. x Month Fixed Effect	x	x	x	x	x
Sample	all	all	01.22-06.23	01.22-06.23	Contested occupations
Observations	4,984,824	4,984,824	2,279,472	2,279,472	1,150,344

Notes: The log(daily queries per canton and occupation) is the outcome. Occ. = Occupation. Standard errors in parentheses are clustered standard errors on occupation level. Gold medal winning occupations are excluded. *, **, and *** marks statistical significance at the 10 %, 5%, and 1% levels.