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Working Paper

Participation in continuing vocational training in Germany between 1989 and 2008

SOEPpapers on Multidisciplinary Panel Data Research, No. 514

Provided in Cooperation with:

German Institute for Economic Research (DIW Berlin)

Suggested Citation: Yendell, Alexander (2012) : Participation in continuing vocational training in Germany between 1989 and 2008, SOEPpapers on Multidisciplinary Panel Data Research, No. 514, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin

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Alexander Yendell

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ISSN: 1864-6689 (online)

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Participation in Continuing Vocational Training in Germany between 1989 and 2008

Alexander Yendell^{*}

Abstract

Who participates in continuing vocational training and who does not? This central question in research on continuing vocational training gains in significance the more the importance of lifelong learning is postulated. On the basis of the SOEP data collection periods of 1989, 1993, 2000, 2004 and 2008, I will describe participation in continuing vocational training in Germany between 1989 and 2008, and explain this participation according to two prominent theories derived from the economics of education – the human capital theory and the theory of labour market segmentation.

JEL: I24

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1 Introduction

Despite the increasing importance given to informal learning, participation in formal continuing vocational training is still highly relevant. As can be seen clearly from the manifestos of the established and smaller political parties in Germany, lifelong learning and continuing vocational training are an extremely important educational and economic theme in political life. There is no established party in Germany, whether on the left or the right, which does not seek to promote lifelong learning and continuing vocational training. The Federal Ministry of Education and Research also assigns great relevance to organised further education (Bundesministerium für Bildung und Forschung, 2011, 72). According to the Ministry, continuing vocational training helps to provide the skills which become necessary due to technological and economic changes while acting as an effective means for compensating for skills shortages. Adult Education experts have stressed ‘the growing knowledge base of all areas of life’ (Autorengruppe Bildungsberichterstattung, 2010, 135), while others talk of a ‘transformation process’ (Schrader, 2003, 142), of a change from an industrial to a service society, and an accompanying change from a ‘work to a knowledge society’. According to Schröder, in such a society, the knowledge base has risen significantly and the growth in the number of educated people has gained increasing momentum (Schröder, 2009). And, according to Jacobsen, we can expect to see in the future even more employees in the service sector performing ‘knowledge-based work’ (Jacobsen, 2010, 221).

The question with which I am concerned here has been the focus of attention since the beginning of research into further education in Germany at the beginning of the twentieth century: which social groups participate in training courses and which do not? With the increasing commodification of adult education and the shift from popular education (*Volksbildung*) to continuing vocational training, research in this area has grown, so that there are now several sources of data that can help us to answer this question (e.g. Berichtssystem Weiterbildung/Adult Education Survey; Continuing Vocational Training Survey; German Mikrozensus; Socio-Economic Panel Study, IAB Establishment Panel). There are now a large number of publications which, on the one hand, describe the learning behaviour of people in Germany regarding continuing vocational training and, on the other, try to explain the factors that determine participation in continuing vocational training. These publications come again and again to the conclusion that continuing vocational training is an educational resource which is unequally distributed. For instance, women participate less in such training than men, people with a low level of school qualification much less than people with a high level

of school qualification , and older people less than younger people (e.g. Schömann/Leschke, 2008; Schiener, 2006; Wilkens/ Leber, 2003)

In my article, I describe the development of participation in continuing vocational training between 1989 and 2008 from two briefly described theoretical perspectives – the human capital theory and the theory of labour market segmentation – and also seek to explain, by using a multivariate model, which factors derived from both theories influence such participation.

2 Theoretical Considerations

Participation in continuing vocational training is normally explained according to economic theories of education, in which the theory of human capital, based on the classical neo-liberal political economy of Adam Smith and later on neoclassical economics, is most prominent (Solow, 1956; Schultz, 1961; Becker, 1993). From the perspective of human capital theory, people usually behave in a way to maximise their benefits, which means that individuals only decide to participate in continuing vocational training when the expected benefits – that is, an increase in income – outweigh the costs (cf. Pfeifer / Behringer / Adam, 2008, 2). This theory also explains the employers' investment in the human capital of their employees (cf. Schmid / von Dosky / Braumann, 1996, 69; Behringer, 1999, 31). The employer assumes, from the perspective of human capital theory, that investment in continuing vocational training will result in increased productivity and lower costs in the future. In the same way that employees are interested in investing in education to the extent that it yields the appropriate financial returns, the employer is interested in investing in continuing vocational training to the extent that the costs are outweighed by gains in production (Hubert / Wolf, 2007, 6).

From such a perspective arise numerous assumptions: that older people participate in continuing vocational training less than younger people because they do not expect promotions and because they are approaching the end of their career path (cf. Leber / Möller, 2007; Hubert / Wolf, 2007; Eckert / Schmidt, 2007; Behringer, 1999; Becker / Hecken, 2008); and that women are less willing to participate in continuing vocational training because they more often take on childcare responsibilities and are therefore not in employment during this period or only work on a part-time basis (cf. Brödel / Yendell, 2008; Hubert / Wolf, 2007). Employers, in turn, show little interest in financing cost-intensive

courses for women in part-time employment since the increase in productivity that can be expected does not seem high enough (see Hubert / Wolf, 2007). Women are therefore more affected by statistical discrimination, and more prone to 'broken biographies'. What is also expected is that participation in continuing vocational training will increase with the level of education. Investment in education up to now shows a willingness to accept a longer period of financial and temporal sacrifice in the expectation of higher income returns (see Behringer, 1999, 57). Higher levels of qualification are at the same time a signal for an increased readiness to participate in continuing vocational training (ibid.). Also, higher positions within a company correlate positively with participation in continuing vocational training, and not least because highly qualified people within a company have a 'multiplier effect' (Hubert / Wolf, 2007, 8) to the extent that they pass on their acquired knowledge to other employees in the company. Moreover, it can be assumed that there is more participation in continuing vocational training in industries with a high level of innovation (cf. Behringer, 1999, 57). It is to be expected that, especially in knowledge-intensive industries, there will be a high demand for learning and continuing vocational training.

According to the hypothesis of labour-market segmentation by Lutz und Sengenberger the German labour market is divided into three very stable, self-contained segments and moving between the segments is made very difficult by the barriers put on mobility (Lutz/ Sengenberger 1974). In the so-called *everyman's labour market* (Sengenberger, 1987, 119) the employer is not tied to the employee, who, in turn, is always replaceable (ibid.). What is required on this labour market are merely basic knowledge of the language, a minimum level of physical performance, and the discipline to work (Sengenberger, 1987, 120). Since the employer has little interest in keeping its employees on a long-term basis, it seldom offers opportunities for continuing vocational training (cf. Becker / Hecken, 2008, 142). In addition, the predominantly simple activities in this segment are unlikely to make further training necessary. Lutz and Sengenberger differentiate this particular segment from what they call the *company-internal labour market*, which consists of employees with company-specific skills. The skills are so company-specific that the employee is tied to her or his particular company, making a switch to a different employer very difficult. Nonetheless, the chances of promotion within the company itself are high and employment is long-term (cf. Lutz, 1987, 1-2). Since the employee is recruited not only for the entry-level job, 'but for a whole sequence of jobs' (Blossfeld / Mayer, 1988, 264), employers are interested in the learning ability of the workforce, and it can therefore be expected that participation in continuing

vocational training in this segment is high and that the labour force will contribute to the costs of such training (cf. Schiener, 2006, 140). The third segment of the labour market – the *field-specific labour market* - consists of career professionals (Sengenberger, 1987, 126), who have a standard occupational or industry-specific qualification in the form of a certificate (certificate of proficiency, journeyman's certificate, diploma, etc.). This standardisation enables employees to change companies unproblematically. According to Schiener, the formal restrictions on access to companies in this segment require heavy investment in initial training and not so much in corporate training (cf. Schiener, 2006, 140). Therefore, participation in continuing vocational training is lower, and employees must bear the cost of such training more frequently.

3 Results of the Descriptive Analysis

In what follows I will present some results from the German Socio-Economic Panel (SOEP) Study¹ against the background of the theoretical considerations. In the SOEP, a number of questions concerning participation in continuing vocational training were asked in the survey waves of 1989, 1993, 2000, 2004, and 2008. My analysis focuses on the question of participation in continuing vocational training in a three-year period prior to and including the survey date.² I will evaluate the information provided by the respondents concerning their participation in professionally-oriented courses, the respondents here being aged 19 to 64, in employment, and neither in an apprenticeship nor in retirement.³

Development of participation in professionally-oriented courses

What we can see from the results is that the proportion of those participating in professionally-oriented courses in the period of three years rose between 1989 and 2000 from 22.3% to 28.0% (Figure 1). In 2004, the rate of continuing vocational training fell again by three percentage points, but reached its highest level to date of 28.2% in 2008.

¹ For more information about the SOEP see Wagner et al. (2007).

² The question in the SOEP is: 'There are different opportunities available if one wants to educate oneself further. Think back in the last three years. Have you in that time period done any of the following to further your professional education? Answers: Regularly read scientific or professional publications, Attended professional conventions or congresses, Participated in professionally oriented courses, including those which are still in progress'. My analysis focuses only on the last form of continuing vocational training, i.e., on professionally-oriented courses.

³ For this reason, I exclude from my analysis the retired, trainees, those still at school, as well as people doing their military or civilian service.

The expansion, especially in the 1990s, is due, amongst other factors, to the specific conditions on the labour market in the new federal states, which had a marked effect on the participation rate in the period after 1989 (von Rosenblatt / Bilger, 2008, 12). While in the 1990s the rate of participation in continuing vocational training in East Germany was still a few percentage points higher than in the West, after 2000 this difference became less and less, so that, in 2008, there were barely any differences at all between West and East Germany.

FIGURE 1

The increase in the general rate of continuing vocational training can mainly be explained by the rise in employment levels in the knowledge-intensive service sector⁴. It is noticed that most respondents in employment are employed in service industries which are not knowledge-intensive, and that this has been the case since the first survey period in 1989 (Figure 2). It is the knowledge-intensive service sector in particular which has experienced a massive growth. Since the survey period of 2000, there are more recipients of further training employed in the knowledge-intensive service sector than in the non-knowledge-intensive manufacturing sector, with the latter experiencing a rapid decline.

FIGURE 2

Regarding the participation in continuing vocational training the analysis shows that the rate is highest in the knowledge-intensive service sector (in 2008: 40.5%, Figure 3). Since the first survey period in 1989, this rate has increased by 6.6 percentage points. As expected, the lowest rate of continuing vocational training is in the non-knowledge-intensive manufacturing sector, where the rate in 2008 was only 13.3%, its lowest level since 1989. The non-knowledge-intensive service sector and the knowledge-intensive manufacturing sector have approximately the same rate of continuing vocational training.

FIGURE 3

⁴ To categorise the different sectors of industry, I have used Harald Legler und Rainer Frietsch's method of identification (2006, 5 ff). In their identification of knowledge-intensive branches and goods, Legler and Frietsch employ different indicators for the service sector and the industrial sector respectively, and they provide a list which, constructed from various data sources, statistical analyses (e.g., OECD data), and patent research, considers the different economic branches of the Federal Employment Agency.

Participation in professionally-oriented courses according to age

Further analysis shows, as expected, that the age group least involved in continuing vocational training comprises people aged between 50 and 64 (Figure 4). Also, younger people aged 19 to 34 participate as frequently in such training as the middle age group of 35 to 49. There is another trend to notice here, though: the clearest increase in the number of continuing vocational training events visited in the last few years is amongst the older employees (data not presented here).

There could be several reasons for this. Since the cohorts who were educated during the expansion of education in the 1960s and 1970s have higher formal qualifications than those cohorts preceding them, there are increasingly more older employees who have had experience of continuing vocational training who have higher formal qualifications than older cohorts (cf. Iller, 2008, 85).

FIGURE 4

Participation in professionally-oriented courses according to gender

If we compare the rates of participation of men and women, what we can notice is that, since the end of the 1990s, women have been catching up in regard to attending courses and training sessions (Table 1), with the difference in 2008 being only 3%. The correlation coefficient (Phi) shows that the relationship between gender and participation in continuing vocational training has become ever weaker over the years. Before the fall of the Berlin Wall in 1989, the group of women in West Germany participating in professionally-oriented courses was about 14 percentage points less than for men. Both our own results and the results of other studies confirm this trend of alignment (cf. Schömann / Leschke, 2008, 351; Wilkens / Leber, 2003, 334).

TABLE 1

The remaining difference can be explained by the higher volume of work performed by men (cf. Von Rosenblatt / Bilger, 2008, 58) and, as assumed, by the fact that women are more often involved in family activities and parenting (Schömann / Leschke, 2008, 351; Leber / Möller, 2007, 13-14). Indeed, since the 2000 survey, there has been no significant correlation with gender, if only those in employment are included in the analysis (results not presented

here; for similar results, see also Wilkens / Leber, 2003, 334; Schiener, 2006, 169-170). However, in the survey periods of 1989 and 1993, this correlation was significant.

Participation in professionally-oriented courses according to labour market segment

If we look at the data according to labour market segment, then the following picture emerges.⁵ The highest rates of participation are in the company-specific labour market and in the field-specific labour market, whose rates are clearly higher than they are in the everyman's labour market. Such results are to be expected and match Schiener's results (2006, 164-166).

FIGURE 5

4 Factors Determining Participation in Continuing Vocational Training of Employees

In the following, I will explain participation of employees in continuing vocational training using structural equation models with a simple causal structure. These have the advantage over conventional linear regression models in that they consider the intercorrelations between the independent variables⁶, making possible more precise parameter valuations. These models also take measuring errors into consideration.

In the model, some indicators are considered which can be deduced not only from human capital theory but also from the theory of labour market segmentation. In addition, the knowledge-intensive service industry is included as a dummy variable. The other segments would have worsened the model fit, so they have been removed from the model. The results show that by far the most influential indicator across all the survey periods is that of occupational status (Table 2). There are several explanations for this. On the one hand, this could be connected to the high demands that are made in higher occupational positions. On

⁵ To study participation in continuing vocational training according to different labour market segments, I followed Blossfeld / Mayer (1988, 266), Szydlik (1990, 53-67), and Schiener (2006, 164) in dividing segments into four types. Company size and the skills required by the job are taken into consideration in the empirical implementation of the segments. Low-skilled jobs requiring no training or simply a short instruction are assigned to the everyman's labour market. This market is further divided according to company size, with smaller companies comprising fewer than 200 employees and larger companies comprising more than 200 employees. Higher-skilled jobs belong to the field-specific labour market, if there are fewer than 200 employees in the company, or to the company-internal sector, if there are more than 200 employees in the company.

⁶ The strongest considered intercorrelation is between the required skills for the occupation and the employment status, the intercorrelations are not presented here, but are available from the author upon request

the other, because people in positions of leadership more often take on multiplier functions (Hubert / Wolf, 2007) and pass on what they have learned to others in the company. What is also worth mentioning is the training required in the particular job: as expected, the likelihood of participation in continuing vocational training rises with the professional education that is required for the job. The other factors play a smaller role. For example, age, when taken into account in connection with the number of years of education, has barely any influence.

TABLE 2

5 Summary

Participation in continuing vocational training is increasing primarily because there are more and more people working in the knowledge-intensive and non-knowledge-intensive service sector, a sector in which continuing vocational training plays an important role. It is encouraging that women nowadays participate more in continuing vocational training than in the late 1980s, although this is also connected to employment status. Female part-time work or even unemployment, often combined with childcare, have a negative effect on participation in continuing vocational training. What is also interesting is that older employees now participate in continuing vocational training more often than it used to be the case, which suggests that it is not so much age that is decisive as the level of education or the field of occupation. Participation in continuing vocational training is also connected to the labour market segment: the so-called everyman labour market has the lowest rate of participation, the company-specific (often the service industries) labour market has the highest, with the professional labour market lying between the two. The multivariate model shows that it is above all the occupational status which is most decisive in determining participation in continuing vocational training. People in leadership positions have a higher chance of participating in continuing vocational training than people lower down in the hierarchy. This could also lead to a problem: continuing vocational training is distributed primarily according to the 'Matthew Principle'. It is those who have already benefited who benefit further in the form of educational resources which have a positive effect on income and employability.

References

- Autorengruppe Bildungsberichterstattung (2010): Bildung in Deutschland. Ein indikatorengestützter Bericht mit einer Analyse zu Perspektiven des Bildungswesens im demografischen Wandel, Bielefeld.
- Becker, G. S. (1993): Human Capital. A theoretical and empirical analysis, with special reference to education, 3rd edn., Chicago.
- Becker, R./ Hecken, A. (2008): Berufliche Weiterbildung - arbeitsmarktsoziologische Perspektiven und empirische Befunde, in: M. Abraham/T. Hinz (eds.), Arbeitsmarktsoziologie. Probleme, Theorien, empirische Befunde, 2nd edn., Wiesbaden, 133–168.
- Behringer, F. (1999): Beteiligung an beruflicher Weiterbildung. Humankapitaltheoretische und handlungstheoretische Erklärung und empirische Evidenz, Opladen.
- Blossfeld, H.-P./ Mayer, K. U. (1988): Arbeitsmarktsegmentation in der Bundesrepublik Deutschland. Eine empirische Überprüfung von Segmentationstheorien aus der Perspektive des Lebenslaufs, Kölner Zeitschrift für Soziologie und Sozialpsychologie 40, 262–283.
- Brödel, R./ Yendell, A. (2008): Weiterbildungsverhalten und Eigenressourcen. NRW-Studie über Geld, Zeit und Erträge beim lebenslangen Lernen, Bielefeld.
- Bundesministerium für Bildung und Forschung (ed.) (2011): Berufsbildungsbericht 2011, Bonn, online available under: http://www.bmbf.de/pub/bbb_2011.pdf, 27 August 2012.
- Eckert, T./ Schmidt, B. (2007): Entwicklung der Weiterbildungsbeteiligung in Deutschland, Research Notes des Rates für Sozial- und Wirtschaftsdaten, 3, Berlin, online available under http://www.ratswd.de/download/workingpapers2007/06_07.pdf, 20 August 2009.
- Hubert, T./ Wolf, C. (2007): Determinanten und Einkommenseffekte beruflicher Weiterbildung. Eine Analyse mit Daten des Mikrozensus 1993, 1998 und 2003, Research Notes des Rates für Sozial- und Wirtschaftsdaten, 5, Berlin, online available under http://www.ratswd.de/download/RatSWD_RN_2007/RatSWD_RN_05.pdf, 23 July 2012.
- Iller, Carola (2008): Berufliche Weiterbildung im Lebenslauf - bildungswissenschaftliche Perspektiven auf Weiterbildungs- und Erwerbsbeteiligung Älterer, in: A. Kruse (ed.), Weiterbildung in der zweiten Lebenshälfte. Multidisziplinäre Antworten auf Herausforderungen des demografischen Wandels, Bielefeld, 67–91.
- Jacobsen, H. (2010): Strukturwandel der Arbeit im Tertiärisierungsprozess, in: F. Böhle/G. Voß/ G. Wachtler (eds.), Handbuch Arbeitssoziologie, Wiesbaden, 203–228.
- Leber, U./ Möller, I. (2007): Weiterbildungsbeteiligung ausgewählter Personengruppen, Research Notes des Rates für Sozial- und Wirtschaftsdaten, 8, Berlin, online available under http://www.ratswd.de/download/workingpapers2007/12_07.pdf, 21 August 2012.

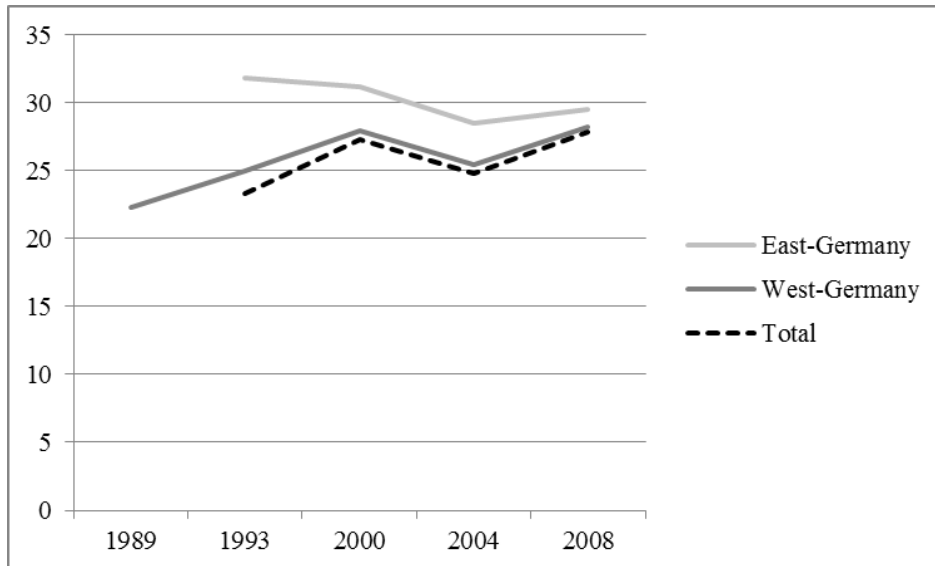
- Legler, H.; Frietsch, R. (2006): Neuabgrenzung der Wissenswirtschaft - forschungsintensive Industrien und wissensintensive Dienstleistungen. (NIW/ISI-Listen 2006), Bundesministerium für Bildung und Forschung (BMBF) (eds.), Berlin, online available under <http://www.bmbf.de/pubRD/sdi-22-07.pdf>, 27 August 2012.
- Lutz, B. (1987): Arbeitsmarktstruktur und betriebliche Arbeitskräftestrategie. Eine theoretisch-historische Skizze zur Entstehung betriebszentrierter Arbeitsmarktsegmentation, Frankfurt am Main.
- Lutz, B./ Sengenberger, W. (1974): Arbeitsmarktstrukturen und öffentliche Arbeitsmarktpolitik. Eine kritische Analyse von Zielen und Instrumenten, Göttingen.
- Pfeifer, H./ Behringer, F./ Adam, T. (2008): Formalisierte berufliche Weiterbildung - Sekundäranalysen auf Basis des SOEP und anderer international vergleichbarer Erhebungen (BENEFIT), Abschlussbericht, Bonn, online available under http://www2.bibb.de/tools/fodb/pdf/eb_23105.pdf, 10 August 2012.
- Rosenblatt, B. von/ Bilger, F. (2008): Weiterbildungsbeteiligung in Deutschland. Eckdaten zum BSW-AES 2007, München, online available under http://www.bmbf.de/pub/weiterbildungsbeteiligung_in_deutschland.pdf, 12 August 2012.
- Schiener, J. (2006): Bildungserträge in der Erwerbsgesellschaft. Analysen zur Karrieremobilität. Wiesbaden.
- Schmid, H./ Dosky, D./ Braumann, B. (1996): Ökonomik des Arbeitsmarktes 1, 2nd edn., Bern, Stuttgart, Wien.
- Schömann, K./ Leschke, J. (2008): Lebenslanges Lernen und soziale Inklusion - der Markt alleine wird 's nicht richten, in: R. Becker/ Lauterbach, W. (eds.): Bildung als Privileg. Erklärungen und Befunde zu den Ursachen der Bildungsungleichheit, 3rd edn., Wiesbaden, 347–383.
- Schrader, J. (2003): Berufliche Weiterbildung zwischen Öffentlichkeit und Privatheit. Wandel der Erwerbsarbeit - Wandel der beruflichen Weiterbildung? Report - Zeitschrift für Weiterbildungsforschung 16, 142–152.
- Schröder, T. (2008): Arbeits- und Lernaufgaben für die Weiterbildung. Eine Lernform für das Lernen im Prozess der Arbeit, Bielefeld.
- Schultz, T. (1961): Investment in Human Capital, *The American Economic Review* 51, 1–17.
- Sengenberger, W. (1987): Struktur und Funktionsweise von Arbeitsmärkten. Die Bundesrepublik Deutschland im internationalen Vergleich, Frankfurt am Main.
- Solow, R. M. (1956): A Contribution to the Theory of Economic Growth, *Quarterly Journal of Economics* 70, 65–94.
- Szydlik, M. (1990): Die Segmentierung des Arbeitsmarktes in der Bundesrepublik Deutschland. Eine empirische Analyse mit Daten des Sozio-ökonomischen Panels, 1984 – 1988, Berlin.

Wilkins, Ingrid; Leber, Ute (2003): Partizipation an beruflicher Weiterbildung - Empirische Ergebnisse auf Basis des Sozio-Ökonomischen Panels, Mitteilungen aus der Arbeitsmarkt- und Berufsforschung 36, 329–337.

Wagner, G.G./ Frick, J. R./ Schupp, J. (2007): The German Socio-Economic Panel Study (SOEP) - Scope, Evolution and Enhancements, Schmollers Jahrbuch 127, 139–169.

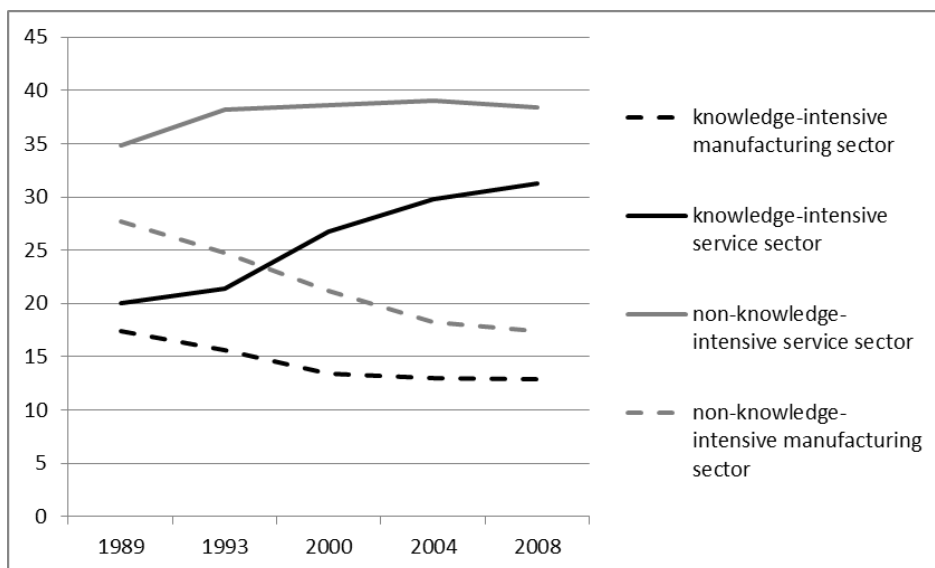
Figures and Tables

Figure 1: Participation in professionally-oriented courses in the last three years 1989 to 2008 (in percentage)



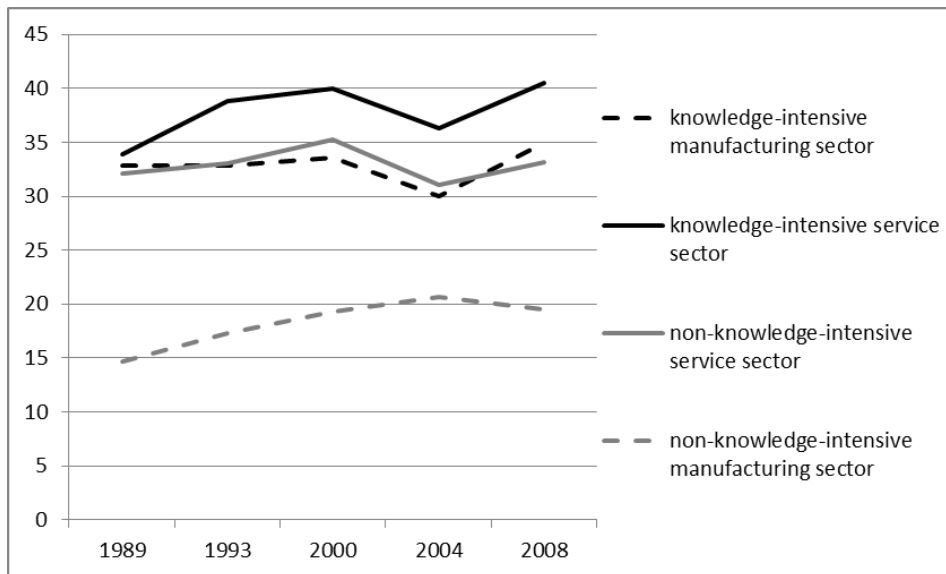
Source: SOEP, my own calculations (weighted)

Figure 2: Employees in industry sectors (in percentage)



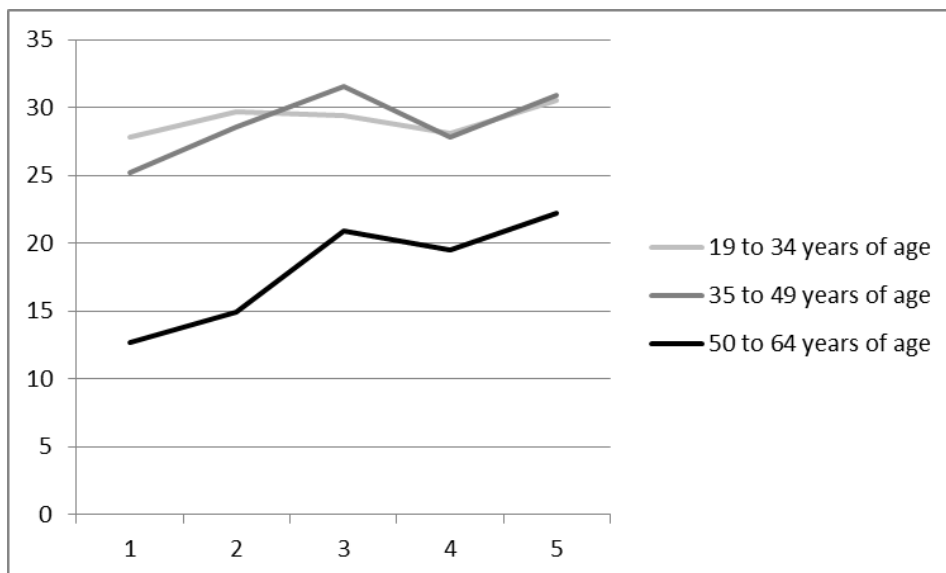
Source: SOEP, my own calculations (weighted)

Figure 3: Participation in professionally-oriented courses according to industry sectors (in percentage)



Source: SOEP, my own calculations (weighted)

Figure 4: Participation in professionally-oriented courses according to age (in percentage)



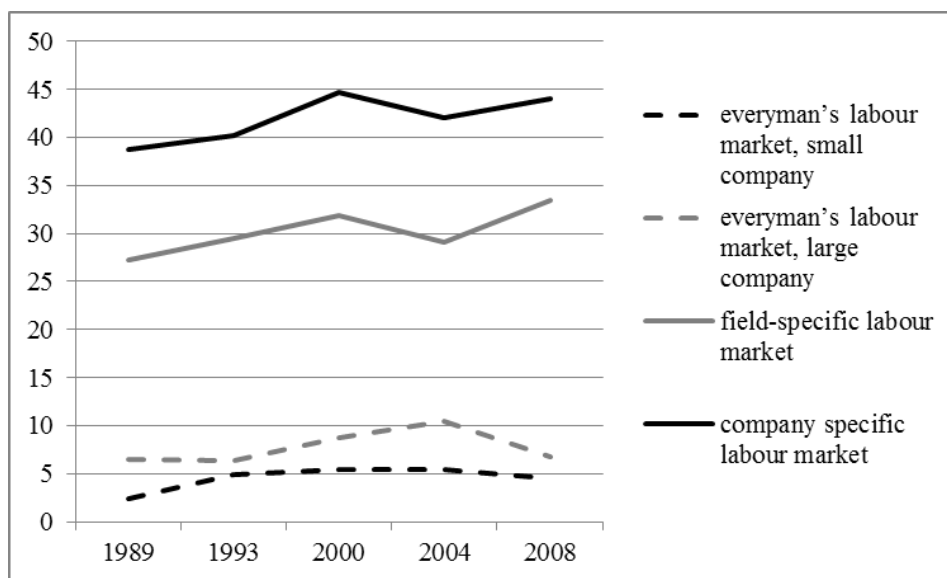
Source: SOEP, my own calculations (weighted)

Table 1: Participation in professionally-oriented courses according to gender (1989 to 2008 in percentage)

	1989	1993	2000	2004	2008
Male	29.5	29.3	30.5	28.2	29.7
Female	16.0	20.6	25.4	22.7	26.7
Phi	0.161	0.100	0.057	0.063	0.034
P	0.000	0.000	0.004	0.001	0.045

Source: SOEP, my own calculations (weighted)

Figure 5: Participation in professionally-oriented courses according to labour market segments (in percentage)



Source: SOEP, my own calculations (weighted)

Table 2: Factors Determining Participation in Continuing Vocational Training (only Employees, Structural Equation Models, Standardised Regression Coefficients)

	1989		1993		2000		2004		2008	
	β	P	β	P	β	P	β	P	β	P
company size ^a	0.093	0.000	0.063	0.000	0.088	0.000	0.085	0.000	0.080	0.000
knowledge-intensive service ^b	n.d.e. ^c		0.066	0.000	0.034	0.000	0.042	0.000	0.021	0.042
required qualification ^a	0.097	0.000	0.125	0.000	0.080	0.000	0.091	0.000	0.126	0.000
occupational status ^a	0.291	0.000	0.198	0.000	0.271	0.000	0.226	0.000	0.218	0.000
employment status ^a	0.029	0.031	0.035	0.013	n.d.e.		n.d.e.	0.000	n.d.e.	n.d.e.
limitation ^b					n.d.e.		n.d.e.	0.000	0.023	0.030
number of years of education	0.118	0.000	0.127	0.000	0.050	0.000	0.055	0.000	0.055	0.000
age	-0.101	0.000	-0.057		-0.057	0.000	-0.070	0.000	-0.068	0.000
sex ^b	n.d.e.	0.000	n.d.e.		-0.035	0.000	n.d.e.	0.000	-0.052	0.000
CMIN	7.471		4.201		5.967		67.165		7.240	
DF	5		3		6		8		7	
P	0.188		0.241		0.427		0.000		0.404	
CMIN/DF	1.494		1.400		0.994		8.396		1.034	
RMSEA	0.010		0.010		0.000		0.028		0.002	
PCLOSE	1.000		1.000		1.000		1.000		1.000	
R ²	0.229		0.185		0.157		0.132		0.146	
N	4508		4347		10954		9334		8184	

^a company size: under 20, 20 to under 200, 200 to under 2000, 2000 and more (1989); under 5, 5 to under 20, 20 to under 200, 200 to under 2000, 2000 and more (1993); under 5, 5 to under 20, 20 to under 100, 100 to under 200, 200 to under 2000, 2000 and more (2000 und 2004); under 5, 5 to 10, 11 to under 20, 20 to under 100, 100 to under 200, 200 to under 2000, 2000 and more (2008); occupational status (according to Behringer 1999): employees with simple tasks, skilled employee, case handler/lower management level, manager; required qualification: no qualification/instruction, initial training, training courses, vocational training, university; employment status: part time, full time (1989 and 1993); marginally employed, part time, full time (2000, 2004 and 2008):

^b categories of reference: knowledge-intensive manufacturing sector, non-knowledge-intensive manufacturing sector, non-knowledge-intensive service sector; fixed term or no employment contract; female

^c no direct effect