

# **Geography studies** in Poland after 1989 — selected issues

#### **Abstract**

Changes in the position of geography as a field of education are examined in the context of the socio-political transition in Poland after 1989 and in relation to the changes in higher education. The influences of changes in higher education on the number of geography students in the years 1990–2009, the regional differentiation of interest in geography studies, and developments in staff and the organization of schools with geography programmes are analysed. In the years 1989/90–2008/09 the number of higher education schools offering geography programmes increased by one third. The range of programmes offered was widened with new specialisations

#### Keywords

geography studies • higher education institutions • number of students recruitment

© University of Warsaw - Faculty of Geography and Regional Studies

#### Mariola Tracz<sup>1</sup> Adam Hibszer<sup>2</sup>

<sup>1</sup>Institute of Geography, Pedagogical University of Cracow e-mail: mtracz@up.krakow.pl

<sup>2</sup>Faculty of Earth Sciences, University of Silesia e-mail: adam.hibszer@us.edu.pl

Received: 20 May 2013 Accepted: 1 August 2013

#### Introduction

Since 1989, the onset of political transition in Poland, we have observed multi-aspectual changes in the system of academic education. Political transformation became the impulse to modify laws on higher education and induce development of a network of higher education schools. The Law on Higher Education (1990) created the possibility for legal and natural persons to establish higher education institutions and it defined requirements for their organisation, including a creation of branches and advisory points. Thus the state monopoly for providing higher education was eliminated. Those changes induced rapid growth in the number of schools from 97 state schools of higher education in 1989 to 456 schools (including 325 private ones) in 2008 (Fig. 1). Non-public (private) colleges were first founded in large urban centres such as Warszawa, Kraków, Poznań, Katowice etc., and later — which is typical of the Polish academic system — in cities with no university traditions.

The Law modification of 2005 has created a framework for particular degree courses and has specified educational standards and the minimum number of hours required for undergraduate (first-cycle or bachelor's) and postgraduate (second-cycle or master's) programmes. The State Accreditation Commission has been set up to evaluate the quality of academic training in a given field of education with respect to the requirements resulting from the educational standards and the Law on Higher Education. Substantial changes introduced by this act allowed for the establishment of higher vocational schools. New challenges were brought about by the implementation of the Lisbon Strategy and Bologna Declaration. In the 2007/2008 academic year, two-stage study programmes (3+2 years, undergraduate and postgraduate) were introduced for the majority of fields except law and medicine.

The main factors stimulating the quantitative development of higher education:

- a strong interest of young people in training at an academic level
- the growing importance of services and an increasing demand for highly qualified employees, resulting from the country's transition towards a market economy
- demographical factor: a high number of secondary school graduates born during the 1980-1986 baby boom
- adult learners, often forced to seek complementary training by the situation in the labour market

According to the Central Statistical Office the number of students in Poland increased from 378 400 in 1989/1990 to 1 927 762 in the academic year of 2008/2009. Such a five-fold increase in student number was also possible because of the legitimisation of tuition fees for non-stationary (extramural) studies at higher education state schools and for stationary (full-time courses) and non-stationary studies at institutions not administrated by the State.

# Recruitment System for Schools of Higher Education in Poland

Admission criteria are among the factors influencing the number of students. Between 1989 and 2005 admission procedures underwent essential changes due to the modification of legal regulations. Revised laws gave schools of tertiary education a larger freedom in setting their own entry requirements for a given course while a reform of the education system introduced external exams carried out by the Central Examination Board, established specifically for this purpose.

Until the 1990s admission criteria for geography studies were uniform at every academic centre offering this course. They included a written exam (essay on a selected topic or a test) and an oral exam in geography, a written exam in a modern foreign language and an oral exam in history (till the 1970s), and

later a mathematics exam. When new higher education schools appeared, especially when a very rapid growth in the number of non-public higher education schools was observed, entry requirements for geography studies were significantly liberalised.

Further qualitative changes to the recruitment procedures were introduced with the establishment of the Central Examination Board (CEB). Since its introduction in 2005, the results of the external Matura examination (secondary school final exam) conducted by the CEB have been the basis for admission. Only some higher education schools (e.g., academies of physical education, faculties of architecture etc.) which require the testing of skills essential for the studies hold competence exams. Higher education schools (universities, academies and others) are obliged to publish a prospectus describing the entry requirements for all the offered programmes so that by December secondary school students are able to decide on both the subjects and the levels for their Matura exams. Candidates can apply to three institutions of tertiary education, and recruitment commissions select successful applicants based on the results of the Matura examination. An analysis of the prospectuses from several schools has shown that the extended geography Matura exam score was the most common admission criterion for a geography course.

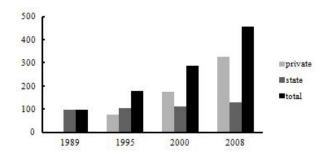


Fig. 1. Changes in the number of higher education schools in the years 1989–2008

Source: Statistical Yearbook of Poland (2009)

## **Research Methodology and Data Sources**

An analysis of the development of geography studies in the system of higher education in Poland after 1989 undertaken in this study focuses on the influence of socio-political transformations and challenges resulting from the changes in the labour market on the position of geography as a field of education. The analysis included the quantitative and qualitative development of higher

education schools offering geography programmes and the number of people studying geography against a background of the total number of students in Poland in the years 1989–2009. Significant changes in higher education in Poland occurred during this period (e.g., a clear increase in the number of universities and the number of students). The popularity of geography studies with reference to the 20 most popular courses in the country was analysed.

The analysis was based on statistical data provided by the Central Statistical Office concerning the number of higher education institutions, number of students by form of study and groups of fields of education. The essential source of information was the Polish Science Directory, published since 1990. Materials of the Ministry of Science and Higher Education (MSHE), published since 2002 in the form of a "Report", were also used. Detailed information on the number of geography students and the programmes offered was obtained in the form of a questionnaire directly from higher education institutions offering geography studies, since this kind of specific data is not available in the published statistical records. Unfortunately, it was not possible for the authors to determine the number of students in 1990 because the majority of higher education schools did not keep such data, and information on the number of geography students at private schools was also not available.

# **Development of Centres Offering Geography Programmes**

In Poland, geography as an academic discipline has a history dating back to the mid-19th century, when in 1849 the first chair of geography was established at the Jagiellonian University in Kraków. The development of university geography continued when Poland regained independence in 1918. Geography departments functioned in each of the five universities (Warszawa, Kraków, Lwów, Poznań and Wilno). Just after the war ten higher education schools offered geography studies (universities in Warszawa, Kraków, Lublin, Wrocław, Łódź, Poznań and Toruń and teacher training colleges in Gdańsk and Kraków). Geography studies were keenly chosen by young people, which was reflected in the growing number of schools offering geography programmes (Tab. 1). This interest was a response to the demand for geography teachers, especially at the level of primary and secondary education which lacked a qualified teaching staff. Therefore, higher education institutions of such a training profile were established.

After 1989, further development of units offering geography studies took place. Geography departments were opened at the University of Szczecin (1990) and in the Higher Pedagogical School in Bydgoszcz (1995). As a result of the development of research staff at the end of the 1970s, teacher training colleges

Table 1. Number of state higher education institutions offering geography programmes in the years 1946–2009

Years	Type of schools									
	Universities	Teacher Training College	Other Higher Schools	Academies	Total					
1946-1949	7	3	-	-	10					
1950-1959	7	2	3	-	12					
1960-1969	8	1	3	-	12					
1970-1989	8	3	-	-	11					
1990-1994	10	3	-	-	13					
1995-1999	10	4	-	-	14					
2000-2004	10	3	-	1	14					
2005-2009	13	-	-	1	14					

Source: Statistical Yearbook of Poland, (1960, 1980, 1990, 2000, 2009)

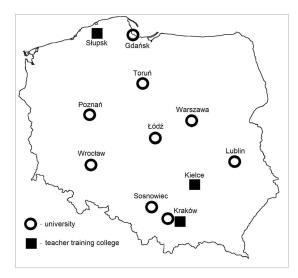


Fig. 2. Academic centres offering geography programmes in Poland in 1989

were transformed into academies (Kraków, Kielce, Słupsk, Bydgoszcz), and later the majority of them obtained university status (Bydgoszcz, Kielce, Kraków) (Tab. 1, Fig. 2, Fig. 3).

Geography programmes were opened only in two out of the 325 non-public schools, i.e. at the University of Economy in Bydgoszcz (2004) and in the Family Alliance Institute of Higher Education in Warszawa (1997). In the period analysed in both higher education schools (of a college nature) geography training was carried out at the bachelor's degree level. During the last 20 years of transformation the number of higher education institutions with geography studies increased by 33% from 12 to 16 centres. Typically, schools offering geography programmes are located in large cities, i.e. traditional academic centres.

The period of system transformation forced schools training geographers to frequently modify their offer of geography studies. Although geography as a subject is popular with secondary school students, i.e. potential candidates for geography studies, there is strong competition due to higher schools of economics (Tracz 2011). To counteract the "outflow" of candidates towards other fields of education, geography schools started new and presumably more attractive programmes or new specialisations within the existing ones: *Tourism and recreation, Spatial economy,* or *Environmental engineering* (Tab. 2). The main task of these activities is to prevent students from perceiving geography studies as a "ticket to a job" in low-paid occupations or simply as studies which do not help one find future employment.

# Dynamics of Growth in the Number of Geography Students against a Background of the total Number of Students and the most popular Fields of Education

Geography studies in Poland aim at providing students with knowledge and skills from a wide range of geographical sciences. Therefore, a question arises: how was the popularity of geography studies shaped against a background of other fields of education (courses) in Poland?

Analyses of the Reports by the Ministry (2002/2003, 2003/2004, 2008/09) indicate that geography had systematically weakened in its position in the ranking of the most popular courses (Tab. 3). This tendency is also confirmed by the decrease in the average number of candidates per place applying for geography studies, which amounted to 7.8 persons in 2005, 6.7 in 2006, and only 5.0 persons in 2008.

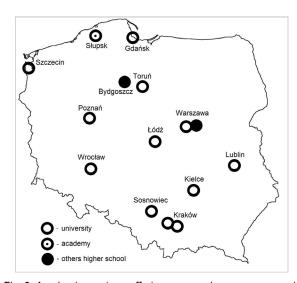


Fig. 3. Academic centres offering geography programmes in Poland in 2009

The period of significant growth in the total number of students in Poland was also marked by changes in the number of geography students. Changes in the number of students in the years 1990-2009 were investigated only in the system of state schools of higher education due to a lack of complete information from non-public institutions. In the years 1995-2000 the number of students increased from 8059 to 11237. The number of geography students attending extramural studies grew at a greater rate (by about 159%) than the number of full-time students (by 132%) (Czyż, 2002). When compared to the indices of growth of the total number of students (199.9%), the index of growth of geography students amounted to 139% (Tab. 4). One should emphasize that in the years 1990-2000 geography studies were only available at public higher education schools. In the period 2000-2005 the number of geography students at public higher education schools was stable, remaining at a level of 11200 people, whereas the index of growth of the total number of students amounted to 123%. In 2009 their number was almost the same as in 1995, but their percentage in the total number of students was two times smaller (Tab. 4). The decrease in the number of geography students was largely influenced by the opening of new courses related to geography: Tourism and recreation, European studies, Environmental protection, and Spatial economy. This process is reflected in the recent decrease in the number of students of geography. Despite the continuous strong interest of young people in the choice of geography for the Matura exam in the years 2005-2008 (Groenwald et al., 2008, Tracz 2008), the number of students of geography in Poland has remained unchanged (Tab. 4).

Regional variety of interest in geography studies, reflected in the number of geography students at particular higher education institutions is also observed. In the years 1995–2005 all higher education schools training geographers at full-time studies noted an increase in their number (Tab. 5, Fig. 4).

Between 1995 and 2000 the largest number of geography students studied at the University of Silesia in Sosnowiec (over 50% at non-stationary programmes) (Fig. 4). In the years 1995–2000 the largest indices of growth in the number of students typified the University of Gdańsk and the University of Warsaw (Tab. 5). A decrease in the number of students at the Adam Mickiewicz University in Poznań resulted from the fact that other competitive new fields of education such as geology were offered within the same faculty (Czyż, 2002). In the 2005/06 academic year

Vol. 17 • No. 3 • 2013 • pp. 19-25 • ISSN: 2084-6118 • DOI: 10.2478/v10288-012-0042-1

Table 2. Position of units conducting geography studies in higher education institutions, fields of education and the number of academic staff in the years 1989–2009

	Position of geography in the school structure		Fields of education		Academic staff						
Higher education institutions and location	1989	2009	1989	2009	Professor		Ass. Professors		Doctors		Students per one worker
					1989	2009	1989	2009	1989	2009	2009
Pomerania Pedagogical Academy in Słupsk (PPA)	GD	IG	GEO	GEO	7	1	-	6	10	21	16,2
Adam Mickiewicz University in Poznań (AMU)	IG	FG&GS	GEO	GEO	19	10	-	13	32	48	3,7
University of Gdańsk (UG)	IG	FOG	GEO	GEO	12	3	-	10	27	36	12,7
Jan Kochanowski University in Kielce (JKU)	IG	IG	GEO	GEO	8	3	-	4	12	17	20,5
Jagiellonian University in Kraków (UJ)	IG	IG&SE	GEO	GEO SE&RD	10	10	2	8	20	29	8,5
Kazimierz Wielki University in Bydgoszcz (KWU)	-	IG	-	GEO	-	1	-	5	-	10	18,4
University of Łódź (UŁ)	IG	FG	GEO	GEO SE TUR	14	7	1	11	31	43	10,8
Maria Curie- Skłodowska University in Lublin (UMCS)	IES	FES	GEO	GEO	17	7	-	11	39	48	5,5
Nicolas Copernicus University in Toruń (NCU)	IG	IG	GEO	GEO	8	6	-	10	13	33	9,8
Pedagogical University of Cracow (PUC)	IG	IG	GEO	GEO TUR	4	2	4	13	12	22	13,4
University of Silesia in Sosnowiec (US)	FES	FES	GEO	GEO	5	4	-	10	21	47	7,6
University of Warsaw (UW)	FG& RS	FG&RS	GEO	GEO SE		13	16	22		48	6,2
University of Wrocław (UWr)	IG	IG&RD	GEO	GEO	11	3	-	5	29	23	15,6
University of Szczecin (USz)	-	IMS	-	GEO	-	8	-	4	-	23	no data
Family Alliance Institute of Higher Education in Warszawa	-	FG	-	GEO	-	no data	-	no data	-	no data	
University of Economy in Bydgoszcz (UE)	-	IG&SE	-	GEO	6		2	5		r	no data

Explanations: FES – Faculty of Earth Sciences, FG – Faculty of Geography, FG&GS – Faculty of Geographical and Geological Sciences, FG&RS – Faculty of Geography and Regional Studies, FOG – Faculty of Oceanography and Geography, GD – Geography Department, IES – Institute of Earth Sciences, IG – Institute of Geography, IG&RD – Institute of Geography and Regional Development, IG&SE – Institute of Geography and Spatial Economy, IMS – Institute of Marine Science; GEO – geography, SE – spatial economy, SE&RD – spatial economy and regional development, TUR – tourism and recreation.

Source: Polish Science Directory 1989/90, 2009), Directory of Polish Geography (2006)

Table 3. Number of candidates for geography studies against the background of the most popular fields of education

	Years										
Course	2001/02	Rank	2003/04	Rank	2008/09	Rank					
Pedagogy	35 864	1	35 340	1	32 019	2					
Informatics	29 248	2	24 700	5	18 890	7					
Management	26 082	3	24 900	4	34 706	1					
Law	23 231	4	31 052	2	27 471	3					
Economy	17 774	5	30 700	3	23 278	4					
Environmental protection	11 463	14	11 200	15	11 344	16					
Biology	9 449	18	7 982	29	no data	no data					
Geography	8 629	20	7 745	30	*	*					
Tourism and recreation	no data	-	10 300	17	16 746	9					
European studies	-	-	no data	-	10 667	18					

<sup>\*</sup> below 30rd the most popular courses

Note: Calculated on the basis of data in the Report of MNiSW (Raport...) on the 2002/2003, 2003/2004, and 2008/2009 recruitment rounds

Source: www.nauka.gov.pl

Table 4. Number of geography students against the total student number in the years 1995–2009

Specification			Index of change				
	1995	1999	2000	2005	2009	1995–2009	
Total number of students*	persons %	378 400	789440 100	1 578 241 100	1 953 832 100	1 927 000 100	244 x
Geography students *	persons %	no data	8059 1,02	11 237 0,71	11324 0,58	7999 0,41	99,2 x

Source: Questionnaire data, archival data after Kamiński (1996) and Czyż (2002) Explanations: \* - students of full-time and extramural studies in total

the largest number of geographers studied at the University of Łódź (Fig. 4). After 2005 the process for a decreasing interest in geography studies has become rather common, affecting both higher education schools that have a long education tradition and significant research potential (UW, UJ, AMU) and smaller centres (PPA, JKU). In the years 2005–2009 the largest indices of growth for full-time studies were noted at the University of Łódź and the University of Gdańsk. In the period 1995–2009 the largest indices of growth were noted at the Pomeranian Pedagogical Academy in Słupsk, the University of Gdańsk, and the Pedagogical University in Kraków (Tab. 5, Fig. 4). Such a rapid increase in the number of geography students at teacher training colleges (PPA, PUC) reflects the growing popularity of pedagogical studies.

Counteracting the outflow of candidates for geography studies, many geography centres launched new programmes, with Spatial economy (AMU, UJ, UŁ, UW) and Tourism and

recreation (AMU, UJ, UŁ, PUC) being the most common (Tab. 2). Besides, some tertiary schools (PPA, AMU, JKU, UŁ, PUC, US) introduced a teacher training course for science — a new subject at the primary school level. This course was incorporated within the framework of a non-obligatory pedagogical block, and alongside training for prospective geography teachers (Hibszer & Tracz 2009). Despite these activities, in the majority of higher education schools after 2005 a decrease in the number of students was noticeable, even in ones with a varied training programme and numerous staff. Large disproportions in the number of students to academic staff ratio were observed: in 2009 it ranged from 4-6 (AMU, UMCS, UW) to 18-21 (KWU in Bydgoszcz, JKU in Kielce) (Tab. 3).

Data included in Tables 4 and 5 indicate univocally that in the discussed period of 20 years changes in higher education has caused growth in the number of higher education schools Vol. 17 • No. 3 • 2013 • pp. 19-25 • ISSN: 2084-6118 • DOI: 10.2478/v10288-012-0042-1

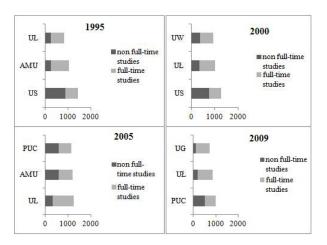


Fig. 4. Universities with the largest number of geography students in the years 1995 – 2009

Source: Questionnaire data, archival data after Kamiński (1996) and Czyż (2002), Polish Science Directory (2009)

offering geography studies, yet it has also been proven that this discipline is not attractive for non-public schools of higher education. Geography studies still arouse a strong interest among young people, but data suggests that keeping the current student numbers will become increasingly difficult (Awramiuk-Godun & Mularczyk 2012, Tracz 2011, Wójtowicz & Tracz 2011).

## **Conclusions**

The development and popularity of geography studies after 1989 were largely influenced by several factors: political and social transformations, demographical changes, educational aspirations of young people, as well as the position of geography as a scientific discipline and its social perception, reflected in young people's interest in geography. The small number of higher education institutions offering geography studies shows that geography courses were not usually opened at non-public tertiary schools. The recently decreasing number of geography students also indicates the diminishing interest in these studies, especially at tertiary schools located in regions where a small number of pupils choose geography for their *Matura* examination, i.e. in the West-Pomeranian, Opole, Lower Silesian Voivodeship (Tracz, 2008).

Table 5. Number of full-time geography students in the years 1995–2009 at public (university and academies) higher schools

	N	lumber of	persons	Change in number		
Name of higher school	1995	2000	2005	2009	1995-2009 (1995=100)	2005-2009 (2005=100)
Pomerania Pedagogical Academy in Słupsk (PPA)	189	472	467	454	240	97
University of Gdańsk (UG)	301	426	590	623	206	63
Adam Mickiewicz University in Poznan (AMU)	777	451	414	264	34	64
Jan Kochanowski University in Kielce (JKU)	454	482	548	491	108	90
Jagiellonian Univeristy (UJ)	367	453	452	398	108	86
Kazimierz Wielki University in Bydgoszcz (KWU)	-	-	332	295	-	88,8
University of Łódź (UŁ)	570	671	597	661	115	111
Maria Curie Skłodowska University in Lublin (UMCS)	406	408	434	360	90	83
Nicolas Copernicus University in Toruń (NCU)	411	567	548	481	117	88
Pedagogical University of Cracow (PUC)	295	277	537	495	168	92
University of Silesia (US)	393	539	502	461	118	92
University of Warsaw (UW)	443	562	577	480	108	83
University of Wrocław (UWr)	386	373	456	484	125	106
University of Szczecin (USz)	177	189	209	-	-	-
In Total	5169	5569	6663	5947	115	89,2

Source: Questionnaire data, archival data after Kamiński (1996) and Czyż (2002), Polish Science Directory (2009)

The situation of particular geographical units is differentiated considering their human resources potential and the position in the structure of the university, but the decrease in the number of students (after 2005) affected almost all universities, in spite of enriching the educational offer with new, more "market" specialties.

Simultaneously, development of the academic staff in higher education schools with geography studies has progressed in both quantitative and qualitative aspects. In geography centres a distinct increase in the number of doctors in the structure of research-didactic staff is observed, while the rate of promotion to the degree of associate professor (dr hab.) and full professor is significantly smaller. In order to plan their future development, higher education schools training geography students should create a national database of geography programmes to enable a systematic analysis of changes in their popularity. The available statistics do not provide such information as it includes geography in larger groups of sciences (natural, social or pedagogical).

Research on recruitment and the level of preparation of young people for higher education was abandoned in the 1980s and that significantly hindered activities aimed at reorganisation and curriculum adjustments within geography programmes. The condition of geography as a scientific discipline and a field of education depends on the number of students and the level of their preparation. Systematic studies on the recruitment and domicile of applicants could provide higher education institutions with essential empirical material.

It is necessary to take up studies on the following stage, i.e. for the years 2008/2009–2012/2013, because in this period of higher education other factors appeared (among others, obligatory introduction of the Bologna system, departure from the 5-years geography training, ordered fields of study, ministerial regulations concerning recruitment and rules of financing etc.). Observing tendencies occurring in education as a whole, as well as the ones which relate to geography studies, will be a valuable source of information for planning the development of this field of study in the future.

# References

- Awramiuk-Godun, A & Mularczyk, M 2012, 'Reasons for choosing geography studies. Comparative analysis of two academic centres: Warsaw and Kielce', *Miscellanea Geographica Regional Studies on Development.* vol. 16, 1, pp. 43–48. Available from: <a href="http://www.degruyter.com/view/j/mgrsd.2012.16.issue-1/v10288-012-0021-6/v10288-012-0021-6.xml?format=INT">http://www.degruyter.com/view/j/mgrsd.2012.16.issue-1/v10288-012-0021-6.xml?format=INT</a> [20 January 2013].
- Czyż, T 2002, 'Rozwój kadry naukowo-dydaktycznej geografów i powiązania ośrodków akademickich w procesie jej kształcenia w Polsce w latach 1990-2000' [The development of the research-didactic staff of geographers and links among academic centres in the process of education in Poland in the years 1990-2000], *Przegląd Geograficzny*, vol. 74, no. 1, pp. 3-27.
- Groenwald, M, Plit, F, Rodzoś, J, Szkurłat, E & Tracz, M 2008, 'Raport o stanie geografii szkolnej w nowym systemie oświaty w Polsce', *Dokumentacja Geograficzna*, vol. 38, pp. 5-17. (in Polish).
- Hibszer, A & Tracz, M 2009, 'Training and additional schooling of the science teachers in Poland after changes in education system' in *Development of science and technology education* in Central and Eastern Europe, ed V Lamanauskas, International Organization for Science and Technology Education (IOSTE), Siauliai, pp. 61-66.
- Jackowski, A, Liszewski, S & Richling, A (eds) 2008, *Historia geografii polskiej*, PWN, Warszawa (in Polish)
- Informator Geografii Polskiej [Directory of Polish Geography], 2006, Łódź: Łódzkie Towarzystwo Naukowe, Komitet Nauk Geograficznych Polskiej Akademii Nauk (in Polish).
- Informator Nauki Polskiej, [Polish Science Directory] 2009, Warszawa: Centrum Informacji Naukowej, Technicznej i Ekonomicznej (in Polish).
- Informator Nauki Polskiej 1989/1990 [Polish Science Directory] 1990, Warszawa: Centrum Informacji Naukowej, Technicznej i Ekonomicznej (in Polish).

- Kamiński, Z 1996, 'Organization of geographical sciences in Poland' in Contemporary problems of Polish geography, ed Z Chojnicki, Bogucki, Wydawnictwo Naukowe, Poznań, pp. 145-163.
- Raport MNiSW o naborze na studia z lat 2008/09, Available from: www.nauka.gov.pl Online [10 September 2010] (in Polish).
- Raport MNiSW o naborze na studia z lat 2003/04, Available from: www.nauka.gov.pl Online. [10 September 2010] (in Polish).
- Raport MNiSW o naborze na studia z lat 2002/03, Available from: www.nauka.gov.pl Online. Proquest [10 September 2010] (in Polish)
- Rocznik Statystyczny [Statistical Yearbook of Poland] 1960, Warszawa GUS.
- Rocznik Statystyczny [Statistical Yearbook of Poland] 1980, Warszawa GUS.
- Rocznik Statystyczny [Statistical Yearbook of Poland], 2000, Warszawa GUS.
- Rocznik Statystyczny [Statistical Yearbook of Poland], 2009, Warszawa GUS.
- Tracz, M 2011, 'Interest in geography and its studies among students of post-secondary school' *Prace i Studia Geograficzne*, vol. 48, pp. 79-86.
- Tracz, M 2008, 'Zróżnicowanie wyników egzaminu maturalnego z geografii na poziomie podstawowym w latach 2005-2008' in *Uczenie się i egzamin w oczach nauczyciela,* eds B Niemierko & M Szmigel, PTDE, Opole, pp. 475-484.
- Ustawa o szkolnictwie wyższym [Law on Higher Education], 1990, Dziennik Ustaw nr 65, poz. 385 ze zm. (in Polish).
- Ustawa o szkolnictwie wyższym [Law on Higher Education], 2005 Dziennik Ustaw nr 164, poz. 1365 (in Polish).
- Wójtowicz, B & Tracz, M 2011, 'Popularność geografii jako kierunku studiów' in *Priorytety badawcze i aplikacyjne geografii polskiej*, eds Z Długosz & T Rachwał, Wydawnictwo Naukowe Uniwersytetu Pedagogicznego, Kraków, pp. 88-100 (in Polish).