Andreas Heller

Transition and worker mobility behaviour of tourism alumni: The case of Switzerland

Abstract

The research paper investigates the behaviour of tourism alumni at the transition from tourism education market to tourism labour market and from tourism labour market to other labour markets. The paper focuses especially on the decisions of tourism graduates to enter in the tourism labour market as "stayer" or to exit the tourism industry as "mover". The first part commences with some facts and figures from the hotel and restaurant industry of Switzerland regarding the mover issue. The second part discusses the framework of the mover/stayer phenomenon. In the third part, the methodology to determine the transition and worker mobility behaviour and the drivers of this behaviour are presented. A multinomial logit model with a dummy variable controlling for the possibility that tourism alumni may behave differently than alumni of non-tourism sectors was implemented. Descriptive results from a univariate analysis and econometric estimations from a multivariate analysis are described in the fourth part. The influence of gender, age, education level and other variables are estimated for the tourism industry as well as for non-tourism industries using the example of Switzerland. It will be shown that tourism alumni exhibit higher mover rates and mover probabilities as compared to those of non-tourism industries.

Keywords:
mover; stayer; tourism education; transition; worker mobility

Introduction

Education for individuals is economically, socially and politically essential. Especially in the services sector, where contact with visitors and guests is required, employees' qualifications in providing high-quality services are crucial: "Education and training are basic elements of the tourism supply, as the quality of services depends partly or mainly on the people who are working in this sector" (Csilla, 1998). Although tourism education is acknowledged and researched on the production side (see for example Armstrong, 2003; Beard, McCarter & Wilson, 2007; Brookes, 2003; Inui, Wheeler & Lankford, 2006; Lominé, 2002; Paraskevas & Sigala, 2004; Airey, Bennett & Pereda, 2007; Otting & Zwaal, 2007), its importance on the consumption side, that is, on the side of tourism alumni, has rarely been analysed. The aim of this research article is to highlight the prerequisites and methods to analyse the transition and worker mobility behaviour of tourism alumni. This is accomplished by a case study of tourism education and tourism alumni of Switzerland.

Andreas Heller, PhD, Research Institute for Leisure and Tourism, University of Bern, Switzerland
E-mail: andreas.heller@fif.unibe.ch

The European expert group on tourism and employment sums up that the future challenges to solve in tourism are "employment vacancies, high level of staff turnover" and "difficulties in staff recruitment and retention" (Jensen, 2001). The group bewails that tourism is exposed to tough competition not only in tourism markets but also in labour markets in some countries and in specific tourism subsectors among different industries and sectors of the economy. The experts note that tourism frequently represents "a stepping-stone to another career/sector." These trends of the European expert group are also found in Switzerland. The hotel reception federation of the Hotel & Gastro Union and the Swiss Federation of Travel Agencies find that Swiss hotels and hotel chains exhibit a high number of educated hotel/gastronomy/tourism merchants and reception/administration managers who may not be employed for any length of time as they move to other branches/industries or sectors[1]. A survey of the Hotel & Gastro Union among apprentices shows that although they are satisfied with their apprenticeships, almost one third of the graduates state that they will leave the tourism industry after their apprenticeship[2]. A survey among graduates of the Hotel Management School Thun confirms the depicted situation for the hotel and restaurant industries in Switzerland: The census of 2002 shows that only 61% of tourism graduates remain in the tourism industry five years after graduation. However, the increasing exit from the tourism industry is not a phenomenon limited to Switzerland. A study from Kuzmanic and Pürrer (2005) illustrates that in Austria, many qualified graduates of tourism and hospitality management schools migrate to other sectors.

The second part of this study discusses the terminology and reference framework of the mover/stayer phenomenon. In the third part, the methodology to determine the transition and worker mobility behaviour and the drivers of this behaviour are presented. Descriptive results from a univariate analysis and econometric estimations from a multivariate analysis are described in the fourth part of this article. The influence of gender, age, education level and other variables is estimated for the tourism industry as well as for non-tourism industries using the example of Switzerland. Conclusions follow in the last section of the paper.

Framework

A tourism alumnus generally completes further education[3] in the labour market[4] so that there is a match between profession/formation and occupation. If, on the other hand, there is no match between the learned and practiced profession, the alumnus is called a mover.

- An alumnus is called a *direct mover* if the first labour market entry after his education (1–11 months) occurs in an industry other than his training industry.
- An alumnus is called an *indirect mover* if the first labour market entry after his education (1–11 months) occurs in his training industry but changes to an economic sector other than his training sector later on.
- An alumnus is called a *stayer* if the first labour market entry after his education (1–11 months) occurs in his training industry.

The *direct mover rate* is equal to the fraction of alumni who do not enter in the tourism labour market after tourism education completion and the total number of tourism graduates. The *indirect mover rate* corresponds to the quotient of the number of employees with a tourism education background who have changed industries at least once after their tourism education and the total number of tourism graduates. Although both mover rates may be added to gain an overall picture of the movers of an industry, the asynchronism of the two rates may not be dismissed. Contrary to the direct mover rate,

apart from structural breaks or business cycles movements, the indirect mover rate is more volatile – primarily for reasons regarding continual in- and outflows of labour in/from other industries (re-entries and new entries).

Both direct and indirect exits may be combined with a so-called *move-in*: An alumnus may exit the tourism labour market directly or indirectly, but remigrate into the tourism sector after a certain time. In this process of re-entries (indirect movers with move-in) or new entries (direct movers with move-in), the focus changes from transition to worker mobility. The *direct move-in rate* corresponds to the fraction of the labour force who are direct movers and subsequently entered employment in the tourism labour market and the total number of alumni with a tourism education. The *indirect move-in rate* corresponds to the quotient of the labour force who are indirect movers and subsequently re-entered in employment in the tourism labour market and the total number of alumni with a tourism education.

Figure 1
FRAMEWORK OF DIRECT AND INDIRECT MOVERS
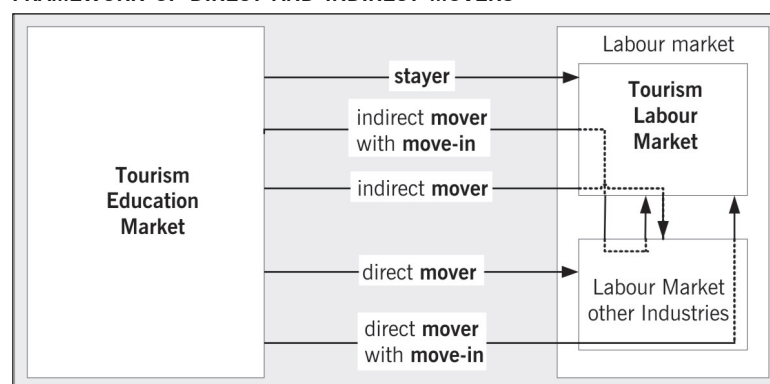
Methodology

The mover/stayer phenomenon was examined in a descriptive, non-experimental study in the summer of 2007, when socio-economic data and data concerning transition and worker mobility were collected. The population consists of graduates from vocational schools, higher specialist schools (HF), universities of applied sciences (FH) and universities who had registered at www.klassenfreunde.ch. This portal provides the opportunity to register for free as an alumnus of any visited school with the relevant graduation year. The sample consists of all alumni with graduation years 1997-2007 of tourism-relevant educational institutions. In order to be able to compare the tourism industry with the national economy (non-tourism industries), the sample also includes non-tourism-specific educational institutions. In total, over 7,300 alumni have been contacted via the portal. The response rate of those who have been successfully contacted is 32% and the withdrawal rate is approximately 10%. The analysable sample consists of 1,019 individuals. While a univariate analysis was performed, it is above all the multivariate analysis that shows which variables influence the transition and worker mobility behaviour of tourism and non-tourism alumni. Moreover, the direction and magnitude of the variables' influence may not be analysed with a univariate analysis.

When an alumnus of a vocational school (HF, FH or university) has to decide on a career, he is making a decision between a group of alternatives rather than a single choice. The decision to further his education or to enter employment in an industry other than the training industry is complex. Education economists are interested in the

question of why a particular choice is made and what factors are essential to the choice. Ideally, the estimation should show the influence of each of these factors explaining the result. Such questions are typically answered with the help of a "*multinomial logit (MNL) model*".

Certain decisions (tourism or non-tourism labour market, employment or further education, etc.) may be explained with the help of a multinomial variable. The variable shows the possible ex post choice of an alumnus with or without tourism training. Note that the multinomial estimation considers only the final state of an alumnus. While stayers and direct movers have to arrive at a single decision, indirect and direct movers with move-in have to decide twice (indirect movers with move-in even three times). The reason for merging the two groups of direct movers with move-in and indirect movers with move-in is that they are both relatively small subsamples of the model. Although the intermediate step of the indirect movers is thus indirectly omitted, the final state (move-in) of both groups is the same.

$$y = \begin{cases} 1 & \textit{stayer} \\ 2 & \textit{direct mover} \\ 3 & \textit{indirect or direct mover with move - in} \\ 4 & \textit{indirect mover} \end{cases}$$

The MNL shows the following probabilities (cf. Wooldridge, 2002):

$$P(y = j \mid \mathrm{x}) = \exp(\mathrm{x}\beta_j) \Bigg/ \left[1 + \sum_{h=1}^{4} \exp(\mathrm{x}\beta_h) \right], \quad j = 1,\dots,4$$

where $P(y = j \mid \mathrm{x})$ is the probability that y takes the value $j = 1,\dots,4$, given the vector of variables x (see below). There are many possible reasons for a direct or indirect mover to leave his training industry. Accordingly, there is not only one variable explaining the behaviour of the alumnus. In fact, there are several variables that determine and characterise the alumnus' transition- or worker mobility behaviour. The vector of variables of a direct mover, indirect mover, direct mover with move-in and indirect mover with move-in is:

$$\mathrm{x} \begin{cases} \textit{tourism } (x_1) \\ \textit{age } (x_2) \\ \textit{gender } (x_3) \\ \textit{education } (x_4) \\ \textit{graduation year } (x_5) \\ \textit{graduation mark } (x_6) \\ \textit{worked during education in training industry ? } (x_7) \end{cases}$$

- The *dummy variable tourism* (tourism: $x_1 = 1$, non-tourism: $x_1 = 0$) controls for the possibility that tourism alumni may behave differently than alumni of non-tourism sectors. Although the sample is comprised of alumni from many industries, the

possibility of estimation errors cannot be excluded. For example, alumni from the computer sciences industry, which is overrepresented, may behave differently in terms of their mover or stayer behaviour than the average of all other industries. As the sample data do not correctly represent the number of graduations by curriculum (tourism or non-tourism), the collected data were weighted by the tourism attribute.

- The limited time-frame of the graduation years 1997–2007 may result in an incomplete representation of the *variable age*. It ranges from $x_2 = 19$ to $x_2 = 54$.
- The *dummy variable gender* (man: $x_3 = 1$, woman: $x_3 = 0$) is approximately representative of the population, with a proportion of women of 56.9% in the sample.
- As the subsamples of several levels of education are too small, the *dummy variable education* with the specifications HF/FH/university ($x_4 = 1$) and vocational schools ($x_4 = 0$) was established. As the data do not represent the education levels correctly, the sample was weighted by this attribute.
- The *variable graduation year* (graduation year $= 11-x_5$; with $x_5 = 1, ... , 11$; graduation year 1 ≡ year 1997, ..., graduation year 10 ≡ year 2006) shows for direct movers if the probability of an industry change in the last 10 years (1997–2007) has changed. The variable is also an indicator for the probability of leaving the training industry indirectly (and directly or indirectly with move-in respectively). An early graduation year (e.g., 1998) heightens the probability of an indirect industry change by definition; a late graduation year (e.g., 2004) reduces the probability.
- Whether the *variable graduation mark* x_6 affects the likelihood of staying in the training industry was tested by calculating the change probability for the marks 4 (sufficient), 5 (good) and 6 (excellent).
- Finally, the *dummy variable "worked during education in training industry"* is also of interest (worked $x_7 = 1$, did not work: $x_7 = 0$).

The estimation of the unknown coefficients ß$_j$ was carried out via *maximum likelihood estimation* (cf. Wooldridge, 2002). With the help of the statistical software Stata, the MNL for direct movers ($y = 2$), direct/indirect movers with move-in ($y = 3$) and indirect movers ($y = 4$) was estimated. All coefficients were estimated relative to the case of the stayer ($y = 1$, base outcome). The sample consists of data from 899 alumni ($n_{\text{non-tourism industries}} = 531$, $n_{\text{tourism}} = 368$). The sample of non-tourism industries contains micro data of most NOGA industries (sale, maintenance and repair of motor vehicles and motorcycles, construction, manufacture of chemicals and chemical products, retail and wholesale trade, publishing/printing, electronics, electricity/gas/water supply, research and development, health care and welfare, real estate, and IT services industries, as well as other service activities such as cosmetics, financial intermediation, food, machinery, metalworking, telecommunication, public administration, national insurance, textiles, insurance, and advertising).

With the help of a so called *base case*, the predicted and estimated probabilities of gender, education, graduation mark as well as all the other variables can be determined. The base case is a model of the average tourism alumnus and the average alumnus of a non-tourism curriculum, respectively. This is done with the help of the means of variables x_1 to x_7. In a first step, the model is estimated for each of the variables. For example, for the variable education, the model was estimated once for the base case of a lower education and once for higher education (ceteris paribus).

Findings and discussion

For all educational levels, alumni in tourism show higher direct and indirect mover rates and lower direct or indirect move- in rates than the national economy (graduation years 1997–2007).

Table 1

AVERAGE MOVER RATES
(all education levels, graduation years 1997-2007)

	Tourism	Non-tourism
Direct mover rate	20.9%	7.6%
Indirect mover rate	17.1%	6.4%
Direct/indirect move-in rate	3.8%	7.0%

The disaggregation of the mover quotas shows that both in the secondary and tertiary sectors, industries with above average mover rates can be found (The measure of mover quotas may be biased due to a sample selection bias of the online questionnaire. It cannot be guaranteed that direct or indirect movers in the tourism industry were more apt to answer than those of non-tourism industries). This result is consistent with the study from Büchel and Neubäumer (2001), which shows that mover quotas for the financial (banking, insurance) and electronic industries lie above average. Similarly, Henneberger and Sousa-Poza (2007) find that mover rates in the tourism industry (particularly in the hotel and restaurant sectors) are above average.

The direct mover quota is above average particularly in the education area of gastronomy. In contrast, alumni with training in the areas of tourism transport exhibit a low direct mover rate. Alumni in the education areas of travel agencies and tourism associations/federations also have a below average direct mover rate. Lehmann (2007) shows in her work on further training of tourism students that especially in the hotel and restaurant industry, companies are not disposed to engage financially in further education (e.g., federal vocational or qualifying exams) as they fear that candidates will leave the company after graduation. The study of Kuzmanic and Pürrer (2005) shows that tourism alumni with work experience in the kitchen or reception areas are more likely to take employment in another industry than alumni with work experience in the area of event management.

Every third tourism alumnus is not satisfied with the below-average wages and wage perspectives within the tourism industry and becomes employed in other industries. Every fourth direct mover states that taking up employment in the tourism industry was never planned. Every sixth mover was seeking an adequate and attractive full or part time employment within the tourism industry but did not succeed in finding a job. About every tenth mover holds that weekend or night employment is one of the reasons for a direct industry change. Bad conditions of employment were stated of 6%. At the university level, it is above all the lack of attractive and available jobs that causes a direct change. The below average wages of the sector come a close second. According to Müller (2001), wages and wage perspectives are the main causes for an industry change. Unattractive working hours and mental stress of employment are further reasons for which the respondents of higher specialist schools (HF) and the management of tourism companies leave the tourism industry.

Büchel and Neubäumer (2001) also show that wage is a major reason for a job and industry change. An important motive for an industry or job change of vocational graduates in the areas of gastronomy/services/education is "earning more". The arguments "other interests" or "found no employment in training industry" rank second and third,

respectively. In comparison with other industries, the formation of other interests was less important; questions regarding wage and unfruitful job-seeking, however, were of higher-than-average relevance. The image of the whole tourism industry has a positive impact on the length of stay in the industry. This fact is consistent with the study at hand: A bad image of the tourism industry was rarely named as an industry change factor. According to Jensen (2001), the "image of the industry" induces the absence of qua-lified employees of the tourism industry. Bad working conditions, no (apparent) occu-pational career perspectives, hierarchical or missing organisational structure, low wages, part time or seasonal employment can all enforce a bad image. As the above ex-planati-ons show, many of these factors do not apply according to this study. Bad opportunities for job advancement, part time work or inferior employment conditions are not at the top of possible reasons for an industry change. A bad image thus does not appear to be the case based on the empirical data of the research project. Contrary to Jensen (2001), Brent and Pollock (1990) argue that the image of the tourism industry has changed: jobs in the airline, hotel and restaurant, public tourism and events and attractions indu-stries are as demanding, highly developed and complex as jobs in other industries. In the following sections, the multinomial logistic regression will be presented and discussed.

Table 2
MULTINOMIAL LOGISTIC REGRESSION

						Number of obs	=	722.0
						Wald chi2(21)	=	143.99
						Prob > chi2	=	0.0000
Log pseudolikelihood	=	-466.79				Pseudo R2	=	0.1267

Choice		Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
2							
	tourism	1.90	0.38	5.06	0.00	1.17	2.64
	age	0.09	0.06	1.65	0.10	-0.02	0.20
	gender	-0.38	0.38	-1.00	0.32	-1.12	0.36
	eduhigh	-0.81	0.45	-1.81	0.07	-1.69	0.07
	ten	-0.06	0.08	-0.75	0.45	-0.23	0.10
	mark	-0.26	0.51	-0.52	0.60	-1.26	0.73
	worked	-7.49	1.04	-7.18	0.00	-9.54	-5.45
	_cons	-2.46	2.80	-0.88	0.38	-7.94	3.03
3							
	tourism	-1.69	0.44	-3.89	0.00	-2.55	-0.84
	age	-0.04	0.08	-0.44	0.66	-0.19	0.12
	gender	-0.14	0.46	-0.31	0.76	-1.04	0.76
	eduhigh	0.49	0.57	0.85	0.39	-0.63	1.61
	ten	0.09	0.09	1.02	0.31	-0.09	0.28
	mark	-0.56	0.60	-0.94	0.35	-1.73	0.61
	worked	-0.29	0.52	-0.56	0.58	-1.32	0.74
	_cons	0.85	3.40	0.25	0.80	-5.80	7.51
4							
	tourism	1.26	0.47	2.66	0.01	0.33	2.19
	age	-0.05	0.09	-0.57	0.57	-0.23	0.12
	gender	-0.61	0.49	-1.24	0.21	-1.57	0.35
	eduhigh	0.04	0.58	0.07	0.95	-1.09	1.17
	ten	0.23	0.08	2.96	0.00	0.08	0.39
	mark	-0.70	0.58	-1.20	0.23	-1.84	0.44
	worked	-2.30	1.09	-2.12	0.03	-4.43	-0.18
	_cons	1.66	3.33	0.50	0.62	-4.88	8.19

(choice==1 is base outcome eduhigh = dummy for high education
ten = (11 - graduation year)

A statistical restriction can be found in the relatively small subsamples of direct and indirect individuals and move-in candidates. The model estimations of the tourism industries are based on 83 direct movers, 68 indirect movers and 15 direct or indirect movers with move-in. For non-tourism industries, the subsamples consist of 38, 22 and 34 persons, respectively. A model expansion could incorporate effects such as part time, weekend or night work, or other socio-demographic variables. The estimated model has a ρ^2 of 0.13. A model with a ρ^2 between 0.2 and 0.4 would be highly representative (cf. Krueger et al., 2002 or Birch et al., 2005).

Direct movers (choice = 2)

The model shows that the dummy variable tourism has a highly significant and positive influence on the probability of being employed in an industry other than the training industry. Also, the dummy variable "worked" is highly significant. According to the estimation, the probability of leaving the initial (training) industry rises the later the alumnus finishes his training, i.e., the older the alumnus is. Statistically insignificant are the coefficients gender, graduation year and graduation mark. However, the probability to leave the training industry directly after graduation tends to be higher for female than for male graduates. Similarly, a graduation year of 1997 ($x_5 = 10$) tends to imply a lower direct mover probability than a graduation year of 2006 ($x_5 = 1$). Overall, it is alumni with lower educational achievement who tend to leave their training industry, rather than alumni with higher educational attainment.

The *probabilities of a direct industry change*[5] average $p = 8.2\%$ for direct movers in tourism and $p = 1.4\%$ for direct movers not in tourism. Thus, the probability of a direct industry change is five times as large in tourism as compared to non-tourism.

Age: The probabilities of a *direct industry change of a 20-, 25- or 30-year-old tourism alumnus* average $p = 4.7\%$, $p = 7.5\%$ and $p = 11.8\%$, respectively. Thus, the probability of leaving the training industry rises directly with increasing age (non-significant). The probabilities for a *direct industry change of a 20-, 25- or 30-year-old non-tourism alumnus* average $p = 0.8\%$, $p = 1.2\%$ and $p = 2.0\%$, respectively. Thus, older non-tourism alumni have higher probabilities of leaving their training industry than younger alumni (non-significant).

Gender: The probabilities of a *direct industry change of a male or female tourism alumnus* average $p = 7.0\%$ and $p = 9.3\%$, respectively. Thus a female graduate has a higher direct mover probability than a comparable male graduate (non-significant). The probabilities for a *direct industry change of a male or female non-tourism alumnus* average $p = 1.1\%$ and $p = 1.6\%$, respectively. As in the case of tourism alumni, it is also women who tend to leave their industry rather than men in non-tourism industries (non-significant). Similarly, Büchel and Neubäumer (2001) show that there is no statistically significant influence of gender on transition behaviour. However, their results indicate that it is women rather than men who leave their industry after graduation from apprenticeship training.

Education: The probabilities of a *direct industry change of tourism alumni with high or low level of education* average $p = 4.5\%$ and $p = 9.7\%$, respectively. The estimation results in a lower direct mover probability for alumni with a tertiary education than for alumni with a secondary education level (non-significant). The probabilities for a *direct industry change of non-tourism alumni with high or low level of education* average $p = 0.7\%$ and $p = 1.6\%$, respectively. As in the tourism industry, a higher education lowers the probability of non-tourism alumni leaving the training industry directly (non-significant).

Graduation year: The probabilities of a *direct industry change of tourism alumni with gradua-tion year 1997, 2002 and 2006,* respectively, average $p = 3.9\%$, $p = 7.0\%$ and $p = 9.8\%$. Thus, the probability for a direct industry change has more than doubled in the last 10 years (non-significant). This corresponds to the results of the apprentice survey of the Hotel & Gastro Union and with the study of Leemann and Keck (2005). The probabilities of a *direct industry change of non-tourism alumni with graduation year 1997, 2002 and 2006,* respectively, average $p = 0.8\%$, $p = 1.2\%$ and $p = 1.6\%$. Indeed, the probability of changing training industries has also increased for non-tourism industries (non-significant). However, the level and increase of the probabilities are much higher in tourism than in non-tourism. Of high importance is the fact that the mover probabil-ity in tourism in the last 10 years has increased more than in the national economy in the same years (non-significant).

Graduation mark: The probabilities of a *direct industry change of tourism alumni with a sufficient (4), good (5) and excellent (6) graduation mark,* respectively, average $p = 9.4\%$, $p = 8.1\%$ and $p = 6.7\%$. A better graduation mark tends to have a positive effect on staying in the tourism industry after graduation (non-significant). BIBB (2001) confirm a positive effect of a better final examination mark with staying in the training industry. The probabilities of a *direct industry change of non-tourism alumni with a sufficient (4), good (5) and excellent (6) graduation mark,* respectively, average $p = 1.6\%$, $p = 1.3\%$ and $p = 1.1\%$. Alumni of a non-tourism industry tend to show similar behaviour concerning their graduation mark (non-significant) to those of the tourism industry.

Worked during education in training industry: The probabilities of a *direct industry change of tourism alumni who did (not) work during education in a tourism industry* average p (worked) $= 0.1\%$ and p (did not work) $= 44.4\%$. Whether or not a tourism alumnus worked during his education thus appears to be crucial in his decision to leaving the industry or stay. A graduate's completion of a full time vocational school or dual vocational training is therefore essential for his successful transition from tourism education to tourism labour market (cf. also Bertschy et al., 2008). The probabilities of a *direct industry change of non-tourism alumni who did (not) work during education in a non-tourism industry* average p (worked) $= 0\%$ and p (did not work) $= 11.6\%$.

Indirect movers (choice = 4)

The model shows that the dummy variable tourism has a highly significant and positive influence on the probability of being employed in an industry other than the training industry. Henneberger and Sousa-Poza (2007) confirm that it is women rather than men who tend to change their training industry indirectly. However, the coefficient is non-significant. The model shows that an early graduation year (e.g., 1997) increases the probability of leaving the training industry. This is unlike the results for the direct mover model, in which an early graduation year is associated with a lower exit prob-ability. The rationale for the positive correlation is the job searching process of alumni. As graduates require time to enter the labour market, the older the graduation year, the higher is the chance that an alumnus enters the labour market. As in the direct mover model, the probability of leaving the industry declines with having worked in the training industry during education. Older alumni have a lower mover probability (non-significant) than younger ones. This result is consistent with Henneberger and Sousa-Poza (2007).

The *probabilities of an indirect industry change* average $p = 10.3\%$ for indirect movers in tourism and $p = 3.2\%$ for indirect movers not in tourism. Thus, the probability of an indirect industry change is about three times as large in tourism as compared to non-tourism.

Age: The probabilities of an *indirect industry change of a 20-, 25- or 30-year-old tourism alumnus* average $p = 13.9\%$, $p = 10.8\%$ and $p = 8.2\%$, respectively. Thus, the probability of leaving the training industry indirectly declines with increasing age (non-significant). This result is in line with Lehmann (2007). The probabilities for an *indirect industry change of a 20-, 25- or 30-year-old non-tourism alumnus* average $p = 4.3\%$, $p = 3.4\%$ and $p = 2.6\%$, respectively. Thus, older non-tourism alumni have lower probabilities of leaving their training industry than younger alumni (non-significant).

Gender: The probabilities of an *indirect industry change of a male or female tourism alumnus* average $p = 7.6\%$ and $p = 12.7\%$, respectively. Thus a female graduate has a higher indirect mover probability than a comparable male graduate (non-significant). The probabilities for an *indirect industry change of a male or female non-tourism alumnus* average $p = 2.3\%$ and $p = 4.1\%$, respectively. As in the case of tourism alumni, women are more likely than men to leave their industry (non-significant).

Education: The probabilities of an *indirect industry change of tourism alumni with a high or low level of education* average $p = 10.9\%$ and $p = 10.1\%$, respectively. Other than in the direct mover model, the estimation results in a higher indirect mover probability for alumni with a tertiary education than for alumni with a secondary education level (non-significant). The probabilities for an *indirect industry change of non-tourism alumni with a high or low level of education* average $p = 3.2\%$ and $p = 3.2\%$, respectively. In contrast to the tourism industry, there is no mover probability difference by education levels (non-significant).

Graduation year: The probabilities of an *indirect industry change of tourism alumni with graduation year 1997, 2002 and 2006,* respectively, average $p = 36.2\%$, $p = 14.9\%$ and $p = 6.4\%$. As opposed to the direct mover model, the probability of leaving the industry has fallen. As the job searching process is time-consuming, the probability of an indirect exit is higher the older the graduation year. The same phenomenon can be detected for non-tourism alumni. The probabilities of an *indirect industry change of non-tourism alumni with graduation year 1997, 2002 and 2006,* respectively, average $p = 13.2\%$, $p = 4.8\%$ and $p = 2.0\%$.

Graduation mark: The probabilities of an *indirect industry change of tourism alumni with a sufficient (4), good (5) and excellent (6) graduation mark,* respectively, average $p = 17.2\%$, $p = 9.7\%$ and $p = 5.2\%$. A better graduation mark tends to have a positive effect on staying in the tourism industry after graduation (non-significant). The probabilities of an *indirect industry change of non-tourism alumni with a sufficient (4), good (5) and excellent (6) graduation mark,* respectively, average $p = 5.6\%$, $p = 3.0\%$ and $p = 1.6\%$. Alumni of a non-tourism industry tend to show similar behaviour in their graduation mark (non-significant) to those of the tourism industry.

Worked during education in training industry: The probabilities of an *indirect industry change of tourism alumni who did (not) work during education in tourism industry* average p (worked) $= 2.5\%$ and p (did not work) $= 11.3\%$. Whether or not a tourism alumnus had worked during his education is crucial in his decision to leave or stay in the industry. The probabilities of an *indirect industry change of non-tourism alumni who did (not) work during education in non- tourism industry* average p (worked) $= 0.7\%$ and p (did not work) $= 5.6\%$. The probability of leaving the industry converges to zero if the alumnus had worked during his education.

Direct/indirect movers with move-in (choice = 3)

The model shows that the dummy variable tourism has a highly significant and negative influence on the probability of being employed in the training industry directly or indirectly *and* of returning to the training industry. No other coefficient is significant.

The *probabilities of a direct or indirect industry change with move-in* average $p = 1.1\%$ for move-in into the tourism industry and $p = 6.9\%$ for move-in into a non-tourism industry. Thus tourism alumni have a significantly lower probability of returning to the industry of training after a direct or indirect industry exit.

Age: The probabilities of a *direct/indirect industry change with move-in of a 20-, 25- or 30-year-old tourism alumnus* average $p = 1.4\%$, $p = 1.2\%$ and $p = 1.0\%$, respectively. The probabilities for a *direct/indirect industry change with move-in of a 20-, 25- or 30-year-old non-tourism alumnus* average $p = 8.3\%$, $p = 7.1\%$ and $p = 6.0\%$, respectively. Both in tourism and non-tourism, younger alumni are more apt to exit their industry directly or indirectly *and* to return to their training industry afterwards (non-significant).

Gender: The probabilities of a *direct/indirect industry change with move-in of a male or female tourism alumnus* average $p = 1.1\%$ and $p = 1.2\%$, respectively. Thus a female graduate has a slightly higher probability of re-entering her training labour market after a direct or indirect industry change than a comparable male graduate (non-significant). The probabilities of a *direct/indirect industry change with move-in of a male or female non-tourism alumnus* average $p = 6.4\%$ and $p = 7.2\%$, respectively.

Education: The probabilities of a *direct/indirect industry change with move-in of tourism alumni with a high or low level of education* average $p = 1.7\%$ and $p = 1.1\%$, respectively. The estimation shows that the probability of re-entering after a direct or indirect industry exit is higher if the alumnus has a tertiary and not a secondary education (non-significant). The same phenomenon holds for non-tourism industries. The probabilities of a *direct/indirect industry change with move-in of non-tourism alumni with a high or low level of education* average $p = 9.8\%$ and $p = 6.2\%$, respectively.

Graduation year: The probabilities of a *direct/indirect industry change with move-in of tourism alumni with graduation year 1997, 2002 and 2006,* respectively, average $p = 1.6\%$, $p = 1.3\%$ and $p = 1.0\%$. The model shows a moderate decline of the probability of re-entering after a direct or indirect exit for the last 10 years (non-significant). The same phenomenon holds for non-tourism industries. The probabilities of a *direct/indirect industry change with move-in of non-tourism alumni with graduation year 1997, 2002 and 2006,* respectively, average $p = 11.1\%$, $p = 7.9\%$ and $p = 5.7\%$.

Graduation mark: The probabilities of a *direct/indirect industry change with move-in of tourism alumni with a sufficient (4), good (5) and excellent (6) graduation mark,* respectively, average $p = 1.7\%$, $p = 1.1\%$ and $p = 0.7\%$. A better graduation mark tends to have a negative effect on re-entering the tourism industry after a direct or indirect exit (non-significant). The probabilities of a *direct/indirect industry change with move-in of non-tourism alumni with a sufficient (4), good (5) and excellent (6) graduation mark,* respectively, average $p = 10.6\%$, $p = 6.5\%$ and $p = 3.9\%$. Alumni of a non-tourism industry tend to show similar behaviour in regards to their graduation mark (non-significant)

Worked during education in training industry: The probabilities of a *direct/indirect industry change with move-in of tourism alumni who did (not) work during education in tourism industry* average p (worked) $= 1.1\%$ and p (did not work) $= 0.7\%$. If a tourism alumnus had worked during his education, the probability of returning to the tourism sector after a

direct or indirect exit is somewhat higher than without having worked during his education. For non-tourism industries, the correlation is the other way round. The probabilities of a *direct/indirect industry change with move-in of non-tourism alumni who did (not) work during education in non-tourism industry* average p (worked) $= 5.9\%$ and p (did not work) $= 6.5\%$.

Conclusions

An important educational, political and economical result comes from the determinant graduation year for direct movers. According to the study, the direct mover probability has risen in the last 10 years for tourism alumni. The same phenomenon can be detected for non-tourism industries as well, but on a lower level and with lower rates of growth. This result suggests that the tourism labour market in Switzerland has lost some of its appeal compared to non-tourism labour markets. Also, the below average move-in probability shows that the tourism labour market seems to be less attractive than the average non-tourism labour market.

An educational background with work experience during education increases the likelihood of staying in tourism and non-tourism industries. This result is of educational and political importance especially for the tourism industry, which exhibits above average mover probabilities. The estimated models show that a dual vocational training or a higher special school (HF) with placement have to be assigned a high priority in tourism education in order to lower or to stabilise the above average mover probabilities.

For non-tourism as well as for tourism industries, the age variable shows that to lower direct mover probabilities, graduation should take place as early as possible.

The probability of a direct exit is higher for alumni with a secondary education, both for tourism and non-tourism industries. On the other hand, for tourism alumni with an indirect industry change, alumni with a tertiary education have a higher probability of leaving the tourism industry than those with a secondary education background. Thus, if tourism alumni with a secondary education leave the tourism industry, they do it directly after graduation, whereas tourism alumni with a tertiary education leave the tourism industry indirectly. Contingent on the level of education, the education industry and educational policy have to draw different conclusions. For alumni with a secondary education, most notably the transfer from education to labour market should become an area of focus (in terms of the direct mover probability). For alumni with a tertiary education background (in terms of the indirect mover probability), the transfer of "labour market of training industry – non-training industry" should become an area of focus.

Notes

[1] cf. Hotel + Tourism revue htr as of February 15th 2007

[2] cf. Hotel & Gastro Union survey (2007) among cooks, kitchen employees, hotel and restaurant professionals and employees. Internal evaluations. Lucerne.

[3] Vocational basic formation, higher vocational training, higher specialist schools (HF), universities of applied sciences (FH), universities; in the education areas of restaurant and hotel industry, general tourism (destination management organisations, tourism organisations etc.), travel offices and tourism federations/associations, touristic transport (navigation, civil aviation, public transport and others), sports and entertainment, event management.

[4] Tourism is both on the side of education and on the side of the labour market – a "cross-section" industry. The tourism labour market is defined as the coincidence of demand and supply in the sectors

of hotel and restaurant, general tourism (destination management organisations, tourism organisations, etc.), travel offices and tourism federations/associations, touristic transport (navigation, civil aviation, public transport and others), sports and entertainment, and event management.

[5] All model estimations, marginal effects and predicted probabilities of the several transition and worker mobility types are available on http://www.fif.unibe.ch. In addition, the records are obtainable from the author directly under andreas.heller@gmx.ch.

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